Table of Contents

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2019

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number: 001-36294

uniQure N.V.
(Exact name of Registrant as specified in its charter)

The Netherlands
(Jurisdiction of incorporation or organization)

Paasheuvelweg 25a,
1105 BP Amsterdam, The Netherlands
(Address of principal executive offices) (Zip Code)

+31-20-240-6000
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Ordinary shares, par value €0.05 per share	QURE	The NASDAQ Stock Market LLC (The NASDAQ Global Select Market)

Securities registered under Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act.) Yes ☐ No ☒

The aggregate market value of the voting and non-voting ordinary shares held by non-affiliates of the registrant as of June 30, 2019 was $2,957.2 million, based on the closing price reported as of June 28, 2019 on the NASDAQ Global Select Market.

As of February 26, 2020, the registrant had 44,254,903 ordinary shares, par value €0.05, outstanding.

The documents incorporated by reference are as follows:

Portions of the registrant's definitive Proxy Statement for its 2020 Annual Meeting of Shareholders to be filed with the Securities and Exchange Commission no later than April 30, 2020 and to be delivered to shareholders in connection with the 2020 Annual Meeting of Shareholders, are herein incorporated by reference in Part III of this Annual Report on Form 10-K.

TABLE OF CONTENTS

SPECIAL CAUTIONARY NOTICE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains “forward-looking statements” as defined under federal securities laws. Forward-looking statements are based on our current expectations of future events and many of these statements can be identified using terminology such as “believes,” “expects,” “anticipates,” “plans,” “may,” “will,” “projects,” “continues,” “estimates,” “potential,” “opportunity” and similar expressions. These forward-looking statements may be found in Part I, Item 1 “Business,” Part 1, Item 1A “Risk Factors,” Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and other sections of this Annual Report on Form 10-K.

Forward-looking statements are only predictions based on management’s current views and assumptions and involve risks and uncertainties, and actual results could differ materially from those projected or implied. The most significant factors known to us that could materially adversely affect our business, operations, industry, financial position or future financial performance include those discussed in Part I, Item 1A “Risk Factors,” as well as those discussed in Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in this Annual Report on Form 10-K, as well as other factors which may be identified from time to time in our other filings with the Securities and Exchange Commission (“SEC”), or in the documents where such forward-looking statements appear. You should carefully consider that information before you make an investment decision.

You should not place undue reliance on these statements, which speak only as of the date that they were made. Our actual results or experience could differ significantly from those anticipated in the forward-looking statements and from historical results, due to the risks and uncertainties described in this Annual Report on Form 10-K including in “Part I, Item 1A. “Risk Factors,” as well as others that we may consider immaterial or do not anticipate at this time. These cautionary statements should be considered in connection with any written or oral forward-looking statements that we may make in the future or may file or furnish with the SEC. We do not undertake any obligation to release publicly any revisions to these forward-looking statements after completion of the filing of this Annual Report on Form 10-K to reflect later events or circumstances or to reflect the occurrence of unanticipated events. All forward-looking statements attributable to us are expressly qualified in their entirety by these cautionary statements.

In addition, with respect to all of our forward-looking statements, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995.

Part I

Unless the context requires otherwise, references in this report to "uniQure," "Company," "we," "us" and "our" and similar designations refer to uniQure N.V. and our subsidiaries.

Item 1. Business.

Overview

We are a leader in the field of gene therapy, seeking to develop single treatments with potentially curative results for patients suffering from genetic and other devastating diseases. We are advancing a focused pipeline of innovative gene therapies. Our lead program, etranacogene dezaparvovec for the treatment of hemophilia B, is currently being evaluated in a Phase III HOPE-B pivotal trial. In September 2019, we completed the enrollment of the lead-in phase of the HOPE-B pivotal trial. We are also developing a novel gene therapy product candidate, AMT-130, for patients with Huntington's disease. In January 2019, we received notice from the United States Food and Drug Administration ("FDA") of the clearance of our Investigational New Drug ("IND") application and recently initiated a Phase I/II clinical study of AMT-130. Beyond our lead clinical program for hemophilia B and our Huntington's disease program, we have a pipeline of additional AAV-based gene therapy programs in various stages of preclinical development.

We believe our validated technology platform and manufacturing capabilities provide us distinct competitive advantages, including the potential to reduce development risk, cost and time to market. We produce our adeno-associated virus ("AAV")-based gene therapies in our own facilities with a proprietary, commercial-scale, current good manufacturing practices ("cGMP")-compliant, manufacturing process. We believe our Lexington, Massachusetts-based facility is one of the world's leading, most versatile, gene therapy manufacturing facilities.

Key events

Conducting a pivotal study of hemophilia B lead candidate – Etranacogene dezaparvovec (AMT-061)

Etranacogene dezaparvovec is our lead gene therapy candidate and includes an AAV5 vector incorporating the Factor IX-Padua variant. We are currently conducting a pivotal study in patients with severe and moderately-severe hemophilia B. Etranacogene dezaparvovec has been granted Breakthrough Therapy Designation by the FDA and access to the PRIME initiative by the European Medicines Agency ("EMA").

In June 2018, we initiated our Phase III HOPE-B pivotal trial of etranacogene dezaparvovec for hemophilia B. In January 2019, we dosed the first patient in the trial and in September 2019, we completed the enrollment of approximately 60 patients in the lead-in phase of this trial. The trial is a multinational, multi-center, open-label, single-arm study to evaluate the safety and efficacy of etranacogene dezaparvovec. After the six-month lead-in period, patients are receiving a single intravenous administration of etranacogene dezaparvovec. The primary endpoint of the study will be based on the Factor IX ("FIX") activity level achieved following the administration of etranacogene dezaparvovec, and the secondary endpoints will measure annualized FIX replacement therapy usage, annualized bleed rates and safety. Patients enrolled in the HOPE-B pivotal trial have been tested for the presence of pre-existing neutralizing antibodies to AAV5 but are not being excluded from the trial based on their titers.

In February, May, July and December 2019, we presented updated data related to the three patients treated in our Phase IIb dose-confirmation study of etranacogene dezaparvovec. Data from the Phase IIb study of etranacogene dezaparvovec show that all three patients experienced increasing and sustained FIX levels after a one-time administration of etranacogene dezaparvovec. Mean FIX activity was 41% of normal at 52 weeks of follow-up, exceeding threshold FIX levels generally considered sufficient to significantly reduce the risk of bleeding events. The first patient achieved FIX activity of 50% of normal. FIX activity in the second patient was 31% of normal and the third patient was 41% of normal. The second and third patients had previously screen-failed and were excluded from another gene therapy study due to pre-existing neutralizing antibodies to a different AAV vector. Based on the data obtained through October 24, 2019, no patient experienced a material loss of FIX activity, reported any bleeding events or required any infusions of FIX replacement therapy for bleeds. One patient underwent hip surgery due to a pre-existing condition and was treated pre-operatively with short-acting factor replacement. This was reported by the investigator as a serious adverse event unrelated to etranacogene dezaparvovec.

Enrolling Phase I/II clinical study of Huntington product candidate ("AMT-130")

AMT-130 is our novel gene therapy candidate for the treatment of Huntington's disease. AMT-130 utilizes our miQURE™ proprietary, gene-silencing platform and incorporates an AAV vector carrying a microRNA ("miRNA") specifically designed to silence the huntingtin gene and the potentially highly toxic exon 1 protein fragment. AMT-130 has received orphan drug and fast track designations from the FDA and Orphan Medicinal Product Designation from the EMA.

In January 2019, our IND application for AMT-130 was cleared by the FDA enabling us to initiate our planned Phase I/II clinical study. The Phase I/II protocol is a randomized, imitation surgery-controlled, double-blinded study. The study will include three surgical sites and multiple referring, non-surgical sites in the U.S. The primary objective of the study is to evaluate the safety, tolerability and efficacy of AMT-130 at two doses. Patient screening for the study is currently underway. Additionally, we manufactured cGMP clinical material at our Lexington facility during 2019 and have released the clinical material for shipment.

Expanding our preclinical pipeline and proprietary technology platform

In November 2018, we announced the expansion of our research pipeline with three new AAV-based product candidates. Our lead preclinical candidate, AMT-180, is a novel hemophilia A gene therapy candidate that we believe has the potential to treat all hemophilia A patients, including those with past and current inhibitors. We are currently conducting safety and toxicology studies of AMT-180 to support the submission of an IND application. Our next most advanced preclinical candidates, AMT-190 and AMT-150, are differentiated gene therapy candidates for the treatment of Fabry disease and Spinocerebellar Ataxia Type 3 ("SCA3"), respectively. We are currently preparing to initiate safety and toxicology studies of AMT-150 to support the submission of an IND application. We are currently conducting additional preclinical studies to identify a lead candidate for AMT-190 for further safety testing.

We are actively engaged in the research and development of other potential product candidates that are currently in the pre-clinical stage of development as well as other related technologies in the field of gene therapy.

Financing

In September 2019, we raised $242.7 million of net proceeds, after deducting underwriting discounts and commissions and other offering expenses payable by the Company, through a follow-on public offering of 5,625,000 ordinary shares at a public offering price of $46.00 per ordinary share.

Our Mission and Strategy

Our mission is to build an industry-leading, fully integrated and global company that leverages its validated technology and manufacturing platform to deliver transformative gene therapy products to patients with serious unmet medical needs.

Our strategy to achieve this mission is to:

Advance the development of etranacogene dezaparvovec (AMT-061), a potentially best-in-class treatment of hemophilia B. Etranacogene dezaparvovec combines the potential advantages of AAV5 with an enhanced Padua-FIX transgene, and may provide optimized clinical and tolerability benefits to all, or nearly all patients with hemophilia B. In September 2019, we completed enrollment of approximately 60 patients in the lead-in phase of our Phase III HOPE-B pivotal study.

Maintain our leadership position in commercial-scale AAV manufacturing. We have established cGMP, commercial-scale manufacturing capabilities for AAV-based gene therapies in our state-of-the-art Lexington, Massachusetts facility. We successfully produced batches of multiple gene therapy products using the same fundamental manufacturing process, methods and controls. We believe the modularity of our platform provides us with distinct advantages, including the potential for reduced development risk and faster times to market.

Build a pipeline of gene therapy programs focused on rare and orphan diseases targeting liver-directed and central-nervous system ("CNS") diseases. Beyond our lead clinical program for hemophilia B and our Huntington's disease program, we have a pipeline of additional AAV-based gene therapy programs in various stages of preclinical development. We are leveraging our leading technology platform, which includes novel vectors, promoters and manufacturing capabilities, to develop gene therapies primarily focused on rare, monogenic liver-directed, and CNS disorders as well as cardiovascular diseases.

Leverage the favorable immunogenicity profile of AAV5-based gene therapies to develop multiple products. We have developed extensive experience with our AAV5-based gene therapies, including in five clinical trials in multiple liver-directed and CNS diseases. During these clinical trials, no patient treated with AAV5-based gene therapies experienced a confirmed immune response to the AAV5 capsid or complications associated with T-cell activation. Additionally, the AAV5 capsid has demonstrated a low avidity to pre-existing neutralizing antibodies ("Nab"), which may enable all, or nearly all patients to be eligible for treatment with AAV5-based gene therapies.

Invest in next-generation technologies with the goal of enhancing safety, improving efficacy and expanding the applicability of gene therapy to patients. We are developing proprietary technologies that have the potential to augment the safety and efficacy of our product candidates and broaden the applicability of our gene therapies to a wider range of diseases and patients. These technologies include (i) miQURE^{TM}, our one-time administered gene silencing platform, (ii) tailored vectors, promoters and other enhancers; (iii) optimized delivery and administration techniques; and (iv) novel transgenes. These technologies are developed both in-house by our experienced research team in Amsterdam, the Netherlands, as well as via collaborations with third parties.

Continue to expand our intellectual property portfolio. We have established what we believe is a leading intellectual property portfolio covering various aspects of our technology and programs, including (i) elements of our gene therapy constructs, such as AAV vectors, promoters and transgenes, including the novel Padua-FIX gene we utilize in etranacogene dezaparvovec for hemophilia B; (ii) innovative delivery technologies, such as re-administration of AAV gene therapy; and (iii) proprietary manufacturing processes covering key components of our upstream and downstream capabilities. We expect to continue to expand our intellectual property portfolio by aggressively seeking patent protection for promising aspects of our technology platform and product candidates.

Our Product Candidates

A summary of our key development programs is provided below:

	Preclinical	Phase I/II	Phase III
Liver-directed Diseases			
Hemophilia B etranacogene dezaparvovec (AMT-061)			✓
Hemophilia A (AMT-180)	✓		
Fabry disease (AMT-190)	✓		
Other liver-directed targets	✓		
CNS Diseases			
Huntington's disease (AMT-130)		✓	
SCA Type 3 (AMT-150)	✓		
Other CNS-directed targets	✓		
Partnered Programs			
Partnered research targets*	✓		

*Collaboration with Bristol-Myers Squibb

Liver-directed diseases

Hemophilia B

Hemophilia B Disease and Market Background

Hemophilia B is a serious and rare inherited disease in males characterized by insufficient blood clotting. The condition can lead to repeated and sometimes life-threatening episodes of external and internal bleeding following accidental trauma or medical interventions. Severe hemophilia is characterized by recurrent episodes of spontaneous joint bleeds that cause long-term damage to the joints resulting in disabling arthropathy. Bleeds may be fatal if they occur in the brain. The deficient blood clotting results from the lack of functional human Factor IX ("hFIX"). Treatment of hemophilia B today consists of prophylactic or on-demand protein replacement therapy, in which one to three times weekly intravenous administrations of plasma-derived or recombinant hFIX are required to prevent bleeding and once daily infusions in case bleeding occurs. Hemophilia B occurs in approximately 1 out of 30,000 live male births.

Our Development of etranacogene dezaparvovec for Hemophilia B

We are currently developing etranacogene dezaparvovec, a gene therapy for patients with hemophilia B that is designed to restore FIX activity, an essential protein for blood clotting. Etranacogene dezaparvovec includes an AAV5 vector incorporating the FIX-Padua variant ("FIX-Padua"). Etranacogene dezaparvovec is identical in structure to our first-generation hemophilia B product candidate, AMT-060, apart from two nucleotide substitutions in the coding sequence for FIX. The FIX-Padua variant expresses a protein with a single amino acid substitution that has been reported in multiple preclinical and nonclinical studies to provide an approximate eight-to nine-fold increase in FIX activity compared to the wild-type FIX protein, which was incorporated in AMT-060. All other critical quality attributes of AMT-061 are expected to be comparable to those of AMT-060, as AMT-061 utilizes the same AAV5 capsid and proprietary insect cell-based manufacturing platform.

Etranacogene dezaparvovec is intended to be delivered by intravenous ("IV")-infusion, without immunosuppressant therapy, through the peripheral vein in a single treatment session for approximately 30 minutes.

Our goal for etranacogene dezaparvovec is to develop a gene therapy with the following profile:

- long-term safety, including a favorable immunogenicity profile;
- predictable, sustained and potentially curative increases in FIX activity;
- significant reductions in both bleeding rates and the need for FIX replacement therapy; and
- broad patient eligibility, including the potential to treat all or nearly all patients with hemophilia B.

AAV5-based gene therapies have been used in a multitude of clinical trials, including five clinical trials conducted by uniQure in patients with hemophilia B and other disorders. No patient treated in clinical trials with our AAV5-based gene therapies has experienced any confirmed, cytotoxic T-cell-mediated immune response to the capsid. An independent clinical trial has demonstrated that AAV5 has the lowest prevalence of pre-existing neutralizing antibodies compared to other AAV vectors. Data from our clinical, preclinical and nonclinical studies suggest that all, or nearly all patients may be eligible for treatment with etranacogene dezaparvovec.

The FDA has agreed that etranacogene dezaparvovec will fall under the existing Breakthrough Therapy Designation and IND for AMT-060, and the EMA has also agreed that etranacogene dezaparvovec will fall under the current priority medicines ("PRIME") designation.

In June 2018, we initiated our Phase III HOPE-B pivotal trial of etranacogene dezaparvovec. The trial is a multinational, multi-center, open-label, single-arm study to evaluate the safety and efficacy of etranacogene dezaparvovec.

In January 2019 we dosed the first patient in our HOPE-B pivotal trial and in September 2019, we completed the enrollment of approximately 60 patients in the lead-in phase of the trial. The adult hemophilia B patients, which were classified as severe or moderately severe, were enrolled in a six-month observational period during which time they will continue to use their current standard of care to establish a baseline control. After the six-month lead-in period, patients will receive a single IV-administration of etranacogene dezaparvovec. The primary endpoint of the study is based on the FIX activity level achieved following the administration of etranacogene dezaparvovec, and the secondary endpoints are

annualized FIX replacement therapy usage, annualized bleed rates and safety. Patients enrolled in the HOPE-B trial were tested for the presence of pre-existing neutralizing antibodies to AAV5 but were not excluded from the trial based on their titers.

In September 2018, we completed the dosing of a Phase IIb dose-confirmation study of etranacogene dezaparvovec. The Phase IIb study is an open-label, single-dose, single-arm, multi-center trial being conducted in the United States. The objective of the study was to evaluate the safety and tolerability of etranacogene dezaparvovec and confirm the dose based on FIX activity at six weeks after administration. Three patients with severe hemophilia were enrolled in this study and received a single intravenous infusion of $2x10^{13}$ genome copies per kilogram ("gc/kg"). Patients were evaluated for the presence of pre-existing neutralizing antibodies to AAV5 but were not excluded from the trial on this basis. We followed the patients for a total 52 weeks to assess FIX activity, bleeding rates and usage of FIX replacement therapy, and will monitor the three patients for a total of five years to evaluate the safety of etranacogene dezaparvovec.

In December 2018, the study's Data Monitoring Committee evaluated initial data from the Phase IIb study and confirmed the dose of $2x10^{13}$ gc/kg for the Phase III pivotal trial.

In February, May, July and December 2019, we presented updated data from the Phase IIb dose-confirmation study of etranacogene dezaparvovec. The most recent data that we announced from the Phase IIb study of etranacogene dezaparvovec show that all three patients experienced increasing and sustained FIX levels after a one-time administration of etranacogene dezaparvovec, with two of the three patients maintaining FIX activity in the normal range. Mean FIX activity was 41% of normal at 52 weeks of follow-up, exceeding threshold FIX levels generally considered sufficient to significantly reduce the risk of bleeding events. The first patient achieved FIX activity of 50% of normal, the second patient was 31% of normal and the third patient was 41% of normal. The second and third patients had previously screen-failed and were excluded from another gene therapy study due to pre-existing neutralizing antibodies to a different AAV vector. Based on the data obtained through October 24, 2019, no patient experienced a material loss of FIX activity, reported any bleeding events or required any infusions of FIX replacement therapy for bleeds. One patient underwent hip surgery due to a pre-existing condition and was treated perioperatively with short-acting factor replacement. This was reported by the investigator as a serious adverse event unrelated to etranacogene dezaparvovec.

Intellectual Property for etranacogene dezaparvovec

In 2017, we acquired intellectual property from Professor Paolo Simioni ("Dr. Simioni"), a hemophilia expert at the University of Padua, Italy. The intellectual property includes U.S. Patent Number 9,249,405, which covers compositions of FIX-Padua nucleic acids and polypeptides (proteins), as well as their therapeutic uses.

On May 29, 2018, the U.S. Patent and Trademark Office ("USPTO") granted us a second patent, U.S. Patent Number 9,982,248, which covers methods of treating coagulopathies (bleeding disorders), including hemophilia B, using AAV-based gene therapy with nucleic acid encoding the hyperactive FIX Padua variant. The FIX Padua variant is a FIX protein carrying a leucine at the R338 position, often called the "FIX-Padua" or "Padua mutant".

On November 5, 2019, the USPTO granted us a third patent, U.S. Patent Number 10,465,180, which covers any AAV comprising a nucleic acid encoding a FIX-Padua protein, and promoter sequences, transcription termination and control elements. The claims also cover FIX-Padua variants with at least 70% sequence identity to FIX-R338L.

In addition to the U.S. patents, on February 20, 2018, the Canadian Intellectual Property Office granted Patent Number 2,737,094, which covers FIX-Padua nucleic acids for use in gene therapy and FIX-Padua polypeptides for use in FIX replacement therapy.

On June 13, 2018, we were granted European Patent 2337849 B1 directed to a FIX polypeptide protein. The opposition period with respect to such patent expired on March 13, 2019, by which time five parties had filed an opposition. On July 25, 2019, we submitted responses to such oppositions with the European Patent Office, or EPO, and oral proceedings with respect to such oppositions will take place in June and July 2020. In addition, on May 15, 2019, a divisional European patent application in the FIX-Padua family, EP 3252157, was refused. In September 2019, we filed a notice of appeal with respect to such refusal. We are also pursuing a European divisional patent application that was filed on May 14, 2019. Both in the U.S. and in Europe, we have pending divisional applications still in prosecution phases.

Phase I/II Clinical Trial of AMT-060

In the third quarter of 2015, we initiated a Phase I/II clinical trial of AMT-060, our first-generation hemophilia B product candidate, in patients with severe or moderately-severe hemophilia B. AMT-060 consists of an AAV5 vector carrying a codon-optimized, wild-type, human FIX gene cassette licensed from St. Jude Children's Research Hospital. The study is a five-year, open-label, uncontrolled, single-dose, dose-ascending multi-center trial that includes two cohorts, with the low-dose cohort using a treatment of $5x10^{12}$ gc/kg and the second-dose cohort using $2x10^{13}$ gc/kg. We enrolled five patients into the low dose cohort in the third quarter 2015. Another five patients were enrolled into the high dose cohort between March and May 2016.

In December 2019, we presented four-year follow-up data related to this Phase I/II clinical trial. All 10 patients enrolled continue to show long-term meaningful clinical impact, including sustained increases in FIX activity and improvements in their disease state as measured by reduced usage of FIX replacement therapy and decreased bleeding frequency. At up to four years of follow-up, AMT-060 continues to be generally well-tolerated, with no new serious adverse events and no development of inhibitors since the last reported data.

All five patients in the high-dose cohort of $2x10^{13}$ gc/kg continue to be free of routine FIX replacement therapy at up to three and a half years after treatment. Based on the six months of data collected during the fourth year of follow-up, the mean annualized bleeding rate was zero compared to an average of four bleeds during the year prior to treatment, representing a 100% reduction. Steadystate mean yearly FIX activity at three and a half years was 7.5%, compared with 7.1% in the first, 8.4% in the second and 7.9% in the third year.

Hemophilia A program (AMT-180)

Hemophilia A Disease and Market Background

Hemophilia A, also called factor VIII ("FVIII") deficiency or classic hemophilia, is a genetic disorder caused by missing or defective factor VIII, a clotting protein. Although it is passed down from parents to children, about 1/3 of cases are caused by a spontaneous mutation, or change, in a gene. More than half of the patients have the severe form of hemophilia A. Patients with severe hemophilia A experience bleeding following an injury and may have frequent spontaneous bleeding episodes, often into their joints and muscles. Hemophilia A occurs in approximately one in 5,000 live births. Approximately 30% of patients with severe hemophilia A will develop an inhibitor that neutralizes the infused FVIII activity. Historically, this patient population has been underserved due to past exclusion from gene therapy research in clinical development.

Our Development of AMT-180 for Hemophilia A

AMT-180 is a novel hemophilia A gene therapy that we believe has the potential to treat all hemophilia A patients including those with past and current inhibitors. AMT-180 is a one-time, intravenously-administered, AAV5-based gene therapy incorporating a proprietary, exclusively licensed, modified FIX gene, FIX-FIAV, that has been demonstrated in preclinical studies to convey Factor VIII-independent activity and circumvent inhibitors to Factor VIII. Preclinical studies in wild-type and hemophilia A mice indicated that administration of FIX-FIAV resulted in FVIII-independent activity and was not associated with hypercoagulability. A separate study in non-human primates indicated that a single dose of AMT-180 resulted in expression levels that translate into FVIII-independent activity. In addition, FIX-FIAV induced thrombin activation in FVIII-depleted human plasma with or without inhibitors. These data indicate that AMT-180 may lead to durable expression in hemophilia A patients and may provide long-term prevention of bleeds.

In May 2019, we presented preclinical data at the American Society of Gene and Cell Therapy ("ASGCT") Annual Meeting demonstrating that AMT-180 induced thrombin activation, and up to 29% of Factor VIII-independent activity, in FVIII-depleted human plasma. In these studies, a single intravenous administration of AMT-180 resulted in sustained, dose-dependent hemostatic effect as measured by one-stage clotting assay. Further, AMT-180 demonstrated activation kinetics similar to native FIX and was not hyperactive. In a pilot study in non-human primates we demonstrated that administration of AMT-180 resulted in sufficient FIX protein expression that could be translated to Factor VIII-independent activity in humans. No elevation of coagulation activation markers or signs of thrombi formation were observed.

We are currently conducting safety and toxicology studies of AMT-180 to support the submission of a clinical trial application.

Fabry disease program (AMT-190)

Fabry Disease and Market Background

Fabry disease is a progressive, inherited, multisystemic lysosomal storage disease characterized by specific neurological, cutaneous, renal, cardiovascular, cochleo-vestibular and cerebrovascular manifestations. Fabry disease is caused by a defect in a gene that encodes for a protein called α-galactosidase A ("GLA"). The GLA protein is an essential enzyme required to breakdown globotriaosylsphingosine ("Gb3") and lyso-globotriaosylsphingosine ("lyso-Gb3"). In patients living with Fabry disease, Gb3 and lyso-Gb3 accumulate in various cells throughout the body causing progressive clinical signs and symptoms of the disease. Current treatment options, which consist of bi-weekly intravenous enzyme replacement therapy, typically have no therapeutic benefit in patients with advanced renal or cardiac disease. Studies have also shown that a majority of male patients develop antibodies that inhibit the GLA protein and interfere with therapeutic efficacy.

Fabry disease has two major disease phenotypes: the type 1 "classic" and type 2 "later-onset" subtypes. Both lead to renal failure, and/or cardiac disease, and early death. Type 1 males have little or no functional a-Gal A enzymatic activity (<1% of normal mean) and marked accumulation of GL-3/Gb3 and related glycolipids in capillaries and small blood vessels which cause the major symptoms in childhood or adolescence. In contrast, males with the type 2 "later-onset" phenotype (previously called cardiac or renal variants) have residual a-Gal A activity, lack GL-3/Gb3 accumulation in capillaries and small blood vessels, and do not manifest the early manifestations of type 1 males. They experience an essentially normal childhood and adolescence. They typically present with renal and/or cardiac disease in the third to seventh decades of life. Most type 2 later-onset patients have been identified by enzyme screening of patients in cardiac, hemodialysis, renal transplant, and stroke clinics and recently by newborn screening. Fabry disease occurs in all racial and ethnic populations and affects males and females. It is estimated that type 1 classic Fabry disease affects approximately one in 40,000 males. The type 2 later-onset phenotype is more frequent, and in some populations may occur as frequently as about 1 in 1,500 to 4,000 males.

Our Development of AMT-190 for Fabry Disease

AMT-190 is a one-time, IV-administered, AAV5-based gene therapy designed to circumvent GLA antibodies that can inhibit efficacy in Fabry patients. AMT-190 incorporates a proprietary, exclusively licensed, modified NAGA ("ModNAGA") variant. ModNAGA may have several advantages over other therapies for Fabry disease, including higher stability in blood, circumvention of inhibitors, better biodistribution in the target organs, secondary toxic metabolite reduction and improved cross-correction of neighboring cells. As such, AMT-190 has the potential to be a more effective, longer-term treatment of Fabry disease. In cultured cells and in a study in wild-type mice, AMT-190 resulted in significant increases in GLA activity. In a preclinical study, Fabry mice were injected with a single dose of AMT-190, resulting in ModNAGA expression with subsequent GLA-activity in plasma. We believe that these studies may demonstrate proof-of-concept of AMT-190 as a gene therapy candidate for Fabry disease.

At the ASGCT Annual Meeting in May 2019, we presented data from in vitro and in vivo studies showing that AMT-190 has the potential to become a one-time treatment option that could be an improvement upon the enzyme replacement standard of care with more efficient uptake in the kidney and heart and an improved immunogenicity profile. In particular, data from a study in wild-type mice showed a single intravenous administration of AMT-190 resulted in a ten- to twenty-fold higher GLA activity in the plasma compared to the control group. Additionally, in a study in a diseased mouse model, GLA activity was significantly increased in plasma, and lyso-Gb3 was significantly reduced in target organs after a single dose of AMT-190. In silico and in vitro studies also showed that the modifications introduced into NAGA are believed to pose a very low immunogenicity risk.

Central Nervous System diseases

Huntington's Disease

Huntington's Disease and Market Background

Huntington's disease is a severe genetic neurodegenerative disorder causing loss of muscle coordination, behavioral abnormalities and cognitive decline, often resulting in complete physical and mental deterioration over a 12 to 15-year period. The median survival time after onset is 15 to 18 years (range: 5 to >25 years). Huntington's disease is caused by an inherited defect in a single gene that codes for a protein called Huntingtin ("HTT"). The prevalence of Huntington's disease is three to seven per 100,000 in the general population, similar in men and women, and it is therefore considered a rare disease. Despite the ability to identify Huntington's disease mutation carriers decades before onset, there is currently no available therapy that can delay onset or slow progression of the disease. Although some symptomatic treatments are available, they only are transiently effective despite significant side effects.

Our Development of AMT-130 for Huntington's Disease

AMT-130 is our gene therapy candidate targeting Huntington's disease that utilizes an AAV vector carrying an engineered miRNA designed to silence HTT and exon 1 HTT, a potentially highly toxic protein fragment that may also contribute to disease pathology. AMT-130 comprises a recombinant AAV5 vector carrying a DNA cassette, encoding a miRNA that non-selectively lowers or knocks-down HTT and exon 1 HTT in Huntington's disease patients. AMT-130 was developed using our miQURE™ technology, a proprietary, one-time administered gene silencing platform. AMT-130 has received orphan drug designation from the FDA and Orphan Medicinal Product Designation from the EMA. AMT-130 is intended to be administered directly into the brain via a stereotactic, magnetic resonance imaging guided catheter.

Our goal for AMT-130 is to develop a gene therapy with the following profile:

- One-time administration of disease-modifying therapy into the striatum, the area of the brain where Huntington's disease is known to manifest;
- Biodistribution of the therapy in both the deep and cortical structures of the brain via transport of the AAV vector and through secondary exosome-mediated delivery; and
- Safe, on-target and durable knockdown of HTT and exon 1 HTT.

In April 2017, we presented preclinical data on AMT-130 in transgenic mini pigs. The data demonstrated widespread, dose-dependent distribution of the vector throughout the mini pig brain that corresponded strongly with the mutant HTT expression. Researchers also observed a dose-dependent reduction in mutant HTT protein levels, as well as similar trends in cerebral spinal fluid. There were no serious adverse events related to the surgical procedure or the AMT-130 treatment.

In October 2017, we presented preclinical data on AMT-130 in a mouse model with a highly aggressive form of Huntington's disease which demonstrated significant improvements in both motor-coordination and survival, as well as a dose-dependent, sustained reduction in HTT.

In April 2018, we presented an overview of preclinical data establishing proof-of-concept for AMT-130 at the 2018 American Academy of Neurology Annual Meeting in Los Angeles, California. Data from multiple studies in Huntington's disease animal models across three different species showed that a single intraparenchymal administration of AMT-130 into the striatum, resulted in a dose-dependent and sustained reduction of mutant huntingtin protein ("mHTT") in both the deep structures of the brain and the cortex. Specifically, we presented data from the ongoing preclinical study in transgenic minipigs, one of the largest Huntington's disease animal models available, demonstrating significant reductions in human mHTT by a median of 68% in the striatum and a median of 47% in the frontal cortex at 6 months after administration of AMT-130.

In January 2019, our IND application for AMT-130 was cleared by the FDA and in the fourth quarter of 2019 we initiated patient screening for a Phase I/II study. The Phase I/II protocol is a randomized, imitation surgery-controlled, double-blinded study conducted at three surgical sites, and multiple referring, non-surgical sites in the U.S. The primary objective of the study is to evaluate the safety, tolerability and efficacy of AMT-130 at two doses. The cGMP clinical material has been manufactured in 2019 at our Lexington facility and has been released for shipment.

In February 2019, we presented new preclinical data at the 14th Annual CHDI Huntington's disease Therapeutics Conference that illustrate the therapeutic potential of AMT-130 in restoring function of damaged brain cells in Huntington's disease. In that study, AMT-130 was generally well-tolerated and resulted in a sustained reduction of mutant huntingtin protein.

Spinocerebellar Ataxia Type 3 program

Spinocerebellar Ataxia type 3 and Market Background

SCA3, also known as Machado-Joseph disease, is a central nervous system disorder caused by a CAG-repeat expansion in the ATXN3 gene that results in an abnormal form of the protein ataxin-3. Patients with SCA3 experience brain degeneration that results in movement disorders, rigidity, muscular atrophy and paralysis. There is currently no treatment available that slows the progressive course of this potentially lethal disease.

Prevalence of SCA3 is estimated to be one to two per 100,000 with significant geographical and ethnic variations, with the highest prevalence rates observed in the Azores (Flores Island (1/239)), the intermediate prevalence rates observed in Portugal, Germany, the Netherlands, China and Japan, and the lower prevalence observed in North America, Australia and India. SCA3 is the most common form of ADCA1 in most genetically characterized populations.

Our preclinical SCA3 program

AMT-150 is a one-time, intrathecally-administered, AAV gene therapy incorporating our proprietary miQURE™ silencing technology that is designed to halt ataxia in early manifest SCA3 patients. In an in-vitro study with human Induced Pluripotent Stem ("IPS") derived neurons, AMT-150 has been shown to lower the human ataxin-3 protein by 65%, without any off-target effects. We also performed a proof-of-concept in-life study in SCA3 mice demonstrating that AMT-150 was able to lower toxic ataxin-3 protein by up to 53% in the cerebellum and up to 65% in the brain stem after a single administration. Further studies in non-human primates demonstrate the ability to distribute and express a reporter gene in the most degenerated brain regions in SCA3. In these preclinical studies, a single administration of AMT-150 resulted in sustained expression and efficient processing with on-target engagement. Additionally, AMT-150 lacked off-target activity in these studies. We are currently preparing to initiate safety and toxicology studies of AMT-150 to support the submission of an IND application.

Bristol-Myers Squibb Collaboration

In May 2015, we entered into a collaboration and license agreement and various related agreements with Bristol-Myers Squibb Company ("BMS"), that provided BMS with exclusive access to our gene therapy technology platform for the research, development and commercialization of therapeutics aimed at multiple targets in cardiovascular and other diseases. The collaboration agreement provides that we may collaborate on up to ten collaboration targets in total. BMS has currently designated four collaboration targets. We agreed to certain restrictions on our ability to work independently of the collaboration, either directly or indirectly through any affiliate or third party, on certain programs that would be competitive with the collaboration programs. For any collaboration targets that are advanced to clinical development, we would be responsible for manufacturing of clinical and commercial supplies. BMS has been reimbursing us for our research and development costs in support of the collaboration during the initial research term and would lead development, regulatory and commercial activities for any collaboration targets that may be advanced.

During the initial four-year research term, we supported BMS in discovery, non-clinical, analytical and process development efforts in respect of the designated collaboration targets. In February 2019, BMS requested a one-year extension of the research term. In April 2019, following an assessment of the progress of this collaboration and our expanding proprietary programs, we notified BMS that we did not intend to agree to an extension of the research term, but rather we preferred to restructure the collaboration to reduce or eliminate certain of our obligations under it. Accordingly, the research term under the collaboration terminated on May 21, 2019, and we are currently in discussions with BMS potentially to restructure the collaboration and license agreement and other related agreements following the expiration of the research term. Although such discussions are ongoing and may not result in any amendment to these arrangements, we believe that the final resolution of these discussions may result in material changes to our collaboration with BMS.

Equity arrangements

After entering into the collaboration in 2015, BMS acquired 2.4 million or 9.9% of our outstanding shares following the issuance for aggregate consideration of $75.5 million. As of December 31, 2019, BMS held 5.5% of our outstanding ordinary shares. We also granted BMS two warrants. BMS may at its option acquire, at a premium to the market, an additional number of shares such that BMS owns 14.9% and 19.9%, respectively, of our outstanding ordinary shares immediately after such purchase. The exercise of each warrant is conditioned upon the designation of a specified number of additional collaboration targets and payment of related fees by BMS, as well as a minimum number of collaboration programs under development. As of December 31, 2019, BMS had designated a total of four Collaboration Targets, and as such, the warrants were not exercisable.

We also entered into an Investor Agreement with BMS regarding the rights and restrictions relating to the ordinary shares to be acquired by BMS. We have granted BMS certain registration rights that allow BMS to require us to register our securities beneficially held by BMS under the Exchange Act. BMS may make up to two such demands (or three, in the event that either warrant is exercised) for us to register the shares, provided that we may deny such demand if (i) the market value of the shares to be registered is less than $10 million (provided however, if BMS holds less than $10 million worth of our shares, we must comply with their demand for registration), (ii) we certify to BMS that we plan to effect a registration within 120 days of their demand or we are engaged in a transaction that would be required to be disclosed in a registration statement and that is not reasonably practicable to be disclosed at that time, or (iii) we have already effected one registration statement within the twelve months preceding BMS's demand for registration. In addition, independent of their demand registration rights, upon the occurrence of certain events, we must also provide BMS the opportunity to include their shares in any registration statement that we effect.

We also granted BMS certain information rights under the Investor Agreement, although these requirements may be satisfied by our public filings required by U.S. securities laws.

Pursuant to the Investor Agreement, without our consent, BMS may not (i) acquire a number of shares such that the number of shares that BMS beneficially holds is greater than the percentage acquired, or which may be acquired, after giving effect to each of the tranches under the Share Subscription Agreement and the two warrants; (ii) propose, offer or participate in any effort to acquire us or one of our subsidiaries; (iii) propose, offer or participate in a tender offer for our shares or any exchange of shares that would effect a change of control of our company; (iv) seek to control or influence our governance or policies; (v) join or participate in any group regarding the voting of our ordinary shares; or (vi) take certain other similar actions. BMS may still, among other things, make a non-public, confidential proposal to enter into a business combination or similar transaction with our company. These standstill restrictions will terminate upon the occurrence of certain events including, but not limited to, the acquisition of a certain material number of shares by a third party, if we enter into a merger agreement or similar transaction with a third party, or upon the passage of a defined period of time subsequent to the acquisition of shares pursuant to the Share Subscription Agreement or the warrants.

BMS is also subject to a lock-up pursuant to the Investor Agreement. Without our prior consent, BMS may not sell or dispose of its shares in respect of each ordinary share acquired pursuant to the Share Subscription Agreement and the warrants, until the first anniversary of issuance of each such ordinary shares. However, this lock-up may terminate sooner or its terms could change in the event the Collaboration Agreement is terminated or amended.

The Investor Agreement also requires BMS to vote all of our ordinary shares it beneficially holds in favor of all items on the agenda for the relevant general meeting of shareholders of our company as proposed on behalf of our company, unless, in the context of a change of control or similar transaction, BMS has itself made an offer to our company or our board in connection with the transaction that is the subject of the vote, in which case it is free to vote its shares at its discretion. This voting provision will terminate upon the later of the date on which BMS no longer beneficially owns at least 4.9% of our outstanding ordinary shares, the closing of a transaction that provides BMS exclusive and absolute discretion to vote our shares it beneficially holds, or the termination of the Collaboration Agreement for breach by us.

New Technology Development

We are seeking to develop next-generation technologies with the goal of further improving the potential of AAV-based gene therapies to treat patients suffering from debilitating diseases.

We are focused on innovative technologies across each of the key components of an AAV-based gene therapy, including: (i) the capsid, or the outer viral protein shell that encloses the target DNA; (ii) the promoter, or the DNA sequence that drives the expression of the transgene; and (iii) the transgene, or therapeutic gene.

We dedicate significant effort to designing and screening novel AAV capsids with the potential for (i) higher biological potency; (ii) increased specificity and penetration of specific tissue types; and (iii) enhanced safety. We believe we have significant expertise in vector engineering and have created promising genetically engineered capsids using a “rational design” approach. Multiple capsid engineering projects are currently ongoing including directed evolution with 4D Molecular Therapeutics (“4DMT”) for improved tissue-specific targeted transduction of AAV.

Briefly, identification of next generation capsids via “directed evolution” involves a capsid selection process in which libraries of mutant variants are screened for optimal properties. In January 2014, we entered into a collaboration and license agreement with 4DMT for the discovery and optimization of next-generation AAV capsids targeting the liver and the brain, which we amended and restated (the “Amended and Restated CLA”) in August 2019. In connection with the execution of the Amended and Restated CLA we entered into a separate Collaboration and License Agreement (“New CLA”) with 4DMT. Pursuant to the terms of the Amended and Restated CLA, we received from 4DMT an exclusive sublicensable, worldwide license under certain 4DMT intellectual property rights to research, develop, make, use and commercialize previously selected AAV capsid variants and certain associated products using 4DMT proprietary AAV technology for delivery of gene therapy constructs to cells in the central nervous system and the liver (“the Field”). In accordance with the New CLA, the parties agreed to research and develop, at 4DMT’s cost, new AAV capsid variants using 4DMT proprietary AAV technology for delivery of up to six additional transgene constructs in the Field that will be selected by us.

In addition to the directed evolution approach where we screen a library of AAV mutants, we are also rationally engineering the AAV capsids to target them to specific cells and/or tissues. Using such engineered AAV capsids will ensure selected transduction of the targeted, desired cell type. The strategy will diminish potential off target effects.

We work extensively on designing synthetic promoters with the potential of enabling higher levels of protein expression in specific tissue types. A “promoter” is an essential component of a gene therapy construct that controls expression of a therapeutic protein. Synthetic promoters, which do not exist in nature, are optimally tailored to drive gene expression at a desired level and specificity. In January 2015, we entered into an agreement with Synpromics Limited (“Synpromics”), a United Kingdom-based biotechnology company, to jointly fund research relating to the development of optimized promoters for liver-directed gene therapies. This resulted in an array of liver-specific promoters proprietary to uniQure and one such promoter from the Synpromics collaboration is being utilized in our AMT-180 program for the treatment of hemophilia A. In October 2018, we presented non-clinical data demonstrating that this optimized promoter is capable of generating up to a 40-fold increase in expression compared to a reference promoter. The new promoters may enable us to tailor expression levels required for a specific therapeutic transgene.

In order to further tailor gene therapies to optimally address certain disorders we may also incorporate specific modifications into the transgenes of our gene therapy constructs. For example, we incorporated the Padua-FIX variant into our hemophilia B gene therapy in order to substantially increase the resulting FIX activity and potentially improve clinical outcomes. For other programs, such as our gene therapy constructs for hemophilia A and Fabry disease, we have also utilized modified transgenes with the goal of enhancing efficacy, durability and safety, as well as expanding the access of gene therapies to patients with inhibitors.

We have also demonstrated the ability to deliver engineered DNA constructs that can silence or suppress disease-causing genes. Our miQURE™ gene silencing platform, based on exclusively licensed technology from CSHL, is designed to degrade mutated genes without off-target toxicity and induce silencing of the mutated gene in the entire target organ through secondary exosome-mediated delivery. miQURE™-based gene therapy candidates, such as AMT-130, incorporate proprietary, therapeutic miRNA constructs that can be delivered using AAVs to potentially provide long-lasting activity. Preclinical studies of miQURE™-based gene therapies have demonstrated several important advantages, including enhanced tissue-specificity, improved nuclear and cytoplasmic gene lowering and no off-target effects associated with impact to the cellular miRNA or messenger RNA transcriptome.

Commercial-Scale Manufacturing Capabilities

The ability to reliably produce at a high quality and at commercial-scale is a critical success factor in AAV gene therapy. We produce our gene therapies using patent-protected, insect cell-based, baculovirus AAV production systems.

We believe our integrated manufacturing capabilities provide us several potential advantages, including:

- *Know-how.* Since our founding in 1998, we have invested heavily in developing optimized processes and methods to reliably and reproducibly manufacture AAV-based gene therapies at commercial scale. During this time, we have accumulated significant internal experience and knowledge of the underlying production technology and critical quality attributes of our products. These learnings have been essential in developing a modular, third generation production system that can be used to produce all of our gene therapy products.

- *Flexibility.* Controlling cGMP manufacturing allows us to rapidly adapt our production schedule to meet the needs of our business. By controlling our manufacturing, we do not rely on contract manufacturers, nor do we require costly and time-consuming technology transfers to third parties. Our facilities are designed to commercially supply multiple products and are flexibly designed to accommodate expansion and scale up as our needs change.

- *Faster Path to Market.* We believe our manufacturing platform enables us to rapidly produce new products for clinical investigation, minimize time between clinical phases and complete scale-up as product candidates advance into late-stage development and commercialization. For example, in transitioning our hemophilia B program from AMT-060 to AMT-061, we were able to rapidly demonstrate manufacturing comparability and produce clinical material for our ongoing Phase III pivotal study, thereby accelerating our time to market.

- *High Purity.* The baculovirus system eliminates the risk of introducing mammalian cell derived impurities.

- *Scalability.* We have demonstrated our manufacturing process is reproducible at volumes ranging from 2 liters to 500 liters and believe it is possible to achieve higher scale production with our insect-cell, baculovirus system.

- *Low Cost of Goods.* We believe our ability to scale production has the potential to significantly reduce unit costs. Our manufacturing process also utilizes fully disposable components, which enables faster change-over times between batches and lower costs associated with cleaning and sterilization. Additionally, our production system does not require the use of plasmids, which can be a costly raw material.

In October 2018, we presented new data demonstrating the ability to manufacture gene therapies using a 500-liter single-use, stirred tank reactor that has the potential to significantly increase manufacturing capacity and enhance scalability. We produce our AAV-based gene therapies in our state-of-the-art, Lexington-based manufacturing facility using a proprietary baculovirus expression vector system.

Intellectual Property

Introduction

We strive to protect the proprietary technologies that we believe are important to our business, including seeking and maintaining patent protection in the United States, Europe and other countries for novel components of gene therapies, the chemistries and processes for manufacturing these gene therapies, the use of these components in gene therapies, our technology platform, and other inventions and related technology. We also rely on trade secrets, security measures and careful monitoring of our proprietary information to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

We expect that our probability of success will be significantly enhanced by our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business, defend and enforce our patents, maintain our licenses to use intellectual property owned by third parties, preserve the confidentiality of our trade secrets and operate without infringing the valid and enforceable patents and other proprietary rights of third parties. We also rely on know-how, continuing technological innovation and in-licensing opportunities to develop, strengthen and maintain our proprietary position in the field of AAV-based gene therapies.

In some cases, we are dependent on the patented or proprietary technology of third parties to develop and commercialize our products. We must obtain licenses from such third parties on commercially reasonable terms, or our business could be harmed, possibly materially. For example, we license from third parties essential parts of the therapeutic gene cassettes as well as the principal AAV vectors we use and key elements of our manufacturing process. We anticipate that we will require additional licenses in the future.

Because most patent applications throughout the world are confidential for 18 months after the earliest claimed priority date, and since the publication of discoveries in the scientific and patent literature often lags behind actual discoveries, we cannot be certain that we were the first to invent or file applications for the inventions covered by our pending patent applications. Moreover, we may have to participate in post-grant proceedings in the patent offices of the United States or foreign jurisdictions, such as oppositions, reexaminations or interferences, in which the patentability or priority of our inventions are challenged. Such proceedings could result in substantial cost, even if the eventual outcome is favorable to us.

Our intellectual property portfolio consists of owned and in-licensed patents, copyrights, licenses, trademarks, trade secrets and other intellectual property rights.

Patent Portfolio

Our gene therapy programs are protected by patents and patent applications directed to various aspects of our technology. For example, our gene therapy programs are protected by patents and patent applications with composition-of-matter or method of use claims that cover the therapeutic gene, the promoter, the viral vector capsid or other specific parts of these technologies. We also seek protection of core aspects of our manufacturing process, particularly regarding our baculovirus expression system for AAV vectors in insect cells. In addition, we have filed manufacturing patent applications with claims directed to alternative compositions-of-matter and manufacturing processes to seek better protection from competitors.

We file the initial patent applications for our commercially important technologies in both Europe and the United States. For the same technologies, we typically file international patent applications under the PCT within a year. We also may seek, usually on a case-by-case basis, local patent protection in Canada, Australia, Japan, China, India, Israel, South Africa, New Zealand, South Korea and Eurasia, as well as South American jurisdictions such as Brazil and Mexico.

As of December 31, 2019, our intellectual property portfolio included the following rights:

- 28 patent families that we own;
- 7 patent families that we exclusively in-license; and
- 1 patent family that we non-exclusively in-license.

As of December 31, 2019, the geographic breakdown of our owned and exclusively in-licensed patent portfolio was as follows:

- 29 issued U.S. patents;
- 16 granted European patents;
- 9 pending PCT patent applications;
- 12 pending U.S. patent applications;
- 15 pending European patent applications; and
- 56 pending and 52 granted patent applications in other jurisdictions.

The patent portfolios for our manufacturing, administration and technology platform and for our most advanced programs are summarized below.

Our Manufacturing and Technology Platform Patent Portfolios

We own a patent family directed to large scale production of AAV vectors in insect cells relating to first-generation technology that we developed for improvement of manufacturing in insect cells. The family includes issued patents in the United States, Europe, Japan and other jurisdictions and pending applications in the United States and other jurisdictions. The standard 20-year term for patents in this family will expire in 2027.

Furthermore, we own patent families directed to improving AAV vectors and covering AAV vectors manufactured at large scale relating to our second-generation technology. One patent family includes issued patents in the United States, Europe, Japan, Australia, China and other jurisdictions and pending applications in the United States, Europe and other jurisdictions. The standard 20-year term for patents in this family will expire in 2028. Another patent family contains issued patents in the United States and pending patents in the United States and Europe. The standard 20-year term for patents in this family will expire in 2031. We also have a patent family relating to our third-generation technology for improved manufacturing. The patent family contains issued patents in the United States and Europe and other jurisdictions, and has patents pending in Europe and other jurisdictions. The standard 20-year term for patents in this family will expire in 2029.

We own patent families directed to improved AAV manufacturing with regard to capsid protein expression. One such patent family includes issued patents issued in the United States, Europe, and other jurisdictions. The standard 20-year term for patents in this family will expire in 2026. Another such patent family contains pending patent applications in the United States, Europe and other jurisdictions. The standard 20-year term for patents in this family will expire in 2035. A third such patent family includes a PCT application that we filed in 2018 directed to large scale production of parvoviral particles in insect cells. The standard 20-year term for patents in this family, if issued, will expire in 2038.

We own a patent family directed to a proprietary baculovirus removal process that contributes to developing regulatory-compliant AAV vector products. This family contains granted patents in the United States, Europe, Japan, China, and other jurisdictions. The standard 20-year term for patents in this family, if issued, will expire in 2032.

We own a patent family directed to the analysis of manufactured AAV product. This patent family has been granted a patent in Europe and contains patent applications pending in the United States, Europe and other jurisdictions. The standard 20-year term for patents in this family, if issued, will expire in 2035.

We own a patent family directed to AAV5 administration technology through intrathecal delivery routes. This family includes patent applications in the US, Europe and other jurisdictions. The standard 20-year term of patents, if issued, in this family will expire in 2034.

We own a patent family directed to AAV5 administration technology in patients utilizing an immunoadsorption procedure. This family includes a PCT-application and a concomitantly filed US patent application. The standard 20-year term of patents in this family, if issued, will expire in 2037.

We own a patent family directed to AAV5 administration technology in patients combined with an intralipid infusion procedure. This family includes a PCT-application. The standard 20-year term of patents in this family, if issued, will expire in 2038.

We own a patent family directed to the treatment of human patients that may be suspected to have neutralizing antibodies against the AAV5 or other AAV. The family includes a PCT-application. The standard 20-year-term of patents in this family, if issued, will expire in 2038.

We own a patent family directed to AAV gene therapy vectors comprising liver-specific promoters. The standard 20-year term of patents in this family, if issued, will expire in 2039.

The liver-specific promoters owned by us were identified under a co-operation and license agreement with Synpromics, pursuant to which development milestone payments and future single-digit royalties on net sales of a product commercialized in connection with such liver-specific promoters, if any, are payable to Synpromics.

We own patent families directed to gene therapy involving miRNA, including the treatment of neurodegenerative diseases and the monitoring of the effects of such treatment. The standard 20-year term of patents in these families, if issued, will expire in 2039.

Our Patent Portfolio Related to Development Programs

Hemophilia B

We own a patent family, including patents and patent applications, directed to the use of the Padua mutation in hFIX for gene therapy in etranacogene dezaparvovec. A PCT application was filed on September 15, 2009, and patents have been issued in the United States, Europe, and Canada. Further applications are pending in the United States (three issued patents), Europe, and Hong Kong. The issued patents include claims directed to FIX protein with a leucine at the R338 position of the protein sequence, nucleic acid sequences coding for this protein, and therapeutic applications, including gene therapy. The standard 20-year patent term of patents in this family will expire in 2029.

On June 13, 2018, we were granted European Patent 2337849 directed to a polypeptide protein. The opposition period with respect to such patent expired on March 13, 2019, by which time five parties had filed an opposition. On July 25, 2019, we submitted responses to such oppositions with the EPO and oral proceedings with respect to such oppositions will take place in June and July 2020. In addition, on May 15, 2019, a divisional European patent application in the FIX-Padua family, EP 3252157, was refused. In September 2019, we filed a notice of appeal with respect to such refusal. We are also pursuing a European divisional patent application that was filed on May 14, 2019.

On January 4, 2020, a petition seeking *Inter Partes Review* of U.S. Patent No. 9,249,405 (the "'405 Patent") was filed by Pfizer, Inc. The petition seeks to invalidate claims 6 and 9-15 of the '405 Patent. We are in the process of responding to the petition.

Huntington's disease

We own a patent family directed to gene therapy treatment of Huntington's disease within AMT-130. This family includes an issued patent in the United States and pending patent applications in the US, Europe and other jurisdictions. The standard 20-year term of patents in this family will expire in 2035.

In May 2019, we announced the issuance of two new patents covering AMT-130, U.S. Patent 10,174,321 and European Patent EP 3237618 B1. The claims as granted cover the RNA constructs specifically designed to target exon1 and the embedding of these Huntington's disease RNA sequences into the miR451 scaffold, which is exclusively licensed to us from Cold Spring Harbor Laboratory ("CSHL"). The claims also cover certain expression cassettes comprising the RNA constructs and the use of gene therapy vectors including AAV vectors encompassing the described expression cassettes. In addition, this patent family has multiple pending family members, including pending applications in U.S. and Europe.

AMT-130 incorporates the Company's proprietary miQURE™ gene silencing technology platform, which is designed to degrade disease-causing genes, without off-target toxicity, and induce silencing of the entire target organ through secondary exosome-mediated delivery. We have filed additional patent applications related to this technology generally and AMT-130, specifically which will potentially provide further patent protection for our Huntington's disease clinical candidate AMT-130.

Hemophilia A (AMT-180)

We co-own a patent family directed to AAV-based gene therapies for treatment of hemophilia with DRK-Blutspendedienst Baden-Wuerttemberg-Hessen GmbH ("DRK"). Discussion on assignment and license are ongoing. Upon completion, this patent family would be assigned to us. In addition, two patent families currently owned by DRK-Blutspendedienst would also be assigned to us.

SCA3 (AMT-150)

We own a patent family directed to AAV-based gene therapies for treatment of SCA3. The standard 20-year term of patents in this family, if issued, will expire in 2039.

Licenses

We have obtained exclusive or non-exclusive rights from third parties under a range of patents and other technology that we use in our product and development programs, as described below. Our agreements with these third parties generally grant us a license to make, use, sell, offer to sell and import products covered by the licensed patent rights in exchange for our payment of some combination of an upfront amount, annual fees, royalties, a percentage of amounts we receive from our licensees and payments upon the achievement of specified development, regulatory or commercial milestones. Some of the agreements specify the extent of the efforts we must use to develop and commercialize licensed products. The agreements generally expire upon expiration of the last-to-expire valid claim of the licensed patents. Each licensor may terminate the applicable agreement if we materially breach our obligations and fail to cure the breach within a specified cure period.

Technology Used for Multiple Programs

We are exploiting technology from third-party sources described below in more than one of our programs.

National Institutes of Health—AAV production

In 2007, we entered into a non-exclusive license agreement with the NIH, which we amended in 2009 and 2013. The patents under this license cover technology to produce AAV vectors in insect cells. We may only grant sublicenses under this agreement with the NIH's consent, which may not be unreasonably withheld. The standard 20-year term for the underlying patents will expire in 2022.

Payment obligations to the NIH under this license agreement include a low single-digit percentage royalty on the net sales of licensed products by us or on our behalf; development and regulatory milestone payments; and an annual maintenance fee creditable against royalties. We do not have to pay royalties or milestone fees under this agreement if we have to pay royalties or milestone fees under our 2011 agreement with the NIH, described below, for the same product. Under the license agreement, we have agreed to meet benchmarks in our development efforts, including as to development events, clinical trials and marketing approval, within specified timeframes.

The NIH may terminate this agreement in specified circumstances relating to our insolvency or bankruptcy. We may terminate this agreement for any reason, in any territory, subject to a specified notice period.

National Institutes of Health—AAV5

In 2011, we entered into another license agreement with the NIH, superseding an earlier agreement. This agreement was amended in 2016. Under this agreement, the NIH granted us an exclusive, worldwide license to patents relating to AAV5 for use in therapeutic products to be delivered to the brain or liver for treatment of human diseases originating in the brain or liver but excluding arthritis-related diseases, and a non-exclusive, worldwide license to patents relating to AAV5 for all other diseases. We refer to the products licensed under this agreement as AAV5 products. We may grant sublicenses under this agreement only with the NIH's consent, which may not be unreasonably withheld. The standard 20-year term for the underlying patents expired in 2019, but there are U.S. patents still in force of which the latest will expire in 2021.

Payment obligations to the NIH under this license agreement include royalties equal to a low single-digit percentage of net sales of AAV5 products; development and regulatory milestone payments; and an annual maintenance fee creditable against royalties. If an AAV5 product is also covered by our 2007 agreement with the NIH, our obligation to pay royalties on net sales and our obligation to pay milestone fees only apply under this 2011 agreement and not the 2007 agreement. We have agreed to meet benchmarks in our development efforts, including as to development events, clinical trials and marketing approval, within specified timeframes.

The NIH may terminate this agreement in specified circumstances relating to our insolvency or bankruptcy. We may terminate this agreement for any reason, in any country or territory, subject to a specified notice period.

Protein Sciences

In 2016, we revised our existing license contract with Protein Sciences Corporation for the use of its *expresSF+* insect cell line and associated technology for human therapeutic and prophylactic uses (except influenza) to provide us with a royalty free, perpetual right and license to the licensed technology in the field of AAV-based gene therapy.

Technology Used for Specific Development Programs

Hemophilia B

Padua

On April 17, 2017, we entered into an Assignment and License Agreement with Dr. Simioni (the "Padua Assignment"). Pursuant to the Padua Assignment, we acquired from Dr. Simioni all right, title and interest in a patent family covering the variant of the FIX gene, carrying an R338L mutation (FIX-Padua; "Padua IP"). Under the Padua Assignment, we have also licensed certain know-how included in the Padua IP. We will provide Dr. Simioni with an initial license fee and reimbursement of past expenses, as well as payments that may come due upon the achievement of certain milestone events related to the development of the Padua IP and may also include royalties on a percentage of certain revenues. We have granted a license back of the Padua IP to Dr. Simioni for therapeutic or diagnostic use of a modified Factor IX protein (other than in connection with gene therapy) and any application for non-commercial research purposes. We have agreed to indemnify Dr. Simioni for claims arising from our research, development, manufacture or commercialization of any product making use of the Padua IP, subject to certain conditions. The Padua Assignment will remain in effect, unless otherwise terminated pursuant to the terms of the Padua Assignment, until the later of (i) the expiration date of the last of the patents within the Padua IP and (ii) the expiration of the payment obligations under the Padua Assignment.

St. Jude Children's Research Hospital

In 2008, we entered into a license agreement with St. Jude, which we amended in 2012. Under this license agreement, St. Jude has granted us an exclusive license, with a right to sublicense, to patent rights relating to expression of hFIX in gene therapy vectors, to make, import, distribute, use and commercialize products containing hFIX covered by a valid patent claim in the field of gene therapy for treatment or prophylaxis of hemophilia B. In addition, we have a first right of negotiation regarding any patent applications that are filed by St. Jude for any improvements to the patent rights licensed to us. The U.S. patent rights will expire in 2028 and the European patents will expire in 2025.

We have agreed to pay St. Jude a royalty equal to a low single-digit percentage of net sales, if any, by us or our sublicensees of products covered by the licensed patent rights, and a portion of certain amounts we receive from sublicensees ranging from a mid-single digit to a mid-teen double-digit percentage of such amounts. We have also agreed to pay St. Jude one-time milestone fees totaling $6.5 million upon the achievement of specified development and regulatory milestones, and an annual maintenance fee creditable against royalties and milestones in the same year. We have agreed to use commercially reasonable efforts to diligently develop and commercialize products licensed under this agreement.

The agreement will remain in effect until no further payment is due relating to any licensed product under this agreement or either we or St. Jude exercise our rights to terminate it. St. Jude may terminate the agreement in specified circumstances relating to our insolvency. We may terminate the agreement for convenience at any time subject to a specified notice period.

Huntington's disease and SCA3

Cold Spring Harbor Laboratory

In 2015, we entered into a license agreement with CSHL in which CSHL granted to us an exclusive, sublicensable license to develop and commercialize certain of CSHL's patented RNAi-related technology for use in connection with the treatment or prevention of Huntington's disease. The standard 20-year patent term for the licensed patents expires in 2031.

In 2018, we entered into an amendment of the license agreement with CSHL that expanded the license to include the diagnosis, treatment or prevention of all CNS diseases in the Field, including but not limited to Huntington's disease. In addition, under the amended license agreement CSHL granted to us an exclusive license for a three-year term to develop and commercialize therapeutic products for the additional disease classifications in the Field of liver diseases, neuromuscular diseases and cardiovascular diseases. If we meet certain diligence milestones during the initial three-year development term, we may include exclusively additional disease classifications within the additional Fields on similar terms and conditions as the CNS diseases.

Under this license agreement, annual fees, development milestone payments and future single-digit royalties on net sales of a licensed product are payable to CSHL.

Hemophilia A

DRK Blutspendedienst

In 2018, we entered into a research and option agreement with DRK. Under the agreement, we received an option to exclusively license from DRK patents and other intellectual property in the area of FIX variants potentially useful in treating Hemophilia A and Hemophilia B, and the parties agreed to undertake a research plan to allow us to evaluate whether we desire to exercise the option. The option was exercised in 2019. The associated Assignment and License Agreement (ALA) will, if executed, give us a worldwide exclusive, sublicensable license to develop and commercialize under the DRK patents FIX-variants for the treatment of Hemophilia by gene therapy. We are currently finalizing discussion on execution of the ALA. The standard 20-year patent terms for the patents and patent applications that are the subject of this research and option agreement will expire in 2029 and 2034 respectively.

Under the proposed terms of the ALA, we would pay an option fee, milestone payments when certain development milestones are achieved, and a single-digit royalty on net sales of products commercialized under the DRK patents. If we do not meet certain development milestones in either field of hemophilia A or hemophilia B, we could lose our license to the DRK intellectual property in that field. We are currently negotiating with DRK the terms of a proposal to apportion the rights to intellectual property that was created during the term of the research and option agreement, which may affect the final terms of the ALA.

Fabry's disease

Tokyo Metropolitan Institute of Medical Science ("TMIMS")

In 2018, we entered into a license agreement with TMIMS. Under the agreement, TMIMS granted us an exclusive, sublicensable license to develop and commercialize certain TMIM's patented modified alpha-N-acetylgalactoaminidases for the treatment of Fabry by gene therapy. The standard 20-year patent term for the patent families which are the subject of this license agreement expire in 2026 and 2028.

Under the terms of the license agreement we will pay development milestones and a single-digit royalty on net sales of a commercialized product.

Trade Secrets

In addition to patents and licenses, we rely on trade secrets and know-how to develop and maintain our competitive position. For example, significant aspects of the process by which we manufacture our gene therapies are based on unpatented trade secrets and know-how. We seek to protect our proprietary technology and processes and obtain and maintain ownership of certain technologies, in part, through confidentiality agreements and invention assignment agreements with our employees, consultants, scientific advisors, contractors and commercial collaborator. We also seek to preserve the integrity and confidentiality of our data, trade secrets and know-how by maintaining physical security of our premises and physical and electronic security of our information technology systems.

Trademarks

uniQure is a registered trademark in various jurisdictions including the United States and the European Union. In 2018, we applied for trademark protection for the marks miQURE™ and Super9, related to our gene silencing and hemophilia technologies, respectively. We may seek trademark protection for other product candidates and technologies as and when appropriate.

Competition

The biotechnology and pharmaceutical industries, including in the gene therapy field, are characterized by rapidly advancing technologies, intense competition and a strong emphasis on intellectual property. We face substantial competition from many different sources, including large and specialty pharmaceutical and biotechnology companies, academic research institutions and governmental agencies and public and private research institutions.

We are aware of numerous companies focused on developing gene therapies in various indications, including Applied Genetic Technologies Corp., Abeona Therapeutics, Adverum Biotechnologies, Allergan, Ally Therapeutics, Asklepios BioPharmaceutical, Astellas, AVROBIO, Axovant Gene Therapies, Bayer, Biogen, BioMarin, bluebird bio, CRISPR Therapeutics, Editas Medicine, Expression Therapeutics, Freeline Therapeutics, Generation Bio, Genethon, GlaxoSmithKline, Homology Medicines, Intellia Therapeutics, Johnson & Johnson, Krystal Biotech, LogicBio Therapeutics, Lysogene, MeiraGTx, Milo Biotechnology, Mustang Bio, Novartis, Orchard Therapeutics, Oxford Biomedica, Pfizer, REGENXBIO, Renova Therapeutics, Roche, Rocket Pharmaceuticals, Sangamo Therapeutics, Sanofi, Selecta Biosciences, Sarepta Therapeutics, Solid Biosciences, Takeda, Ultragenyx, Vivet Therapeutics, and Voyager Therepeutics, as well as several companies addressing other methods for modifying genes and regulating gene expression. We may also face competition with respect to the treatment of some of the diseases that we are seeking to target with our gene therapies from protein, nucleic acid, antisense, RNAi and other pharmaceuticals under development or commercialized at pharmaceutical and biotechnology companies such as Alnylam Pharmaceuticals, Amgen, Bayer, Biogen, BioMarin, CSL Behring, Dicerna Pharmaceuticals, Ionis Pharmaceuticals, Novartis, Novo Nordisk, Pfizer, Translate Bio, Roche, Sanofi, Sobi, WaVe Life Sciences, and numerous other pharmaceutical and biotechnology firms.

We also compete with existing standards of care, therapies and symptomatic treatments, as well as any new therapies that may become available in the future for the indications we are targeting.

Many of our current or potential competitors, either alone or with their collaborators, have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical, biotechnology and gene therapy industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

The key competitive factors affecting the success of all our programs are likely to be their efficacy, safety, convenience, price and the availability of reimbursement from government and other third-party payers. We also believe that, due to the small size of the patient populations in the orphan indications we target, being first to market will be a significant competitive advantage. We believe that our advantages in vector and manufacturing technology will allow us to reach market in a number of indications ahead of our competitors, and to capture the markets in these indications.

Government Regulation and Reimbursement

Government authorities in the United States, European Union and other countries extensively regulate, among other things, the approval, research, development, preclinical and clinical testing, manufacture (including any manufacturing changes), packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, reimbursement, and import and export of pharmaceutical products, biological products and medical devices. We believe that all of our product candidates will be regulated as biological products, or biologics, and in particular, as gene therapies, and will be subject to such requirements and regulations under U.S. and foreign laws. For other countries outside of the United States and the European Union, marketing approval and pricing and reimbursement requirements vary from country to country. If we fail to comply with applicable regulatory requirements, we may be subject to, among other things, fines, refusal to approve pending applications, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Regulation in the United States

In the United States, the FDA regulates biologics under the Public Health Service Act (“PHSA”) and the Federal Food, Drug, and Cosmetic Act (“FDCA”) and regulations and guidance implementing these laws. Obtaining regulatory approvals and ensuring compliance with applicable statutes and regulatory requirements entails the expenditure of substantial time and financial resources, including payment of user fees for applications to the FDA. All of our current product candidates are subject to regulation by the FDA as biologics. An applicant seeking approval to market and distribute a new biologic in the United States must typically undertake the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA’s current Good Laboratory Practice regulations;
- submission to the FDA of an IND application which allows human clinical trials to begin unless the FDA objects within 30 days; the sponsor of an IND or its legal representative must be based in the United States
- approval by an independent institutional review board (“IRB”) and Institutional Biosafety Committee (“IBC”) before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with the FDA’s or EMA’s good clinical practices (“GCP”) to establish the safety, potency, purity and efficacy of the proposed biological product for each indication;
- preparation and submission to the FDA of a Biologics License Application (“BLA”);
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities at which the product, or components thereof, are produced to assess compliance with cGMP requirements and to assure that the facilities, methods and controls are adequate to preserve the product’s identity, strength, quality and purity, as well as selected clinical trial sites and investigators to determine GCP compliance;

- approval of the BLA by the FDA, in consultation with an FDA advisory committee, if deemed appropriate by the FDA; and

- compliance with any post-approval commitments, including Risk Evaluation and Mitigation Strategies ("REMS"), and post-approval studies required by the FDA.

Human Clinical Studies in the United States under an IND

Clinical trials involve the administration of the investigational biologic to human subjects under the supervision of qualified investigators in accordance with cGCP requirements, which includes requirements for informed consent, study conduct, and IRB review and approval. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of an IND. INDs include preclinical study reports, together with manufacturing information, analytical data, any available clinical data or literature, and proposed clinical study protocols among other things. A clinical trial may not proceed in the United States unless and until an IND becomes effective, which is 30 days after its receipt by the FDA. The FDA may raise concerns or questions related to one or more components of an IND if during its review the FDA determines that study subjects would be exposed to significant risk of illness or injury the trial may be put on clinical hold.

The protocol and informed consent documents must also be approved by an IRB. In the case of gene therapy studies, an IBC at the local level must also review and maintain oversight over the particular study, in addition to the IRB. The FDA, an IRB, and IBC, or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk or that research requirements are not being met. Information about certain clinical trials, including results, must be submitted within specific timeframes for listing on the ClinicalTrials.gov website. Subsequent clinical protocols and amendments must also be submitted to an active IND but are not subject to the 30-day review period imposed on an original IND. There is a risk that once a new protocol or amendment is submitted to an active IND there may be an extended period before the FDA may comment or provide feedback. This may result in a need to modify an ongoing clinical trial to incorporate this feedback or even a clinical hold of the trial. There is also risk that FDA may not provide comments or feedback but may ultimately disagree with the design of the study once a BLA is submitted.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined:

- Phase I: The biological product is initially introduced into healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early understanding of its effectiveness.

- Phase II: The biological product is administered to a limited patient population to further identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.

- Phase III: The biological product is administered to an expanded patient population in adequate and well-controlled clinical trials to generate sufficient data to statistically confirm the potency and safety of the product for approval, to establish the overall risk-benefit profile of the product and to provide adequate information for the labelling of the product.

Additional kinds of data may also help support a BLA or NDA, such as patient experience data and real-world evidence. Real world evidence may also be used to assist in clinical trial design or support an NDA for already approved products. For genetically targeted populations and variant protein targeted products intended to address an unmet medical need in one or more patient subgroups with a serious or life threatening rare disease or condition, the FDA may allow a sponsor to rely upon data and information previously developed by the sponsor or for which the sponsor has a right of reference, that was submitted previously to support an approved application for a product that incorporates or utilizes the same or similar genetically targeted technology or a product that is the same or utilizes the same variant protein targeted drug as the product that is the subject of the application.

In addition, under the Pediatric Research Equity Act, or PREA, a BLA or BLA supplement for a new active ingredient, indication, dosage form, dosage regimen, or route of administration, must contain data that are adequate to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Orphan products are also exempt from the PREA requirements.

The manufacture of investigational drugs and biologics for the conduct of human clinical trials is subject to cGMP requirements. Investigational drugs and biologics and active ingredients and therapeutic substances imported into the United States are also subject to regulation by the FDA. Further, the export of investigational products outside of the United States is subject to regulatory requirements of the receiving country as well as U.S. export requirements under the FDCA.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the product candidate as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, manufacturers must develop methods for testing the identity, strength, quality, potency, and purity of the final product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

FDA Guidance Governing Gene Therapy Products

The FDA has issued various guidance documents regarding gene therapies that outline additional factors that the FDA will consider at each of the above stages of development and which relate to, among other things, the proper preclinical assessment of gene therapies; the chemistry, manufacturing, and control information that should be included in an IND application; the design and analysis of shedding studies for virus or bacteria based gene therapies; the proper design of tests to measure product potency in support of an IND or BLA application; and measures to observe delayed adverse effects in subjects who have been exposed to investigational gene therapies via long-term follow-up.

Compliance with cGMP Requirements

Manufacturers of biologics must comply with applicable cGMP regulations, including quality control and quality assurance and maintenance of records and documentation. Manufacturers and others involved in the manufacture and distribution of such products must also register their establishments with the FDA and certain state agencies. Both domestic and foreign manufacturing establishments must register and provide additional information to the FDA upon their initial participation in the manufacturing process. Establishments may be subject to periodic unannounced inspections by government authorities to ensure compliance with cGMPs and other laws. Discovery of problems may result in a government entity placing restrictions on a product, manufacturer, or holder of an approved BLA, and may extend to requiring withdrawal of the product from the market, among other consequences. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications.

FDA Programs to Expedite Product Development

The FDA has several programs to expedite product development, including fast track designation and breakthrough therapy designation. These are outlined in specific FDA guidance. Under the fast track program, the sponsor of a biologic candidate may request the FDA to designate the product for a specific indication as a fast track product concurrent with or after the filing of the IND for the product candidate. To be eligible for a fast track designation, the FDA must determine that a product candidate is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need. This may be demonstrated by clinical or nonclinical data. If granted, the benefits include greater interactions with the FDA and rolling review of sections of the BLA. In some cases, a fast track product may be eligible for accelerated approval or priority review.

Moreover, under the provisions of the Food and Drug Administration Safety and Innovation Act, enacted in 2012, a sponsor can request designation of a product candidate as a breakthrough therapy. A breakthrough therapy is defined as a product that is intended, alone or in combination with one or more other products, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Products designated as breakthrough therapies are eligible for rolling review, intensive guidance on an efficient development program beginning as early as Phase 1 trials, and a commitment from the FDA to involve senior managers and experienced review staff in a proactive collaborative, cross disciplinary review.

Biologics studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval, which means the FDA may approve the product based upon a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. A biologic candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, will allow the FDA to withdraw the drug or biologic from the market on an expedited basis. All promotional materials for drug or biologic candidates approved under accelerated regulations are subject to prior review by the FDA.

Submission of a BLA

The results of the preclinical and clinical studies, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of a BLA requesting a license to market the product for one or more indications. The submission of a BLA is subject to an application user fee, currently exceeding $2.9 million in fiscal year 2020 (2019: $2.6 million); products with orphan designation are exempt from the BLA filing fee. The sponsor of an approved BLA is also subject to annual program user fees for each, currently exceeding $325,000 in fiscal year 2020 (2019: $310,000). Orphan products may also be exempt from program fees provided that certain criteria are met. These fees are typically increased annually. The FDA has agreed to specified performance goals in the review of BLAs.

Most such applications are meant to be reviewed within ten months from the filing acceptance date (typically 60 days after date of filing), and most applications for priority review products are meant to be reviewed within six months of the filing acceptance date (typically 60 days after date of filing). Priority review designation may be assigned to product candidates that are intended to treat serious conditions and, if approved, would provide significant improvements in the safety or effectiveness of the treatment, diagnosis, or prevention of the serious condition.

The FDA may request additional information rather than accept an application for filing. In this event, the application must be refiled with the additional information. The refiled application is also subject to assessment of content before the FDA accepts it for review. Once the submission is accepted, the FDA begins an in-depth substantive review. The FDA will assign a date for its final decision for the product (the PDUFA action date) but can request an extension to complete review of a product application.

The FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the biological product with specific prescribing information for specific indications. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the BLA, the FDA will issue an approval letter. Many drug applications receive complete response letters from the FDA during their first cycle of FDA review.

If the FDA approves a product, it may limit the approved indications for use of the product; require that contraindications, warnings or precautions be included in the product labeling, including boxed warnings; require that post-approval studies, including Phase IV clinical trials, be conducted to further assess a biologic's efficacy and safety after approval; or require testing and surveillance programs to monitor the product after commercialization. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. The FDA may also not approve label statements that are necessary for successful commercialization and marketing.

In addition to the above conditions of approval, the FDA also may require submission of a REMS to ensure that the benefits of the product candidate outweigh the risks. The REMS plan could include medication guides, physician communication plans, and elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools. An assessment of the REMS must also be conducted at set intervals. Following product approval, a REMS may also be required by the FDA if new safety information is discovered and the FDA determines that a REMS is necessary to ensure that the benefits of the product outweigh the risks. In guidance, FDA stated that during the review of a BLA for a gene therapy, it will assess whether a REMS is necessary. Several gene therapy products that have been approved by FDA have required substantial REMS, which included requirements for dispensing hospital and clinic certification, training, adverse event reporting, documentation, and audits and monitoring conducted by the sponsor, among other conditions. REMS, such as these, can be expensive and burdensome to implement, and burdensome for hospitals, clinics, and health care providers to comply with.

Following approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and the FDA review and approval. The product may also be subject to official lot release, meaning that the manufacturer is required to perform certain tests on each lot of the product. The results of such tests, along with samples, are submitted to FDA for approval before the lot may be released for distribution. Other post-approval requirements include reporting of cGMP deviations that could affect the identity, potency, purity and overall safety of a distributed product, reporting of adverse effects, reporting new information regarding safety and efficacy, maintaining adequate record-keeping, and complying with electronic record and signature requirements.

Biosimilars and Exclusivity

The Biologics Price Competition and Innovation Act of 2009 (“BPCIA”) which amended the PHSA authorized the FDA to approve biosimilars under Section 351(k) of the PHSA. Under the BCPIA, a manufacturer may submit an application for licensure of a biologic product that is biosimilar to or interchangeable with a previously approved biological product or reference product. In order for the FDA to approve a biosimilar product, it must find that it is highly similar to the reference product notwithstanding minor differences in clinically inactive components and that there are no clinically meaningful differences between the reference product and proposed biosimilar product in safety, purity or potency. A finding of interchangeability requires that a product is determined to be biosimilar to the reference product, and that the product can be expected to produce the same clinical results as the reference product and, for products administered multiple times, the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. An application for a biosimilar product may not be submitted to the FDA until four years following approval of the reference product, and it may not be approved until 12 years thereafter. These exclusivity provisions only apply to biosimilar companies and not companies that rely on their own data and file a full BLA. Moreover, this exclusivity is not without limitation. Certain changes and supplements to an approved BLA, and subsequent applications filed by the same sponsor, manufacturer, licensor, predecessor in interest, or other related entity do not qualify for the twelve-year exclusivity period. Further, the twelve-year exclusivity market period in the U.S. for biologics has been controversial and may be shortened in the future.

Orphan Drug Exclusivity

Under the Orphan Drug Act of 1983, the FDA may designate a biological product as an orphan drug if it is intended to treat a rare disease or condition that affects fewer than 200,000 individuals in the United States, or more in cases in which there is no reasonable expectation that the cost of developing and making a biological product available in the United States for treatment of the disease or condition will be recovered from sales of the product. If a product with orphan designation receives the first FDA approval, it will be granted seven years of marketing exclusivity, which means that the FDA may not approve any other applications for the same product for the same indication for seven years, unless clinical superiority is demonstrated in a head-to-head trial. Competitors may receive approval of different products for the indication for which the orphan product has exclusivity and may obtain approval for the same product but for a different indication. Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process. The FDA has granted orphan drug designation to AMT-130 for the treatment of Huntington’s disease as well as for etranacogene dezaparvovec; meaning that they would receive orphan drug exclusivity if they are the first products approved for their respective indications.

Pediatric Exclusivity

Under the Pediatric Research Equity Act of 2003, pediatric exclusivity provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity in the US, including orphan exclusivity and exclusivity against biosimilars. This six-month exclusivity may be granted if the FDA issues a written request to the sponsor for the pediatric study, the sponsor submits a final study report after receipt of the written request and meets the terms and timelines in the FDA's written request.

Regenerative Advanced Therapy Designation

The 21st Century Cures Act became law in December 2016 and created a new program under Section 3033 in which the FDA has authority to designate a product as a regenerative medicine advanced therapy ("RMAT"). A drug is eligible for a RMAT designation if: 1) it is a regenerative medicine therapy which is a cell therapy, therapeutic tissue engineering product, human cell and tissue product, or any combination product using such therapies or products, except those products already regulated under Section 361 of the PHSA; 2) the drug is intended to treat, modify, reverse, or cure a serious or life-threatening disease or condition; and 3) preliminary clinical evidence indicates that the drug has the potential to address unmet medical needs for such disease or condition. A RMAT must be made with the submission of an IND or as an amendment to an existing IND. FDA will determine if a product is eligible for RMAT designation within 60 days of submission. Advantages of the RMAT designation include all the benefits of the fast track and breakthrough therapy designation programs, including early interactions with the FDA. These early interactions may be used to discuss potential surrogate or intermediate endpoints to support accelerated approval. In 2017 FDA stated in draft guidance that human gene therapies, including genetically modified cells, that lead to a sustained effect on cells or tissues, may meet the definition of a regenerative therapy.

FDA Regulation of Companion Diagnostics

We may seek to develop companion diagnostics for use in identifying patients that we believe will respond to our gene therapies. FDA officials have issued draft guidance to address issues critical to developing *in vitro* companion diagnostics with therapeutics, such as establishing clinical validity, study design, the appropriate patient population and when the FDA will require that the companion diagnostic and the drug be approved simultaneously. The guidance issued in August 2014 states that if safe and effective use of a therapeutic product depends on an *in vitro* diagnostic device, then the FDA generally will require approval or clearance of the diagnostic device by the Center for Devices and Radiological Health at the same time that the FDA approves the therapeutic product.

Anti-Kickback Provisions and Requirements

The federal anti-kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce or in return for purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. Violations of the anti-kickback statute are punishable by imprisonment, criminal fines, civil monetary penalties and exclusion from participation in federal healthcare programs. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor.

Federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to have a false claim paid. Pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly inflating drug prices they report to pricing services, which in turn were used by the government to set Medicare and Medicaid reimbursement rates, and for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. In addition, certain marketing practices, including off-label promotion, have also been alleged by government agencies to violate false claims laws. The majority of states also have statutes or regulations similar to the federal anti-kickback law and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payer.

U.S. Foreign Corrupt Practices Act

The U.S. Foreign Corrupt Practices Act, to which we are subject, prohibits corporations and individuals from engaging in certain activities to obtain or retain business or to influence a person working in an official capacity. It is illegal to pay, offer to pay or authorize the payment of anything of value to any foreign government official, government staff member, political party or political candidate in an attempt to obtain or retain business or to otherwise influence a person working in an official capacity.

Coverage, Pricing and Reimbursement

The containment of healthcare costs has become a priority of federal, state and foreign governments, and the prices of drugs have been a focus in this effort. Third-party payers and independent non-profit healthcare research organizations such as the Institute for Clinical and Economic Review are also increasingly challenging the prices charged for medical products and services and examining the medical necessity, budget-impact and cost-effectiveness of medical products and services, in addition to their safety and efficacy. If these third party payers do not consider a product to be cost-effective compared to other available therapies and/or the standard of care, they may not cover the product after approval as a benefit under their plans or, if they do, measures including prior authorization and step-throughs could be required and/or the level of payment may not be sufficient to allow a company to sell its products at a profit. The U.S. federal and state governments and foreign governments have shown significant interest in implementing cost containment programs to limit the growth of government-paid health care costs, including price controls, restrictions on reimbursement and requirements for substitution of generic products for branded prescription drugs. Adoption of such controls and measures and tightening of restrictive policies in jurisdictions with existing controls and measures, could limit payments for pharmaceuticals.

As a result, the marketability of any product which receives regulatory approval for commercial sale may suffer if the government and third-party payers choose to provide low coverage and reimbursement. In addition, an increasing emphasis on managed care in the United States has increased and will continue to increase the pressure on drug pricing. Coverage policies, third party reimbursement rates and drug pricing regulation may change at any time. In particular, the Patient Protection and Affordable Care Act contains provisions that may reduce the profitability of drug products, including, for example, increased rebates for drugs sold to Medicaid programs, extension of Medicaid rebates to Medicaid managed care plans, mandatory discounts for certain Medicare Part D beneficiaries and annual fees based on pharmaceutical companies' share of sales to federal health care programs. Even if favorable coverage and reimbursement status is attained for one or more products that receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Regulation in the European Union

Product development, the regulatory approval process and safety monitoring of medicinal products and their manufacturers in the European Union proceed broadly in the same way as they do in the United States. Therefore, many of the issues discussed above apply similarly in the context of the European Union. In addition, drugs are subject to the extensive price and reimbursement regulations of the various EU member states. The Clinical Trials Directive 2001/20/EC, as amended (and to be replaced by the Clinical Trial Regulation EU 536/2014), provides a system for the approval of clinical trials in the European Union via implementation through national legislation of the member states. Under this system, approval must be obtained from the competent national authority of an EU member state in which the clinical trial is to be conducted. Furthermore, a clinical trial may only be started after a competent ethics committee has issued a favorable opinion on the clinical trial application ("CTA"), which must be supported by an investigational medicinal product dossier with supporting information prescribed by the Clinical Trials Directive and corresponding national laws of the member states and further detailed in applicable guidance documents. The sponsor of a clinical trial, or its legal representative, must be based in the European Economic Area. European regulators and ethics committees also require the submission of adverse event reports during a study and a copy of the final study report.

Marketing approval

Marketing approvals under the European Union regulatory system may be obtained through a centralized or decentralized procedure. The centralized procedure results in the grant of a single marketing authorization that is valid for all —currently 28—EU member states. Pursuant to Regulation (EC) No 726/2004, as amended, the centralized procedure is mandatory for drugs developed by means of specified biotechnological processes, and advanced therapy medicinal products as defined in Regulation (EC) No 1394/2007, as amended. Drugs for human use containing a new active substance for which the therapeutic indication is the treatment of specified diseases, including but not limited to acquired immune deficiency syndrome, neurodegenerative disorders, auto-immune diseases and other immune dysfunctions, as well as drugs designated as orphan drugs pursuant to Regulation (EC) No 141/2000, as amended, also fall within the mandatory scope of the centralized procedure. Because of our focus on gene therapies, which fall within the category of advanced therapy medicinal products ("ATMPs") and orphan indications, our products and product candidates are expected to qualify for the centralized procedure.

In the marketing authorization application ("MAA") the applicant has to properly and sufficiently demonstrate the quality, safety and efficacy of the drug. Guidance on the factors that the EMA will consider in relation to the development and evaluation of ATMPs have been issued and include, among other things, the preclinical studies required to characterize ATMPs; the manufacturing and control information that should be submitted in a MAA; and post-approval measures required to monitor patients and evaluate the long term efficacy and potential adverse reactions of ATMPs. Although these guidelines are not legally binding, we believe that our compliance with them is likely necessary to gain and maintain approval for any of our product candidates. The maximum timeframe for the evaluation of an MAA under the centralized procedure is 210 days after receipt of a valid application subject to clock stops during which the applicant deals with EMA questions.

Market access can be expedited through the grant of conditional authorization for a medicine that may fulfil unmet needs which may be granted provided that the benefit-risk balance of the product is positive. The benefit-risk balance is likely to be positive if the applicant is able to provide comprehensive data and the benefit to public health of the medicinal product's immediate availability on the market outweighs the risks due to need for further data. Such authorizations are valid for one year and can be renewed annually. The holder will be required to complete specific obligations (ongoing or new studies, and in some cases additional activities) with a view to providing comprehensive data confirming that the benefit-risk balance is positive. Once comprehensive data on the product have been obtained, the marketing authorization may be converted into a standard marketing authorization (not subject to specific obligations). Initially, this is valid for 5 years, but can be renewed for unlimited validity. Applicants for conditional authorizations can benefit from early dialogue with EMA through scientific advice or protocol assistance and discuss their development plan well in advance of the submission of a marketing-authorization application. Other stakeholders (e.g. health technology assessment bodies) can be included.

In addition, the priority medicines (PRIME) scheme for medicines that may offer a major therapeutic advantage over existing treatments, or benefit patients without treatment options based on early clinical data, is intended to support the development of medicines that target an unmet medical need. This voluntary scheme is based on enhanced interaction and early dialogue with developers of promising medicines, to optimize development plans and speed up evaluation so these medicines can reach patients earlier. Early dialogue and scientific advice also ensure that patients only participate in trials designed to provide the data necessary for an application, making the best use of limited resources.

The European Union also provides for a system of regulatory data and market exclusivity. According to Article 14(11) of Regulation (EC) No 726/2004, as amended, and Article 10(1) of Directive 2001/83/EC, as amended, upon receiving marketing authorization, new chemical entities approved on the basis of complete independent data package benefit from eight years of data exclusivity and an additional two years of market exclusivity. Data exclusivity prevents regulatory authorities in the European Union from referencing the innovator's data to assess a generic (abbreviated) application during the eight-year period. During the additional two-year period of market exclusivity, a generic marketing authorization can be submitted, and the innovator's data may be referenced, but no generic medicinal product can be marketed until the expiration of the market exclusivity. The overall ten-year period will be extended to a maximum of eleven years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies. Even if a compound is considered to be a new chemical entity and the innovator is able to gain the period of data exclusivity, another company nevertheless could also market another version of the drug if such company obtained marketing authorization based on an

MAA with a complete independent data package of pharmaceutical test, preclinical tests and clinical trials. The EMA has also issued guidelines for a comprehensive comparability exercise for biosimilars, and for specific classes of biological products.

Under Regulation (EC) No 141/2000 article 3 as amended (Orphan Drug Regulation, ("ODR")) a product can benefit from orphan drug status if it is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition affecting not more than five in 10,000 people in the European Community (EC) when the application is made. The principle benefit of such status is 10 years' market exclusivity once they are approved preventing the subsequent approval of similar medicines with similar indications.

Additional rules apply to medicinal products for pediatric use under Regulation (EC) No 1901/2006, as amended. Potential incentives include a six-month extension of any supplementary protection certificate granted pursuant to Regulation (EC) No 469/2009, however not in cases in which the relevant product is designated as an orphan medicinal product pursuant to the ODR. Instead, medicinal products designated as orphan medicinal product may enjoy an extension of the ten-year market exclusivity period granted under Regulation (EC) No 141/2000, as amended, to twelve years subject to the conditions applicable to orphan drugs.

Manufacturing and manufacturers' license

Pursuant to Commission Directive 2003/94/EC as transposed into the national laws of the member states, the manufacturing of investigational medicinal products and approved drugs is subject to a separate manufacturer's license and must be conducted in strict compliance with cGMP requirements, which mandate the methods, facilities, and controls used in manufacturing, processing, and packing of drugs to assure their safety and identity. Manufacturers must have at least one qualified person permanently and continuously at their disposal. The qualified person is ultimately responsible for certifying that each batch of finished product released onto the market has been manufactured in accordance with cGMP and the specifications set out in the marketing authorization or investigational medicinal product dossier. cGMP requirements are enforced through mandatory registration of facilities and inspections of those facilities. Failure to comply with these requirements could interrupt supply and result in delays, unanticipated costs and lost revenues, and subject the applicant to potential legal or regulatory action, including but not limited to warning letters, suspension of manufacturing, seizure of product, injunctive action or possible civil and criminal penalties.

Advertising

In the European Union, the promotion of prescription medicines is subject to intense regulation and control, including a prohibition on direct-to-consumer advertising. All medicines advertising must be consistent with the product's approved summary of products characteristics, factual, accurate, balanced and not misleading. Advertising of medicines pre-approval or off-label is prohibited. Some jurisdictions require that all promotional materials for prescription medicines be subjected to either prior internal or regulatory review & approval.

Other Regulatory Requirements

A holder of a marketing authorization for a medicinal product is legally obliged to fulfill a number of obligations by virtue of its status as a marketing authorization holder ("MAH"). The MAH can delegate the performance of related tasks to third parties, such as distributors or marketing collaborators, provided that this delegation is appropriately documented and the MAH maintains legal responsibility and liability.

The obligations of an MAH include:

- *Manufacturing and Batch Release.* MAHs should guarantee that all manufacturing operations comply with relevant laws and regulations, applicable good manufacturing practices, with the product specifications and manufacturing conditions set out in the marketing authorization and that each batch of product is subject to appropriate release formalities.

- *Pharmacovigilance.* MAHs are obliged to establish and maintain a pharmacovigilance system, including a qualified person responsible for oversight, to submit safety reports to the regulators and comply with the good pharmacovigilance practice guidelines adopted by the EMA.

- *Advertising and Promotion.* MAHs remain responsible for all advertising and promotion of their products, including promotional activities by other companies or individuals on their behalf and in some cases, must conduct internal or regulatory pre-approval of promotional materials.

- *Medical Affairs/Scientific Service.* MAHs are required to disseminate scientific and medical information on their medicinal products to healthcare professionals, regulators and patients.

- *Legal Representation and Distributor Issues.* MAHs are responsible for regulatory actions or inactions of their distributors and agents.

- *Preparation, Filing and Maintenance of the Application and Subsequent Marketing Authorization.* MAHs must maintain appropriate records, comply with the marketing authorization's terms and conditions, fulfill reporting obligations to regulators, submit renewal applications and pay all appropriate fees to the authorities.

We may hold any future marketing authorizations granted for our product candidates in our own name or appoint an affiliate or a collaborator to hold marketing authorizations on our behalf. Any failure by an MAH to comply with these obligations may result in regulatory action against an MAH and ultimately threaten our ability to commercialize our products.

Reimbursement

In the European Union, the pricing and reimbursement mechanisms by private and public health insurers vary largely by country and even within countries. In respect of the public systems, reimbursement for standard drugs is determined by guidelines established by the legislature or responsible national authority. Some jurisdictions operate positive and negative list systems under which products may only be marketed once a reimbursement price has been agreed. Other member states allow companies to determine the prices for their medicines but monitor and control company profits and may limit or restrict reimbursement. The downward pressure on healthcare costs in general, particularly prescription drugs, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products and some of EU countries require the completion of studies that compare the cost-effectiveness of a particular product candidate to currently available therapies in order to obtain reimbursement or pricing approval. Special pricing and reimbursement rules may apply to orphan drugs.

Inclusion of orphan drugs in reimbursement systems tend to focus on the medical usefulness, need, quality and economic benefits to patients and the healthcare system as for any drug. Acceptance of any medicinal product for reimbursement may come with cost, use and often volume restrictions, which again can vary by country. In addition, results-based rules or agreements on reimbursement may apply. Recently, a process has been formalized that allows sponsors to receive parallel advice from EMA and HTA's for pivotal clinical studies designed to support marketing approval. This process was followed for etranacogene dezaparvovec.

Orphan Drug Regulation

We have been granted orphan drug exclusivity for etranacogene dezaparvovec for the treatment of hemophilia B as well as for AMT-130 for the treatment of Huntington's disease subject to the conditions applicable to orphan drug exclusivity in the European Union. Regulation (EC) No 141/2000, as amended, states that a drug will be designated as an orphan drug if its sponsor can establish:

- that it is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition affecting not more than five in ten thousand persons in the Community when the application is made, or that it is intended for the diagnosis, prevention or treatment of a life-threatening, seriously debilitating or serious and chronic condition in the European Union and that without incentives it is unlikely that the marketing of the drug in the European Union would generate sufficient return to justify the necessary investment; and

- that there exists no satisfactory method of diagnosis, prevention or treatment of the condition in question that has been authorized in the European Union or, if such method exists, that the drug will be of significant benefit to those affected by that condition.

Regulation (EC) No 847/2000 sets out further provisions for implementation of the criteria for designation of a drug as an orphan drug. An application for the designation of a drug as an orphan drug must be submitted at any stage of development of the drug before filing of a marketing authorization application.

If an EU-wide community marketing authorization in respect of an orphan drug is granted pursuant to Regulation (EC) No 726/2004, as amended, the European Union and the member states will not, for a period of 10 years, accept another application for a marketing authorization, or grant a marketing authorization or accept an application to extend an existing marketing authorization, for the same therapeutic indication, in respect of a similar drug.

This period may however be reduced to six years if, at the end of the fifth year, it is established, in respect of the drug concerned, that the criteria for orphan drug designation are no longer met, in other words, when it is shown on the basis of available evidence that the product is sufficiently profitable not to justify maintenance of market exclusivity. Notwithstanding the foregoing, a marketing authorization may be granted, for the same therapeutic indication, to a similar drug if:

- the holder of the marketing authorization for the original orphan drug has given its consent to the second applicant;
- the holder of the marketing authorization for the original orphan drug is unable to supply sufficient quantities of the drug; or
- the second applicant can establish in the application that the second drug, although similar to the orphan drug already authorized, is safer, more effective or otherwise clinically superior.

Regulation (EC) No 847/2000 lays down definitions of the concepts similar drug and clinical superiority, which concepts have been expanded upon in subsequent Commission guidance. Other incentives available to orphan drugs in the European Union include financial incentives such as a reduction of fees or fee waivers and protocol assistance. Orphan drug designation does not shorten the duration of the regulatory review and approval process.

Employees

As of December 31, 2019, we had a total of 248 employees, 116 of whom are based in Amsterdam, The Netherlands, and 132 in Lexington, Massachusetts. As of December 31, 2019, 48 of our employees had an M.D. or Ph.D. degree, or the foreign equivalent. During 2017, we established a works council in the Netherlands. None of our employees are subject to collective bargaining or other labor organizations. We believe that we have good relations with all of our employees and with the works council in the Netherlands.

Corporate Information

uniQure B.V. (the “Company”) was incorporated on January 9, 2012 as a private company with limited liability (besloten vennootschap met beperkte aansprakelijkheid) under the laws of the Netherlands. We are a leader in the field of gene therapy and seek to deliver to patients suffering from rare and other devastating diseases single treatments with potentially curative results. Our business was founded in 1998 and was initially operated through our predecessor company, Amsterdam Molecular Therapeutics Holding N.V (“AMT”). In 2012, AMT undertook a corporate reorganization, pursuant to which uniQure B.V. acquired the entire business and assets of AMT and completed a share-for-share exchange with the shareholders of AMT. Effective February 10, 2014, in connection with the initial public offering, the Company converted into a public company with limited liability (naamloze vennootschap) and changed its legal name from uniQure B.V. to uniQure N.V.

The Company is registered in the trade register of the Dutch Chamber of Commerce (Kamer van Koophandel) under number 54385229. The Company’s headquarters are in Amsterdam, the Netherlands, and its registered office is located at Paasheuvelweg 25a, Amsterdam 1105 BP, the Netherlands and its telephone number is +31 20 240 6000.

From our initial public offering until December 31, 2018 we were an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 ("JOBS Act"). On the last business day of our second quarter in fiscal year 2018 the aggregate worldwide market value of ordinary shares held by our non-affiliate shareholders exceeded $700 million. As a result, as of December 31, 2018, we were considered a large accelerated filer and as a consequence lost our status as an emerging growth company. We are therefore no longer permitted to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are emerging growth companies.

Our website address is www.uniqure.com. We make available free of charge through our Internet website our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, and any amendments to these reports, as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the SEC. Also available through our website's "Investors & Newsroom: Corporate Governance" page are charters for the Audit, Compensation and Nominations and Corporate Governance committees of our board of directors and our Code of Business Conduct and Ethics. We are not including the information on our website as a part of, nor incorporating it by reference into, this report. Additionally, the SEC maintains a website that contains annual, quarterly, and current reports, proxy statements, and other information that issuers (including us) file electronically with the SEC. The SEC's website address is http://www.sec.gov. Unless the context indicates otherwise, all references to "uniQure" or the "Company" refer to uniQure and its consolidated subsidiaries.

Item 1A. Risk Factors

An investment in our ordinary shares involves a high degree of risk. You should carefully consider the following information about these risks, together with the other information appearing elsewhere in this Annual Report on Form 10-K, including our financial statements and related notes thereto, before deciding to invest in our ordinary shares. We operate in a dynamic and rapidly changing industry that involves numerous risks and uncertainties. The risks and uncertainties described below are not the only ones we face. Other risks and uncertainties, including those that we do not currently consider material, may impair our business. If any of the risks discussed below actually occur, our business, financial condition, operating results or cash flows could be materially adversely affected. This could cause the value of our securities to decline, and you may lose all or part of your investment.

Risks Related to the Development of Our Product Candidates

None of our product candidates have been approved for commercial sale and they might never receive regulatory approval or become commercially viable. We have never generated any significant revenue from product sales and may never be profitable.

All of our product candidates are in research or development. We have not generated any significant revenues from the sale of products and do not expect to generate any revenue before 2022. Our lead product candidates, etranacogene dezaparvovec (also known as AMT-061) and AMT-130, and any of our other potential product candidates will require extensive preclinical and/or clinical testing and regulatory approval prior to commercial use. Our research and development efforts may not be successful. Even if our clinical development efforts result in positive data, our product candidates may not receive regulatory approval or be successfully introduced and marketed at prices that would permit us to operate profitably.

We may encounter substantial delays in and impediments to the progress of our clinical trials or fail to demonstrate the safety and efficacy of our product candidates.

Clinical and non-clinical development is expensive, time-consuming and uncertain as to outcome. Our product candidates are in different stages of clinical or preclinical development, and there is a significant risk of failure or delay in each of these programs. We cannot guarantee that any preclinical tests or clinical trials will be completed as planned or completed on schedule, if at all. A failure of one or more preclinical tests or clinical trials can occur at any stage of testing. Events that may prevent successful or timely completion of clinical development include, but are not limited to:

- delays in reaching a consensus with regulatory agencies on study design;
- delays in reaching agreement on acceptable terms with prospective clinical research organizations (“CROs”) and clinical trial sites;
- delays in receiving regulatory authorization to conduct the clinical trials or a regulatory authority decision that the clinical trial should not proceed;
- delays in obtaining required IRB approval at each clinical trial site;
- imposition of a clinical hold by regulatory agencies after an inspection of our clinical trial operations or trial sites;
- failure by CROs, other third parties or us to adhere to clinical trial requirements or otherwise properly manage the clinical trial process, including meeting applicable timelines, properly documenting case files, including the retention of proper case files, and properly monitoring and auditing clinical sites;
- failure of sites or clinical investigators to perform in accordance with Good Clinical Practice or applicable regulatory guidelines in other countries;
- difficulty or delays in patient recruiting into clinical trials;
- the impact of the potential COVID-19 pandemic on the healthcare system or any clinical trial sites;
- delays or deviations in the testing, validation, manufacturing and delivery of our product candidates to the clinical sites;
- delays in having patients’ complete participation in a study or return for post-treatment follow-up;
- clinical trial sites or patients dropping out of a study;
- occurrence of serious adverse events associated with a product candidate that are viewed to outweigh its potential benefits; or
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols, undertaking additional new tests or analyses or submitting new types or amounts of clinical data.

Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must conduct extensive clinical trials to demonstrate the safety and efficacy of the product candidates in humans. Such trials and regulatory review and approval take many years. It is impossible to predict when or if any of our clinical trials will demonstrate that product candidates are effective or safe in humans.

If the results of our clinical trials are inconclusive, or fail to meet the level of statistical significance required for approval or if there are safety concerns or adverse events associated with our product candidates, we may:

- be delayed in or altogether prevented from obtaining marketing approval for our product candidates;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to changes with the way the product is administered;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw their approval of the product or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy;
- be subject to the addition of labeling statements, such as warnings or contraindications;
- be sued; or
- experience damage to our reputation.

Because of the nature of the gene therapies we are developing, regulators may also require us to demonstrate long-term gene expression, clinical efficacy and safety, which may require additional or longer clinical trials, and which may not be able to be demonstrated to the regulatory authorities' standards.

Our ability to recruit patients for our trials is often reliant on third parties, such as clinical trial sites. Clinical trial sites may not have the adequate infrastructure established to handle gene therapy products or may have difficulty finding eligible patients to enroll into a trial.

In addition, we or any collaborators we may have may not be able to locate and enroll enough eligible patients to participate in these trials as required by the FDA, the EMA or similar regulatory authorities outside the United States and the European Union. This may result in our failure to initiate or continue clinical trials for our product candidates or may cause us to abandon one or more clinical trials altogether. Because our programs are focused on the treatment of patients with rare or orphan or ultra-orphan diseases, our ability to enroll eligible patients in these trials may be limited or slower than we anticipate considering the small patient populations involved and the specific age range required for treatment eligibility in some indications. In addition, our potential competitors, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies and public and private research institutions, may seek to develop competing therapies, which would further limit the small patient pool available for our studies. Also, patients may be reluctant to enroll in gene therapy trial where there are other therapeutic alternatives available or that may become available, which may be for various reasons including uncertainty about the safety or effectiveness of the therapeutic and the possibility that treatment with the therapeutic would preclude future gene therapy treatments.

Any inability to successfully initiate or complete preclinical and clinical development could result in additional costs to us or impair our ability to receive marketing approval, to generate revenues from product sales or obtain regulatory and commercialization milestones and royalties. In addition, if we make manufacturing or formulation changes to our product candidates, including changes in the vector or manufacturing process used, we may need to conduct additional studies to bridge our modified product candidates to earlier versions. Clinical trial delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do, which could impair our ability to successfully commercialize our product candidates and may materially harm our business, financial conditions and results of operations.

Our progress in early-stage clinical trials may not be indicative of long-term efficacy in late-stage clinical trials, and our progress in trials for one product candidate may not be indicative of progress in trials for other product candidates.

Study designs and results from previous studies are not necessarily predictive of our future clinical study designs or results, and initial results may not be confirmed upon full analysis of the complete study data. Our product candidates may fail to show the required level of safety and efficacy in later stages of clinical development despite having successfully advanced through initial clinical studies. In 2017, we announced our plans to advance etranacogene dezaparvovec, which includes an AAV5 vector carrying the FIX-Padua transgene, into a pivotal study. While we believe etranacogene

dezaparvovec and AMT-060, our product candidate that was previously studied in a Phase I/II study, have been demonstrated to be materially comparable in nonclinical studies and manufacturing quality assessments, it is possible that ongoing or future clinical studies of etranacogene dezaparvovec may show unexpected differences from AMT-060. Should these differences have an unfavorable impact on clinical outcomes, they may adversely impact our ability to achieve regulatory approval or market acceptance of etranacogene dezaparvovec.

In our Phase I/II clinical study of AMT-060, we screened patients for pre-existing anti-AAV5 antibodies to determine their eligibility for the trial. Three of the ten patients screened for the study tested positive for anti-AAV5 antibodies on reanalysis using a more sensitive antibody assay. Since we did not observe any ill-effects or correlation between the level of anti-AAV5 antibodies and clinical outcomes, patients who have anti-AAV5 antibodies are permitted to enroll in our planned pivotal study of etranacogene dezaparvovec. Since we only have been able to test a limited number of patients and have limited clinical and pre-clinical data, it is possible that ongoing or future clinical studies may not confirm these results, and if so, negatively impact the outcome of our study.

In advance of treating patients in the pivotal study of etranacogene dezaparvovec, we conducted a short study to confirm the dose expected to be used in the pivotal trial. The dose-confirmation study enrolled three patients, who were administered a single dose of $2x10^{13}$ gc/kg. We have relied on the short-term data from this study, including FIX activity and safety outcomes during the weeks following administration of etranacogene dezaparvovec, to confirm the dose to be used in the pivotal study. Following the results of this study, our Data Monitoring Committee confirmed the dose of $2x10^{13}$ gc/kg for administration in the pivotal study. Given the limited number of patients and short follow-up period, data from this study may differ materially from the future results of our planned pivotal study of etranacogene dezaparvovec.

A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later-stage clinical trials even after achieving promising results in early-stage clinical trials. If a larger population of patients does not experience positive results during clinical trials, if these results are not reproducible or if our products show diminishing activity over time, our product candidates may not receive approval from the FDA or EMA. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. In addition, we may encounter regulatory delays or rejections because of many factors, including changes in regulatory policy during the period of product development. Failure to confirm favorable results from earlier trials by demonstrating the safety and effectiveness of our products in later-stage clinical trials with larger patient populations could have a material adverse effect on our business, financial condition and results of operations.

Fast track product, breakthrough therapy, priority review, or Regenerative Medicine Advanced Therapy ("RMAT") designation by the FDA, or access to the PRIME scheme by the EMA, for our product candidates may not lead to faster development or regulatory review or approval process, and it does not increase the likelihood that our product candidates will receive marketing approval.

We have obtained and may in the future seek one or more of fast track designation, breakthrough therapy designation, RMAT designation, PRIME scheme access or priority review designation for our product candidates. A fast track product designation is designed to facilitate the clinical development and expedite the review of drugs intended to treat a serious or life-threatening condition and which demonstrate the potential to address an unmet medical need. A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, where preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. A RMAT designation is designed to accelerate approval for regenerative advanced therapies. Priority review designation is intended to speed the FDA marketing application review timeframe for drugs that treat a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. PRIME is a scheme provided by the EMA, similar to the FDA's breakthrough therapy designation, to enhance support for the development of medicines that target an unmet medical need.

For drugs and biologics that have been designated as fast track products or breakthrough therapies, or granted access to the PRIME scheme, interaction and communication between the regulatory agency and the sponsor of the trial can help to identify the most efficient path for clinical development. Sponsors of drugs with fast track products or breakthrough therapies may also be able to submit marketing applications on a rolling basis, meaning that the FDA may review portions of a marketing application before the sponsor submits the complete application to the FDA, if the sponsor pays the user fee upon submission of the first portion of the marketing application. For products that receive a priority review designation, the FDA's marketing application review goal is shortened to six months, as opposed to ten to twelve months under standard review. RMAT designations may also expedite product candidate development and approval.

Designation as a fast track product, breakthrough therapy, RMAT, PRIME, or priority review product is within the discretion of the regulatory agency. Accordingly, even if we believe one of our product candidates meets the relevant criteria, the agency may disagree and instead determine not to make such designation. In any event, the receipt of such a designation for a product candidate may not result in a faster development process, review or approval compared to drugs considered for approval under conventional regulatory procedures and does not assure ultimate marketing approval by the agency. In addition, regarding fast track products and breakthrough therapies, the FDA may later decide that the products no longer meet the conditions for qualification as either a fast track product, RMAT, or a breakthrough therapy or, for priority review products, decide that period for FDA review or approval will not be shortened.

We may not be successful in our efforts to use our gene therapy technology platform to build a pipeline of additional product candidates.

An element of our strategy is to use our gene therapy technology platform to expand our product pipeline and to progress these candidates through preclinical and clinical development ourselves or together with collaborators. Although we currently have a pipeline of programs at various stages of development, we may not be able to identify or develop product candidates that are safe and effective. Even if we are successful in continuing to build our pipeline, the potential product candidates that we identify may not be suitable for clinical development. Research programs to identify new product candidates require substantial technical, financial and human resources. We or any collaborators may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful. If we do not continue to successfully develop and commercialize product candidates based upon our technology, we may face difficulty in obtaining product revenues in future periods, which could result in significant harm to our business, results of operations and financial position and materially adversely affect our share price.

Our strategy of obtaining rights to key technologies through in-licenses may not be successful.

We seek to expand our product pipeline from time to time in part by in-licensing the rights to key technologies, including those related to gene delivery, genes and gene cassettes. The future growth of our business will depend in significant part on our ability to in-license or otherwise acquire the rights to additional product candidates or technologies, particularly through our collaborations with academic research institutions. However, we may be unable to in-license or acquire the rights to any such product candidates or technologies from third parties on acceptable terms or at all. The in-licensing and acquisition of these technologies is a competitive area, and many more established companies are also pursuing strategies to license or acquire product candidates or technologies that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be competitors may be unwilling to license rights to us. Furthermore, we may be unable to identify suitable product candidates or technologies within our areas of focus. If we are unable to successfully obtain rights to suitable product candidates or technologies, our business, financial condition and prospects could suffer.

Negative public opinion and increased regulatory scrutiny of gene therapy and genetic research may damage public perception of our product candidates or adversely affect our ability to conduct our business or obtain marketing approvals for our product candidates.

Public perception may be influenced by claims that gene therapy is unsafe, and gene therapy may not gain the acceptance of the public or the medical community. The risk of cancer remains a concern for gene therapy, and we cannot assure that it will not occur in any of our planned or future clinical studies. In addition, there is the potential risk of delayed adverse events following exposure to gene therapy products due to persistent biological activity of the genetic material or other components of products used to carry the genetic material.

As of December 31, 2019, a total of three patients reported serious adverse events related to the treatment of AMT-060, our first generation hemophilia B gene therapy, in our Phase I/II trial, including one patient with a short, self-limiting fever in the first 24 hours after treatment and two patients with mild, asymptomatic elevations in liver transaminases. Additionally, one patient in our ongoing Phase IIb study of etranacogene dezaparvovec underwent hip surgery due to a pre-existing condition and was treated perioperatively with short-acting factor replacement. This was reported by the investigator as a serious adverse event unrelated to etranacogene dezaparvovec.

Adverse events in our clinical trials or those conducted by other parties (even if not ultimately attributable to our product candidates), and the resulting publicity, could result in increased governmental regulation, unfavorable public perception, failure of the medical community to accept and prescribe gene therapy treatments, potential regulatory delays in the testing or approval of our product candidates, stricter labeling requirements for those product candidates that are approved and a decrease in demand for any such product candidates. If any of these events should occur, it may have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Our Manufacturing

Our manufacturing facility is subject to significant government regulations and approvals. If we fail to comply with these regulations or maintain these approvals our business will be materially harmed.

Our manufacturing facility in Lexington is subject to ongoing regulation and periodic inspection by the FDA, EMA and other regulatory bodies to ensure compliance with current Good Manufacturing Practices ("cGMP"). Any failure to follow and document our adherence to such cGMP regulations or other regulatory requirements may lead to significant delays in the availability of products for commercial sale or clinical study, may result in the termination of or a hold on a clinical study, or may delay or prevent filing or approval of marketing applications for our products.

Failure to comply with applicable regulations could also result in the FDA, EMA, or other applicable authorities taking various actions, including levying fines and other civil penalties; imposing consent decrees or injunctions; requiring us to suspend or put on hold one or more of our clinical trials; suspending or withdrawing regulatory approvals; delaying or refusing to approve pending applications or supplements to approved applications; requiring us to suspend manufacturing activities or product sales, imports or exports; requiring us to communicate with physicians and other customers about concerns related to actual or potential safety, efficacy, and other issues involving our products; mandating product recalls or seizing products; imposing operating restrictions; and seeking criminal prosecutions. Any of the foregoing could materially harm our business, financial condition and results of operations.

Gene therapies are complex and difficult to manufacture. We could experience capacity, production or technology transfer problems that result in delays in our development or commercialization schedules or otherwise adversely affect our business.

The insect-cell based manufacturing process we use to produce our products and product candidates is highly complex and in the normal course is subject to variation or production difficulties. Issues with any of our manufacturing processes, even minor deviations from the normal process, could result in insufficient yield, product deficiencies or manufacturing failures that result in adverse patient reactions, lot failures, insufficient inventory, product recalls and product liability claims. Additionally, we may not be able to scale up some or all of our manufacturing processes that may results in delays in regulatory approvals or otherwise adversely affect our ability to manufacture sufficient amounts of our products.

Many factors common to the manufacturing of most biologics and drugs could also cause production interruptions, including raw materials shortages, raw material failures, growth media failures, equipment malfunctions, facility contamination, labor problems, natural disasters, disruption in utility services, terrorist activities, or acts of god (including the effects of the potential COVID-19 pandemic) beyond our control. We also may encounter problems in hiring and retaining the experienced specialized personnel needed to operate our manufacturing process, which could result in delays in our production or difficulties in maintaining compliance with applicable regulatory requirements.

Any problems in our manufacturing processes or facilities could make us a less attractive collaborator for academic research institutions and other parties, which could limit our access to additional attractive development programs, result in delays in our clinical development or marketing schedules and materially harm our business.

Our use of viruses, chemicals and other hazardous materials requires us to comply with regulatory requirements and exposes us to significant potential liabilities.

Our development and manufacturing processes involve the use of viruses, chemicals, other (potentially) hazardous materials and produce waste products. Accordingly, we are subject to national, federal, state and local laws and regulations in the United States and the Netherlands governing the use, manufacture, distribution, storage, handling, treatment and disposal of these materials. In addition to ensuring the safe handling of these materials, applicable requirements require increased safeguards and security measures for many of these agents, including controlling access and screening of entities and personnel who have access to them, and establishing a comprehensive national database of registered entities. In the event of an accident or failure to comply with environmental, occupational health and safety and export control laws and regulations, we could be held liable for damages that result, and any such liability could exceed our assets and resources, and could result in material harm to our business, financial condition and results of operations.

Risks Related to Regulatory Approval of Our Products

We cannot predict when or if we will obtain marketing approval to commercialize a product candidate.

The development and commercialization of our product candidates, including their design, testing, manufacture, safety, efficacy, purity, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States, the EMA and other regulatory agencies of the member states of the European Union, and similar regulatory authorities in other jurisdictions. Failure to obtain marketing approval for a product candidate in a specific jurisdiction will prevent us from commercializing the product candidate in that jurisdiction.

The process of obtaining marketing approval for our product candidates in the United States, the European Union, and other countries is expensive and may take many years, if approval is obtained at all. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application, may decide that our data are insufficient for approval, may require additional preclinical, clinical or other studies and may not complete their review in a timely manner. Further, any marketing approval we ultimately obtain may be for only limited indications or be subject to stringent labeling or other restrictions or post-approval commitments that render the approved product not commercially viable.

If we experience delays in obtaining marketing approval for any of our product candidates in the United States, the European Union, or other countries, the commercial prospects of our other product candidates may be harmed and our ability to generate revenues will be materially impaired.

The risks associated with the marketing approval process are heightened by the status of our products as gene therapies.

We believe that all our current product candidates will be viewed as gene therapy products by the applicable regulatory authorities. While there are a number of gene therapy product candidates under development, in the United States, FDA has only approved a limited number of gene therapy products, to date. Accordingly, regulators, like FDA, may have limited experience with the review and approval of marketing applications for gene therapy products.

Both the FDA and EMA have demonstrated caution in their regulation of gene therapy treatments, and ethical and legal concerns about gene therapy and genetic testing may result in additional regulations or restrictions on the development and commercialization of our product candidates that are difficult to predict. The FDA and the EMA have issued various guidance documents pertaining to gene therapy products, with which we likely must comply to gain regulatory approval of any of our product candidates in the United States or European Union, respectively. The close regulatory scrutiny of gene therapy products may result in delays and increased costs and may ultimately lead to the failure to obtain approval for any gene therapy product.

Regulatory requirements affecting gene therapy have changed frequently and continue to evolve, and agencies at both the U.S. federal and state level, as well as congressional committees and foreign governments, have sometimes expressed interest in further regulating biotechnology. In the United States, there have been a number of recent changes relating to gene therapy development. By example, FDA issued a number of new guidance documents on human gene therapy development, one of which was specific to human gene therapy for hemophilia and another of which was specific to rare diseases. Moreover, the U.S. National Institutes of Health, which also has authority over research involving gene therapy products, issued a proposed rule in October 2018, seeking to streamline the oversight of such protocols and reduce duplicative reporting requirements that are already captured within existing regulatory frameworks. Moreover, the European Commission conducted a public consultation in early 2013 on the application of EU legislation that governs advanced therapy medicinal products, including gene therapy products, which could result in changes in the data we need to submit to the EMA for our product candidates to gain regulatory approval or change the requirements for tracking, handling and distribution of the products which may be associated with increased costs. In addition, divergent scientific opinions among the various bodies involved in the review process may result in delays, require additional resources and ultimately result in rejection. The FDA, EMA, and other regulatory authorities will likely continue to revise and further update its approach to gene therapies in the coming years. These regulatory agencies, committees and advisory groups and the new regulations and guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product revenues to maintain our business.

Our failure to obtain or maintain orphan product exclusivity for any of our product candidates for which we seek this status could limit our commercial opportunity, and if our competitors are able to obtain orphan product exclusivity before we do, we may not be able to obtain approval for our competing products for a significant period.

Regulatory authorities in some jurisdictions, including the United States and the European Union, may designate drugs for relatively small patient populations as orphan drugs. Generally, if a product with an orphan drug designation subsequently receives the first marketing approval for the relevant indication, the product is entitled to a period of market exclusivity, which precludes the FDA or EMA from approving another marketing application for the same drug for the same indication for that period. The FDA and EMA, however, may subsequently approve a similar drug for the same indication during the first product's market exclusivity if the FDA or EMA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

Orphan drug exclusivity may be lost if the FDA or EMA determines that the request for designation was materially defective, or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition or if the incidence and prevalence of patients who are eligible to receive the drug in these markets materially increase. The inability to obtain or failure to maintain adequate product exclusivity for our product candidates could have a material adverse effect on our business prospects, results of operations and financial conditions.

As appropriate, we intend to seek all available periods of regulatory exclusivity for our product candidates. However, there is no guarantee that we will be granted these periods of regulatory exclusivity or that we will be able to maintain these periods of exclusivity.

The FDA grants product sponsors certain periods of regulatory exclusivity, during which the agency may not approve, and in certain instances, may not accept, certain marketing applications for competing drugs. For example, biologic product sponsors may be eligible for twelve years of exclusivity from the date of approval, seven years of exclusivity for drugs that are designated to be orphan drugs, and/or a six-month period of exclusivity added to any existing exclusivity period or patent life for the submission of FDA requested pediatric data. While we intend to apply for all periods of market exclusivity that we may be eligible for, there is no guarantee that we will receive all such periods of market exclusivity. Additionally, under certain circumstances, the FDA may revoke the period of market exclusivity. Thus, there is no guarantee that we will be able to maintain a period of market exclusivity, even if granted. In the case of orphan designation, other benefits, such as tax credits and exemption from user fees may be available. If we are not able to obtain or maintain orphan drug designation or any period of market exclusivity to which we may be entitled, we will be materially harmed, as we will potentially be subject to greater market competition and may lose the benefits associated with programs.

Risks Related to Commercialization

If we are unable to successfully commercialize our product candidates or experience significant delays in doing so, our business will be materially harmed.

Our ability to generate product revenues will depend on the successful development and eventual commercialization of our product candidates. The success of our product candidates will depend on many factors, including:

- successful completion of preclinical studies and clinical trials, and other work required by regulators;
- receipt and maintenance of marketing approvals from applicable regulatory authorities;
- our ability to timely manufacture sufficient quantities according to required quality specifications;
- obtaining and maintaining patent and trade secret protection and non-patent, orphan drug exclusivity for our product candidates;
- obtaining and maintaining regulatory approvals using our manufacturing facility in Lexington, Massachusetts;
- launch and commercialization of our products, if approved, whether alone or in collaboration with others;
- identifying and engaging effective distributors or resellers on acceptable terms in jurisdictions where we plan to utilize third parties for the marketing and sales of our product candidates;
- acceptance of our products, if approved, by patients, the medical community and third-party payers;
- effectively competing with existing therapies and gene therapies based on safety and efficacy profile;
- achieve optimal pricing based on durability of expression, safety and efficacy;
- obtaining and maintaining healthcare coverage and adequate reimbursement;
- complying with any applicable post-approval requirements and maintaining a continued acceptable overall safety profile; and
- obtaining adequate reimbursement for the total patient population and each subgroup to sustain a viable commercial business model in U.S. and EU markets.

Failure to achieve or implement any of these elements could result in significant delays or an inability to successfully commercialize our product candidates, which could materially harm our business.

The affected populations for our gene therapies may be smaller than we or third parties currently project, which may affect the size of our addressable markets.

Our projections of the number of people who have the diseases we are seeking to treat, as well as the subset of people with these diseases who have the potential to benefit from treatment with our therapies, are estimates based on our knowledge and understanding of these diseases. The total addressable market opportunities for these therapies will ultimately depend upon many factors, including the diagnosis and treatment criteria included in the final label, if approved for sale in specified indications, acceptance by the medical community, patient consent, patient access and product pricing and reimbursement.

Prevalence estimates are frequently based on information and assumptions that are not exact and may not be appropriate, and the methodology is forward-looking and speculative. The use of such data involves risks and uncertainties and is subject to change based on various factors. Our estimates may prove to be incorrect and new studies may change the estimated incidence or prevalence of the diseases we seek to address. The number of patients with the diseases we are targeting may turn out to be lower than expected or may not be otherwise amenable to treatment with our products, reimbursement may not be sufficient to sustain a viable business for all sub populations being studied, or new patients may become increasingly difficult to identify or access, any of which would adversely affect our results of operations and our business.

The addressable markets for AAV-based gene therapies may be impacted by the prevalence of neutralizing antibodies to the capsids, which are an integral component of our gene therapy constructs. Patients that have pre-existing antibodies to a particular capsid may not be eligible for administration of a gene therapy that includes this particular capsid. For example, etranacogene dezaparvovec, our gene therapy candidate for hemophilia B patients, incorporates an AAV5 capsid. In our Phase I/II clinical study of AMT-060, we screened patients for pre-existing anti-AAV5 antibodies to determine their eligibility for the trial. Three of the ten patients screened for the study tested positive for anti-AAV5 antibodies on reanalysis. However, we did not observe any ill-effects or correlation between the level of anti-AAV5 antibodies and clinical outcomes in these three patients, suggesting that patients who have anti-AAV5 antibodies may still be eligible for AAV5-based gene therapies. Since we only have been able to test a limited number of patients and have limited clinical and pre-clinical data, it is possible that future clinical studies may not confirm these results. This may limit the addressable market for etranacogene dezaparvovec and any future revenues derived from the sale of the product, if approved.

Any approved gene therapy we seek to offer may fail to achieve the degree of market acceptance by physicians, patients, third party payers and others in the medical community necessary for commercial success.

Doctors may be reluctant to accept a gene therapy as a treatment option or, where available, choose to continue to rely on existing treatments. The degree of market acceptance of any of our product candidates that receive marketing approval in the future will depend on many factors, including:

- the efficacy and potential advantages of our therapies compared with alternative treatments;
- our ability to convince payers of the long-term cost-effectiveness of our therapies and, consequently, the availability of third-party coverage and adequate reimbursement;
- the cost of treatment with gene therapies, including ours, in comparison to traditional chemical and small-molecule treatments
- the limitations on use and label requirements imposed by regulators;
- the convenience and ease of administration of our gene therapies compared with alternative treatments;
- the willingness of the target patient population to try new therapies, especially a gene therapy, and of physicians to administer these therapies;
- the strength of marketing and distribution support;
- the prevalence and severity of any side effects;
- limited access to site of service that can perform the product preparation and administer the infusion; and
- any restrictions by regulators on the use of our products.

A failure to gain market acceptance for any of the above reasons, or any reasons at all, by a gene therapy for which we receive regulatory approval would likely hinder our ability to recapture our substantial investments in that and other gene therapies and could have a material adverse effect on our business, financial condition and results of operation.

If we are unable to expand our commercialization capabilities or enter into agreements with third parties to market and sell any of our product candidates for which we obtain marketing approval, we may be unable to generate any product revenue.

To successfully commercialize any products that may result from our development programs, we need to continue to expand our commercialization capabilities, either on our own or with others. The development of our own market development effort is, and will continue to be, expensive and time-consuming and could delay any product launch. Moreover, we cannot be certain that we will be able to successfully develop this capability.

We may enter into collaborations regarding our other product candidates with other entities to utilize their established marketing and distribution capabilities, but we may be unable to enter into such agreements on favorable terms, if at all. If any current or future collaborators do not commit sufficient resources to commercialize our products, or we are unable to develop the necessary capabilities on our own, we will be unable to generate sufficient product revenue to sustain our business. We compete with many companies that currently have extensive, experienced and well-funded medical affairs, marketing and sales operations to recruit, hire, train and retain marketing and sales personnel. We also may face competition in any search for third parties to assist us with the sales and marketing efforts of our product candidates. Without an internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

If the market opportunities for our product candidates are smaller than we believe they are, our product revenues may be adversely affected, and our business may suffer.

We focus our research and product development on treatments for severe genetic and orphan diseases. Our understanding of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on estimates. These estimates may prove to be incorrect and new studies may reduce the estimated incidence or prevalence of these diseases. The number of patients in the United States, the EU and elsewhere may turn out to be lower than expected, may not be otherwise amenable to treatment with our products or patients may become increasingly difficult to identify and access, all of which would adversely affect our business, financial condition, results of operations and prospects.

Further, there are several factors that could contribute to making the actual number of patients who receive other potential products less than the potentially addressable market. These include the lack of widespread availability of, and limited reimbursement for, new therapies in many underdeveloped markets. Further, the severity of the progression of a disease up to the time of treatment, especially in certain degenerative conditions, could diminish the therapeutic benefit conferred by a gene therapy. Lastly, certain patients' immune systems might prohibit the successful delivery of certain gene therapy products to the target tissue, thereby limiting the treatment outcomes.

Our gene therapy approach utilizes vectors derived from viruses, which may be perceived as unsafe or may result in unforeseen adverse events. Negative public opinion and increased regulatory scrutiny of gene therapy may damage public perception of the safety of our product and product candidates and adversely affect our ability to conduct our business or obtain regulatory approvals for our product candidates.

Gene therapy remains a novel technology. Public perception may be influenced by claims that gene therapy is unsafe, and gene therapy may not gain the acceptance of the public or the medical community. In particular, our success will depend upon physicians who specialize in the treatment of genetic diseases targeted by our product and product candidates, if approved, prescribing treatments that involve the use of our product and product candidates, if approved, in lieu of, or in addition to, existing treatments with which they are familiar and for which greater clinical data may be available. More restrictive government regulations or negative public opinion would have an adverse effect on our business, financial condition, results of operations and prospects and may delay or impair the development and commercialization of our product candidates or demand for any products we may develop. For example, earlier gene therapy trials led to several well-publicized adverse events, including cases of leukemia and death seen in other trials using other vectors. Serious adverse events in our clinical trials, or other clinical trials involving gene therapy products or our competitors' products, even if not ultimately attributable to the relevant product candidates, and the resulting publicity, could result in increased government regulation, unfavorable public perception, potential regulatory delays in the testing

or approval of our product candidates, stricter labeling requirements for those product candidates that are approved and a decrease in demand for any products for which we obtain marketing approval.

Ethical, legal and social issues may reduce demand for any gene therapy products for which we obtain marketing approval.

Prior to receiving certain gene therapies, patients may be required to undergo genetic testing. Genetic testing has raised concerns regarding the appropriate utilization and the confidentiality of information provided by genetic testing. Genetic tests for assessing a person's likelihood of developing a chronic disease have focused public attention on the need to protect the privacy of genetic information. For example, concerns have been expressed that insurance carriers and employers may use these tests to discriminate on the basis of genetic information, resulting in barriers to the acceptance of genetic tests by consumers. This could lead to governmental authorities restricting genetic testing or calling for limits on or regulating the use of genetic testing, particularly for diseases for which there is no known cure. Any of these scenarios could decrease demand for any products for which we obtain marketing approval.

If we obtain approval to commercialize any of our product candidates outside of the United States, a variety of risks associated with international operations could materially adversely affect our business.

We expect that we will be subject to additional risks in commercializing any of our product candidates outside the United States, including:

- different regulatory requirements for approval of drugs and biologics in foreign countries;
- reduced protection for intellectual property rights;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geopolitical actions, including war and terrorism or natural disasters including earthquakes, typhoons, floods and fires.

We face substantial competition, and others may discover, develop or commercialize competing products before or more successfully than we do.

The development and commercialization of new biotechnology and biopharmaceutical products, including gene therapies, is highly competitive. We may face intense competition with respect to our product candidates, as well as with respect to any product candidates that we may seek to develop or commercialize in the future, from large and specialty pharmaceutical companies and biotechnology companies worldwide, who currently market and sell products or are pursuing the development of products for the treatment of many of the disease indications for which we are developing our product candidates. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization. In recent years, there has been a significant increase in commercial and scientific interest and financial investment in gene therapy as a therapeutic approach, which has intensified the competition in this area.

We are aware of numerous companies focused on developing gene therapies in various indications, including Applied Genetic Technologies Corp., Abeona Therapeutics, Adverum Biotechnologies, Allergan, Ally Therapeutics, Asklepios BioPharmaceutical, Astellas, AVROBIO, Axovant Gene Therapies, Bayer, Biogen, BioMarin, bluebird bio, CRISPR Therapeutics, Editas Medicine, Expression Therapeutics, Freeline Therapeutics, Generation Bio, Genethon, GlaxoSmithKline, Homology Medicines, Intellia Therapeutics, Johnson & Johnson, Krystal Biotech, LogicBio Therapeutics, Lysogene, MeiraGTx, Milo Biotechnology, Mustang Bio, Novartis, Orchard Therapeutics, Oxford Biomedica, Pfizer, REGENXBIO, Renova Therapeutics, Roche, Rocket Pharmaceuticals, Sangamo Therapeutics, Sanofi, Selecta Biosciences, Sarepta Therapeutics, Solid Biosciences, Takeda, Ultragenyx, Vivet Therapeutics, and Voyager

Therapeutics, as well as several companies addressing other methods for modifying genes and regulating gene expression. We may also face competition with respect to the treatment of some of the diseases that we are seeking to target with our gene therapies from protein, nucleic acid, antisense, RNAi and other pharmaceuticals under development or commercialized at pharmaceutical and biotechnology companies such as Alnylam Pharmaceuticals, Amgen, Bayer, Biogen, BioMarin, CSL Behring, Dicerna Pharmaceuticals, Ionis Pharmaceuticals, Novartis, Novo Nordisk, Pfizer, Translate Bio, Roche, Sanofi, Sobi, WaVe Life Sciences, and numerous other pharmaceutical and biotechnology firms.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than the products that we develop. Our competitors also may obtain FDA, EMA or other regulatory approval for their products more rapidly than we do, which could result in our competitors establishing a strong market position before we are able to enter the market. Because we expect that gene therapy patients may generally require only a single administration, we believe that the first gene therapy product to enter the market for a particular indication will likely enjoy a significant commercial advantage and may also obtain market exclusivity under applicable orphan drug regimes.

Many of the companies with which we are competing or may compete in the future have significantly greater financial resources and expertise than we do in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in more resources being concentrated among a smaller number of our competitors. Smaller and other early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

If we do not achieve our projected development goals in the timeframes we announce and expect, the commercialization of our product candidates may be delayed and, as a result, our stock price may decline.

For planning purposes, we estimate the timing of the accomplishment of various scientific, clinical, regulatory and other product development goals, or development milestones. These development milestones may include the commencement or completion of scientific studies, clinical trials, the submission of regulatory filings, and approval for commercial sale. From time to time, we publicly announce the expected timing of some of these milestones. All of these milestones are based on a variety of assumptions. The actual timing of these milestones can vary dramatically compared to our estimates, in many cases for reasons beyond our control. If we do not meet these milestones, including those that are publicly announced, the commercialization of our products may be delayed and, as a result, our stock price may decline.

Risks Related to Our Dependence on Third Parties

Our ongoing discussions with BMS to restructure or amend the terms of our collaboration may not be successful or may result in material changes to these arrangements.

The research term of our collaboration and license agreement with BMS expired in May 2019, and we are currently in discussions with BMS potentially to restructure or amend that agreement and the other related agreements to eliminate, reduce or alter our obligations under the collaboration. Our discussions are ongoing and may or may not result in any restructuring or changes to our collaboration. If a restructuring of our collaboration with BMS were to be concluded, we expect it would result in a termination or amendment of existing agreements, or the execution of new agreements that collectively could include changes in the number of future collaboration targets that may be designated by BMS, the exclusivity provisions related to collaboration targets, our obligations to provide manufacturing services for collaboration targets, as well as changes in or the elimination of our economic rights on collaboration targets, milestone payments, and BMS's warrants to purchase our ordinary shares, among other potential matters. Any such restructuring, if concluded, may include additional or different provisions from those described above, and may include economic or other terms that are less advantageous for us.

Because the outcome of these discussions is unknown, we have not taken into account the impact of such restructuring, if any, on the timing of recognizing prepaid license revenue, or any other potential financial metrics, in our consolidated financial statements. We will account for any potential changes if and when the agreements are restructured or amended.

We rely on third parties for important aspects of our development programs. If these parties do not perform successfully or if we are unable to enter into or maintain key collaboration or other contractual arrangements, our business could be adversely affected.

We have in the past entered into, and expect in the future to enter into, collaborations with other companies and academic research institutions with respect to important elements of our development programs.

Any collaboration may pose several risks, including the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- we may have limited or no control over the design or conduct of clinical trials sponsored by collaborators;
- we may be hampered from entering into collaboration arrangements if we are unable to obtain consent from our licensors to enter into sublicensing arrangements of technology we have in-licensed;
- if any collaborator does not conduct the clinical trials they sponsor in accordance with regulatory requirements or stated protocols, we will not be able to rely on the data produced in such trials in our further development efforts;
- collaborators may not perform their obligations as expected;
- collaborators may also have relationships with other entities, some of which may be our competitors;
- collaborators may not pursue development and commercialization of any product candidates or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- collaborators could develop, independently or with third parties, products that compete directly or indirectly with our products or product candidates, if, for instance, the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- our collaboration arrangements may impose restrictions on our ability to undertake other development efforts that may appear to be attractive to us;
- product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the commercialization of our product candidates;
- a collaborator with marketing and distribution rights that achieves regulatory approval may not commit sufficient resources to the marketing and distribution of such product or products;
- disagreements with collaborators, including over proprietary rights, contract interpretation or the preferred course of development, could cause delays or termination of the research, development or commercialization of product candidates, lead to additional responsibilities for us, delay or impede reimbursement of certain expenses or result in litigation or arbitration, any of which would be time-consuming and expensive;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our rights or expose us to potential litigation;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and
- collaborations may in some cases be terminated for the convenience of the collaborator and, if terminated, we could be required to expend additional funds to pursue further development or commercialization of the applicable product or product candidates.

If any collaboration does not result in the successful development and commercialization of products or if a collaborator were to terminate an agreement with us, we may not receive future research funding or milestone or royalty payments under that collaboration, and we may lose access to important technologies and capabilities of the collaboration. All the risks relating to product development, regulatory approval and commercialization described herein also apply to the activities of any development collaborators.

Risks Related to Our Intellectual Property

We rely on licenses of intellectual property from third parties, and such licenses may not provide adequate rights or may not be available in the future on commercially reasonable terms or at all, and our licensors may be unable to obtain and maintain patent protection for the technology or products that we license from them.

We currently are heavily reliant upon licenses of proprietary technology from third parties that is important or necessary to the development of our technology and products, including technology related to our manufacturing process, our vector platform, our gene cassettes and the therapeutic genes of interest we are using. These and other licenses may not provide adequate rights to use such technology in all relevant fields of use. Licenses to additional third-party technology that may be required for our development programs may not be available in the future or may not be available on commercially reasonable terms, which could have a material adverse effect on our business and financial condition.

In some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from third parties. In addition, some of our agreements with our licensors require us to obtain consent from the licensor before we can enforce patent rights, and our licensor may withhold such consent or may not provide it on a timely basis. Therefore, we cannot be certain that these patents and applications will be prosecuted and enforced in a manner consistent with the best interests of our business. In addition, if third parties who license patents to us fail to maintain such patents, or lose rights to those patents, the rights we have licensed may be reduced or eliminated.

Our intellectual property licenses with third parties may be subject to disagreements over contract interpretation, which could narrow the scope of our rights to the relevant intellectual property or technology or increase our financial or other obligations to our licensors.

The agreements under which we license intellectual property or technology from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business and financial condition.

If we fail to comply with our obligations in our intellectual property licenses with third parties, we could lose rights that are important to our business.

Our licensing arrangements with third parties may impose diligence, development and commercialization timelines, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, our counterparties may have the right to terminate these agreements either in part or in whole, in which case we might not be able to develop, manufacture or market any product that is covered by these agreements or may face other penalties under the agreements. Such an occurrence could materially adversely affect the value of the product candidate being developed under any such agreement. Termination of these agreements or reduction or elimination of our rights under these agreements may result in our having to negotiate new or amended agreements with less favorable terms or cause us to lose our rights under these agreements, including our rights to important intellectual property or technology.

If we are unable to obtain and maintain patent protection for our technology and products, or if the scope of the patent protection is not sufficiently broad, our ability to successfully commercialize our products may be impaired.

We rely, in part, upon a combination of forms of intellectual property, including in-licensed and owned patents to protect our intellectual property. Our success depends in a large part on our ability to obtain and maintain this protection in the United States, the European Union, and other countries, in part by filing patent applications related to our novel technologies and product candidates. Our patents may not provide us with any meaningful commercial protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. For example, patents we own currently are and may become subject to future patent opposition or similar proceedings, which may result in loss of scope of some claims or the entire patent. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies or products in a non-infringing manner.

Successful challenges to our patents may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products.

The patent prosecution process is expensive, time-consuming and uncertain, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Additionally, given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. For example, EU patent law with respect to the patentability of methods of treatment of the human body is more limited than U.S. law. Publications of discoveries in the scientific literature often lag the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after their priority date, or in some cases at all. Therefore, we cannot know with certainty whether we were the first to make the inventions or that we were the first to file for patent protection of the inventions claimed in our owned or licensed patents or pending patent applications. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our pending and future patent applications may not result in patents being issued that protect our technology or products, in whole or in part, or which effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the European Union, the United States or other countries may diminish the value of our patents or narrow the scope of our patent protection. Our inability to obtain and maintain appropriate patent protection for any one of our products could have a material adverse effect on our business, financial conditions and results of operations.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, or third parties may assert their intellectual property rights against us, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our owned or licensed patents or other intellectual property. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated, maintained in more narrowly amended form or interpreted narrowly.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, increase our operating losses, reduce available resources and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, which could have an adverse effect on the price of our ordinary shares.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business. For example, outside of the United States two of the patents we own are subject to patent opposition. If these or future oppositions are successful or if we are found to otherwise infringe a third party's intellectual property rights, we could be required to obtain a license from such third party to continue developing and marketing our products and technology. We may not be able to obtain the required license on commercially reasonable terms or at all. Even if we could obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing technology or product or otherwise to cease using the relevant intellectual property. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease or materially modify some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

For example, we are aware of patents owned by third parties that relate to some aspects of our programs that are still in development. In some cases, because we have not determined the final methods of manufacture, the method of administration or the therapeutic compositions for these programs, we cannot determine whether rights under such third party patents will be needed. In addition, in some cases, we believe that the claims of these patents are invalid or not infringed or will expire before commercialization. However, if such patents are needed and found to be valid and infringed, we could be required to obtain licenses, which might not be available on commercially reasonable terms, or to cease or delay commercializing certain product candidates, or to change our programs to avoid infringement.

If we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology and products could be adversely affected.

In addition to seeking patent protection, we also rely on other proprietary rights, including protection of trade secrets, know-how and confidential and proprietary information. To maintain the confidentiality of our trade secrets and proprietary information, we enter into confidentiality agreements with our employees, consultants, collaborators and other third parties who have access to our trade secrets. Our agreements with employees also provide that any inventions conceived by the individual in the course of rendering services to us will be our exclusive property. However, we may not obtain these agreements in all circumstances, and individuals with whom we have these agreements may not comply with their terms. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. In addition, in the event of unauthorized use or disclosure of our trade secrets or proprietary information, these agreements, even if obtained, may not provide meaningful protection, particularly for our trade secrets or other confidential information. To the extent that our employees, consultants or contractors use technology or know-how owned by third parties in their work for us, disputes may arise between us and those third parties as to the rights in related inventions.

Adequate remedies may not exist in the event of unauthorized use or disclosure of our confidential information including a breach of our confidentiality agreements. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time consuming, and the outcome is unpredictable. In addition, some courts in and outside of the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. The disclosure of our trade secrets or the independent development of our trade secrets by a competitor or other third party would impair our competitive position and may materially harm our business, financial condition, results of operations, stock price and prospects.

Our reliance on third parties may require us to share our trade secrets, which could increase the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Because we collaborate from time to time with various organizations and academic research institutions on the advancement of our gene therapy platform, we must, at times, share trade secrets with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, materials transfer agreements, collaborative research agreements, consulting agreements or other similar agreements with our collaborators, advisors and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information, such as trade secrets. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets, a competitor's discovery of our trade secrets or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business.

In addition, these agreements typically restrict the ability of our collaborators, advisors and consultants to publish data potentially relating to our trade secrets. Our academic collaborators typically have rights to publish data, if we are notified in advance and may delay publication for a specified time in order to secure our intellectual property rights arising from the collaboration. In other cases, publication rights are controlled exclusively by us, although in some cases we may share these rights with other parties. We also conduct joint research and development programs that may require us to share trade secrets under the terms of our research and development partnerships or similar agreements.

Some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us.

Risks Related to Pricing and Reimbursement

We face uncertainty related to insurance coverage of, and pricing and reimbursement for product candidates for which we may receive marketing approval.

We anticipate that the cost of treatment using our product candidates will be significant. We expect that most patients and their families will not be capable of paying for our products themselves. There will be no commercially viable market for our product candidates without reimbursement from third party payers, such as government health administration authorities, private health insurers and other organizations. Even if there is a commercially viable market, if the level of third-party reimbursement is below our expectations, most patients may not be able to afford treatment with our products and our revenues and gross margins will be adversely affected, and our business will be harmed.

Government authorities and other third-party payers, such as private health insurers and health maintenance organizations, decide for which medications they will pay and, subsequently, establish reimbursement levels. Reimbursement systems vary significantly by country and by region, and reimbursement approvals must be obtained on a country-by-country basis. Government authorities and third-party payers have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications and procedures. Increasingly, third party payers require drug companies to provide them with predetermined discounts from list prices, are exerting influence on decisions regarding the use of particular treatments and are limiting covered indications. Additionally, in the United States and some foreign jurisdictions, pending or potential legislative and regulatory changes regarding the healthcare system and insurance coverage, could result in more rigorous coverage criteria and downward pressure on drug prices, and may affect our ability to profitably sell any products for which we obtain marketing approval.

The pricing review period and pricing negotiations for new medicines take considerable time and have uncertain results. Pricing review and negotiation usually begins only after the receipt of regulatory marketing approval, and some authorities require approval of the sale price of a product before it can be marketed. In some markets, particularly the countries of the European Union, prescription pharmaceutical pricing remains subject to continuing direct governmental control and to drug reimbursement programs even after initial approval is granted and price reductions may be imposed. Prices of medical products may also be subject to varying price control mechanisms or limitations as part of national health systems if products are considered not cost-effective or where a drug company's profits are deemed excessive. In addition, pricing and reimbursement decisions in certain countries can lead to mandatory price reductions or additional reimbursement restrictions in other countries. Because of these restrictions, any product candidates for which we may obtain marketing approval may be subject to price regulations that delay or prohibit our or our partners' commercial launch of the product in a particular jurisdiction. In addition, we or any collaborator may elect to reduce the price of our products to increase the likelihood of obtaining reimbursement approvals. If countries impose prices, which are not sufficient to allow us or any collaborator to generate a profit, we or any collaborator may refuse to launch the product in such countries or withdraw the product from the market. If pricing is set at unsatisfactory levels, or if the price decreases, our business could be harmed, possibly materially. If we fail to obtain and sustain an adequate level of coverage and reimbursement for our products by third party payers, our ability to market and sell our products would be adversely affected and our business would be harmed.

Due to the generally limited addressable market for our target orphan indications and the potential for our therapies to offer therapeutic benefit in a single administration, we face uncertainty related to pricing and reimbursement for these product candidates.

The relatively small market size for orphan indications and the potential for long-term therapeutic benefit from a single administration present challenges to pricing review and negotiation of our product candidates for which we may obtain marketing authorization. Most of our product candidates target rare diseases with relatively small patient populations. If we are unable to obtain adequate levels of reimbursement relative to these small markets, our ability to support our development and commercial infrastructure and to successfully market and sell our product candidates for which we may obtain marketing approval will be adversely affected.

We also anticipate that many or all of our gene therapy product candidates may provide long-term, and potentially curative benefit, with a single administration. This is a different paradigm than that of other pharmaceutical therapies, which often require an extended course of treatment or frequent administration. As a result, governments and other payers may be reluctant to provide the significant level of reimbursement that we seek at the time of administration of our gene therapies or may seek to tie reimbursement to clinical evidence of continuing therapeutic benefit over time. Although it is possible that our product candidates will need to be administered only once, there may be situations in which re-administration is required, which may further complicate the pricing and reimbursement for these treatments. In addition, considering the anticipated cost of these therapies, governments and other payers may be particularly restrictive in making coverage decisions. These factors could limit our commercial success and materially harm our business.

Risks Related to Our Financial Position and Need for Additional Capital

We have incurred significant losses to date, expect to incur losses over the next several years and may never achieve or maintain profitability.

We had a net loss of $124.2 million in the year ended December 31, 2019, $83.3 million in 2018 and $79.3 million in 2017. As of December 31, 2019, we had an accumulated deficit of $659.7 million. To date, we have financed our operations primarily through the sale of equity securities and convertible debt, venture loans, through upfront payments from our collaboration partners and, to a lesser extent, subsidies and grants from governmental agencies and fees for services. We have devoted substantially all our financial resources and efforts to research and development, including preclinical studies and clinical trials. We expect to continue to incur significant expenses and losses over the next several years, and our net losses may fluctuate significantly from quarter to quarter and year to year.

We anticipate that our expenses will increase substantially as we:

- Build-out our commercial infrastructure and seek marketing approval for any product candidates (including etranacogene dezaparvovec) that successfully complete clinical trials;
- Advance the clinical development of AMT-130, our Huntington’s disease gene therapy program;
- Continue to build-out our clinical, medical and regulatory capabilities;
- Advance multiple research programs related to gene therapy candidates targeting liver-directed and CNS diseases;
- Continue to expand, enhance and optimize our technology platform, including our manufacturing capabilities, next-generation viral vectors and promoters, and other enabling technologies;
- Acquire or in-license rights to new therapeutic targets or product candidates; and
- Maintain, expand and protect our intellectual property portfolio, including in-licensing additional intellectual property rights from third parties.

We may never succeed in these activities and, even if we do, may never generate revenues that are sufficient to achieve or sustain profitability. Our failure to become and remain profitable would depress the value of our company and could impair our ability to expand our business, maintain our research and development efforts, diversify our product offerings or even continue our operations.

We will likely need to raise additional funding, which may not be available on acceptable terms, or at all. Failure to obtain capital when needed may force us to delay, limit or terminate our product development efforts or other operations which could have a material adverse effect on our business, financial conditions, results of operations and cash flows.

We expect to incur significant expenses in connection with our on-going activities and that we will likely need to obtain substantial additional funding in connection with our continuing operations. In addition, we have based our estimate of our financing requirements on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect.

Adequate capital may not be available to us when needed or may not be available on acceptable terms. Our ability to obtain debt financing may be limited by covenants we have made under our Second Amended and Restated Loan and Security Agreement (as amended, the “2018 Amended Facility”) with Hercules Technology Growth Capital, Inc. (“Hercules”) and our pledge to Hercules of substantially all our assets as collateral. If we raise additional capital through the sale of equity or convertible debt securities, our shareholders' ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of holders of our ordinary shares.

If we raise additional funds through collaborations, strategic alliances, or marketing, distribution or licensing arrangements with third parties, we may have to issue additional equity, relinquish valuable rights to our technologies, future revenue streams, products or product candidates, or grant licenses on terms that may not be favorable to us. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts, which would have a negative impact on our financial condition, results of operations and cash flows.

Our existing and any future indebtedness could adversely affect our ability to operate our business.

As of December 31, 2019, we had $35.0 million of outstanding principal of borrowings under the 2018 Amended Facility, which we are required to repay in monthly principal installments from January 2022 through June 2023. We could in the future incur additional debt obligations beyond our borrowings from Hercules. Our existing loan obligations, together with other similar obligations that we may incur in the future, could have significant adverse consequences, including:

- requiring us to dedicate a portion of our cash resources to the payment of interest and principal, reducing money available to fund working capital, capital expenditures, research and development and other general corporate purposes;
- increasing our vulnerability to adverse changes in general economic, industry and market conditions;
- subjecting us to restrictive covenants that may reduce our ability to take certain corporate actions or obtain further debt or equity financing;
- limiting our flexibility in planning for, or reacting to, changes in our business and the industry in which we compete; and
- placing us at a disadvantage compared to our competitors that have less debt or better debt servicing options.

We may not have sufficient funds, and may be unable to arrange for additional financing, to pay the amounts due under our existing loan obligations. Failure to make payments or comply with other covenants under our existing debt could result in an event of default and acceleration of amounts due. Under the 2018 Amended Facility, the occurrence of an event that would reasonably be expected to have a material adverse effect on our business, operations, assets or condition is an event of default. If an event of default occurs and the lender accelerates the amounts due, we may not be able to make accelerated payments, and the lender could seek to enforce security interests in the collateral securing such indebtedness, which includes substantially all our assets.

Risks Related to Other Legal Compliance Matters

Our relationships with customers and third-party payers will be subject to applicable anti-kickback, anti-bribery, fraud and abuse and other laws and regulations, which, if we are found in violation thereof, could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and third-party payers will play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. Our future arrangements with third party payers and customers may expose us to broadly applicable anti-bribery laws, including the Foreign Corrupt Practices Act, as well as fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we would be able to market, sell and distribute any products for which we obtain marketing approval.

Efforts to ensure that our business arrangements with third parties will comply with applicable laws and regulations will involve substantial costs. If our operations, or the activities of our collaborators, distributors or other third-party agents are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion of products from government funded healthcare programs and the curtailment or restructuring of our operations. The cost associated with any of these actions could be substantial and could cause irreparable harm to our reputation or otherwise have a material adverse effect on our business, financial condition and results of operations.

We are subject to laws governing data protection in the different jurisdictions in which we operate. The implementation of such data protection regimes is complex, and should we fail to fully comply, we may be subject to penalties that they may have an adverse effect on our business, financial condition and results of operations.

Many national and state laws govern the privacy and security of health information and other personal and private information. They often differ from each other in significant ways. For instance, the EU has adopted a comprehensive data protection law called the General Data Protection Regulation ("GDPR") that took effect in May 2018. The GDPR, together with the national legislation of the EU member states governing the processing of personal data, impose strict obligations and restrictions on the ability to collect, analyze and transfer personal data, including health data from clinical trials and adverse event reporting. In particular, these obligations and restrictions concern the consent of the individuals to whom the personal data relates, the information provided to the individuals, the transfer of personal data out of the EU, security breach notifications, security and confidentiality of the personal data, and imposition of substantial potential fines for breaches of the data protection obligations. The GDPR imposes penalties for non-compliance of up to the greater of EUR 20 million or 4% of worldwide revenue. Data protection authorities from the different EU member states may interpret the GDPR and national laws differently and impose additional requirements, which add to the complexity of processing personal data in the EU. Guidance on implementation and compliance practices are often updated or otherwise revised. The significant costs of compliance with, risk of regulatory enforcement actions under, and other burdens imposed by the GDPR as well as under other regulatory schemes throughout the world related to privacy and security of health information and other personal and private data could have an adverse impact on our business, financial condition and results of operations.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We cannot eliminate the risk of contamination or injury from these materials. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

Although we maintain employer's liability insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

In addition, we may incur substantial costs to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions that could have a material adverse effect on our business, financial condition and results of operations.

Product liability lawsuits could cause us to incur substantial liabilities and to limit commercialization of our therapies.

We face an inherent risk of product liability related to the testing of our product candidates in human clinical trials and in connection with product sales. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we develop or sell;
- injury to our reputation and significant negative media attention;
- negative publicity or public opinion surrounding gene therapy;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue;
- reduced resources of our management to pursue our business strategy; and
- the inability to further develop or commercialize any products that we develop.

Dependent upon the country where the clinical trial is conducted, we currently hold coverages ranging from EUR 500,000 to EUR 6,500,000 per occurrence and per clinical trial. Such coverage may not be adequate to cover all liabilities that we may incur. We may need to increase our insurance coverage as we expand our clinical trials. In addition, insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. In the event insurance coverage is insufficient to cover liabilities that we may incur, it could have a material adverse effect on our business, financial condition and results of operations.

Healthcare legislative and regulatory reform measures may have a material adverse effect on our financial operations.

Our industry is highly regulated and changes in law may adversely impact our business, operations or financial results. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or the PPACA, is a sweeping measure intended to, among other things, expand healthcare coverage within the United States, primarily through the imposition of health insurance mandates on employers and individuals and expansion of the Medicaid program. Several provisions of the law may affect us and increase certain of our costs.

In addition, other legislative changes have been adopted since the PPACA was enacted. These changes include aggregate reductions in Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013 and, following passage of the Bipartisan Budget Act of 2018, will remain in effect through 2027 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several types of providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These laws may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our customers and, accordingly, our financial operations.

We anticipate that the PPACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and an additional downward pressure on the reimbursement our customers may receive for our products. Further, there have been, and there may continue to be, judicial and Congressional challenges to certain aspects of the PPACA. For example, the U.S. Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additional legislative and regulatory changes to the PPACA, its implementing regulations and guidance and its policies, remain possible in the 116th U.S. Congress and under the Trump Administration. However, it remains unclear how any new legislation or regulation might affect the prices we may obtain for any of our product candidates for which regulatory approval is obtained. Any reduction in reimbursement from Medicare and other government programs may result in a similar reduction in payments from private payers. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products.

Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs.

Our internal computer systems and those of our current and any future collaborators and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. The size and complexity of our information technology systems, and those of our collaborators, contractors and consultants, and the large amounts of confidential information stored on those systems, make such systems vulnerable to service interruptions or to security breaches from inadvertent or intentional actions by our employees, third-party vendors and/or business partners, or from cyber-attacks by malicious third parties. Cyber-attacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. Cyber-attacks could include the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information. Cyber-attacks also could include phishing attempts or e-mail fraud to cause payments or information to be transmitted to an unintended recipient.

While we have not experienced a system failure, accident, cyber-attack or security breach that has resulted in a material interruption in our operations to date, we have experienced and addressed recent system failures, cyber-attacks and security breaches. In the future, such events could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. Additionally, any such event that leads to unauthorized access, use or disclosure of personal information, including personal information regarding our patients or employees, could harm our reputation, cause us not to comply with federal and/or state breach notification laws and foreign law equivalents and otherwise subject us to liability under laws and

regulations that protect the privacy and security of personal information. Security breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. While we have implemented security measures to protect our information technology systems and infrastructure, there can be no assurance that such measures will prevent service interruptions or security breaches that could adversely affect our business and the further development and commercialization of our product and product candidates could be delayed.

Risks Related to Employee Matters and Managing Growth

Our future success depends on our ability to retain key executives and technical staff and to attract, retain and motivate qualified personnel.

We are highly dependent on hiring, training, retaining and motivating key personnel to lead our research and development, clinical operations and manufacturing efforts. Although we have entered into employment agreements with our key personnel, each of them may terminate their employment on short notice. We do not maintain key person insurance for any of our senior management or employees.

The loss of the services of our key employees could impede the achievement of our research and development objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing senior management and key employees may be difficult and may take an extended period because of the limited number of individuals in our industry with the breadth and depth of skills and experience required to successfully develop gene therapy products. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms.

If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

Risks Related to Our Ordinary Shares

The price of our ordinary shares has been and may in the future be volatile and fluctuate substantially.

Our share price has been and may in the future be volatile. From the start of trading of our ordinary shares on the NASDAQ Global Select Market on February 4, 2014 through February 26, 2020, the sale price of our ordinary shares ranged from a high of $82.49 to a low of $4.72. The closing price on February 26, 2020, was $53.56 per ordinary share. The stock market in general and the market for smaller biopharmaceutical companies in particular, have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. The market price for our ordinary shares may be influenced by many factors, including:

- the success of competitive products or technologies;
- results of clinical trials of our product candidates or those of our competitors;
- public perception of gene therapy;
- regulatory delays and greater government regulation of potential products due to adverse events;
- regulatory or legal developments in the European Union, the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our product candidates or clinical development programs;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- mergers, acquisitions, licensing and collaboration activity among our peer companies in the pharmaceutical and biotechnology sectors; and
- general economic, industry and market conditions.

An active trading market for our ordinary shares may not be sustained.

Although our ordinary shares are listed on The NASDAQ Global Select Market, an active trading market for our shares may not be sustained. If an active market for our ordinary shares does not continue, it may be difficult for our shareholders to sell their shares without depressing the market price for the shares or sell their shares at all. Any inactive trading market for our ordinary shares may also impair our ability to raise capital to continue to fund our operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

Our directors, executive officers and major shareholders, if they choose to act together, will continue to have a significant degree of control with respect to matters submitted to shareholders for approval.

Our directors, executive officers and major shareholders holding more than 5% of our outstanding ordinary shares, in the aggregate, beneficially own approximately 47.3% of our issued shares (including such shares to be issued in relation to exercisable options to purchase ordinary shares) as at December 31, 2019. As a result, if these shareholders were to choose to act together, they may be able, as a practical matter, to control many matters submitted to our shareholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, could control the election of the board directors and the approval of any merger, consolidation or sale of all or substantially all our assets. These shareholders may have interests that differ from those of other of our shareholders and conflicts of interest may arise.

Provisions of our articles of association or Dutch corporate law might deter acquisition bids for us that might be considered favorable and prevent or frustrate any attempt to replace our board.

Certain provisions of our articles of association may make it more difficult for a third party to acquire control of us or effect a change in our board. These provisions include:

- staggered terms of our directors;
- a provision that our directors may only be removed at a general meeting of shareholders by a two-thirds majority of votes cast representing more than half of the issued share capital of the Company; and
- a requirement that certain matters, including an amendment of our articles of association, may only be brought to our shareholders for a vote upon a proposal by our board.

We do not expect to pay dividends in the foreseeable future.

We have not paid any dividends since our incorporation. Even if future operations lead to significant levels of distributable profits, we currently intend that earnings, if any, will be reinvested in our business and that dividends will not be paid until we have an established revenue stream to support continuing dividends. Accordingly, shareholders cannot rely on dividend income from our ordinary shares and any returns on an investment in our ordinary shares will likely depend entirely upon any future appreciation in the price of our ordinary shares.

If we fail to maintain an effective system of internal controls, we may be unable to accurately report our results of operations or prevent fraud or fail to meet our reporting obligations, and investor confidence and the market price of our ordinary shares may be materially and adversely affected.

If we fail to maintain the adequacy of our internal control over financial reporting, we may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting. If we fail to maintain effective internal control over financial reporting, we could experience material misstatements in our financial statements and fail to meet our reporting obligations, which would likely cause investors to lose confidence in our reported financial information. This could in turn limit our access to capital markets, harm our results of operations, and lead to a decline in the trading price of our ordinary shares. Additionally, ineffective internal control over financial reporting could expose us to increased risk of fraud or misuse of corporate assets and subject us to potential delisting from The NASDAQ Global Select Market, regulatory investigations and civil or criminal sanctions. Our reporting and compliance obligations may place a significant strain on our management, operational and financial resources and systems for the foreseeable future.

Unfavorable global economic conditions, including those caused by political instability in the United States or by the U.K.'s recent departure from the European Union ("Brexit"), could adversely affect our business, financial condition or results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. Political instability in the United States and surrounding Brexit has the potential to disrupt global economic conditions and supply changes. While we do not believe that our operations will be directly adversely affected materially by Brexit, we may not be able to anticipate the effects Brexit will have on our suppliers and any collaborators. The most recent global financial crisis caused extreme volatility and disruptions in the capital and credit markets.

A severe or prolonged economic downturn, such as the most recent global financial crisis, could result in a variety of risks to our business, including weakened demand for our product candidates and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could strain our suppliers, possibly resulting in supply disruption, or cause delays in payments for our services by third-party payers or our collaborators. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

Risks for U.S. Holders

We have in the past qualified and in the future may qualify as a passive foreign investment company, which may result in adverse U.S. federal income tax consequence to U.S. holders.

Based on our average value of our gross assets, our cash and cash equivalents as well as the price of our shares we qualified as a passive foreign investment company ("PFIC") for U.S. federal income tax for 2016 but not in 2017, 2018 or 2019. A corporation organized outside the United States generally will be classified as a PFIC for U.S. federal income tax purposes in any taxable year in which at least 75% of its gross income is passive income or on average at least 50% of the gross value of its assets is attributable to assets that produce passive income or are held to produce passive income. Passive income for this purpose generally includes dividends, interest, royalties, rents and gains from commodities and securities transactions. Our status in any taxable year will depend on our assets and activities in each year, and because this is a factual determination made annually after the end of each taxable year, there can be no assurance that we will continue to qualify as a PFIC in future taxable years. The market value of our assets may be determined in large part by reference to the market price of our ordinary shares, which is likely to fluctuate, and may fluctuate considerably given that market prices of biotechnology companies have been especially volatile. If we were considered a PFIC for the current taxable year or any future taxable year, a U.S. holder would be required to file annual information returns for such year, whether the U.S. holder disposed of any ordinary shares or received any distributions in respect of ordinary shares during such year. In certain circumstances a U.S. holder may be able to make certain tax elections that would lessen the adverse impact of PFIC status; however, in order to make such elections the U.S. holder will usually have to have been provided information about the company by us, and we do not intend to provide such information.

The U.S. federal income tax rules relating to PFICs are complex. U.S. holders are urged to consult their tax advisors with respect to the purchase, ownership and disposition of our shares, the possible implications to them of us being treated as a PFIC (including the availability of applicable election, whether making any such election would be advisable in their particular circumstances) as well as the federal, state, local and foreign tax considerations applicable to such holders in connection with the purchase, ownership and disposition of our shares.

Any U.S. or other foreign judgments may be difficult to enforce against us in the Netherlands.

Although we now report as a U.S. domestic filer for SEC reporting purposes, we are incorporated under the laws of the Netherlands. Some of the members of our board and senior management reside outside the United States. As a result, it may not be possible for shareholders to effect service of process within the United States upon such persons or to enforce judgments against them or us in U.S. courts, including judgments predicated upon the civil liability provisions of the federal securities laws of the United States. In addition, it is not clear whether a Dutch court would impose civil liability on us or any of our Board members in an original action based solely upon the federal securities laws of the United States brought in a court of competent jurisdiction in the Netherlands.

The United States and the Netherlands currently do not have a treaty providing for the reciprocal recognition and enforcement of judgments, other than arbitration awards, in civil and commercial matters. Consequently, a final judgment for payment given by a court in the United States, whether or not predicated solely upon U.S. securities laws, would not automatically be recognized or enforceable in the Netherlands. To obtain a judgment which is enforceable in the Netherlands, the party in whose favor a final and conclusive judgment of the U.S. court has been rendered will be required to file its claim with a court of competent jurisdiction in the Netherlands. Such party may submit to the Dutch court the final judgment rendered by the U.S. court. If and to the extent that the Dutch court finds that the jurisdiction of the U.S. court has been based on grounds which are internationally acceptable and that proper legal procedures have been observed, the Dutch court will, in principle, give binding effect to the judgment of the U.S. court, unless such judgment contravenes principles of public policy of the Netherlands. Dutch courts may deny the recognition and enforcement of punitive damages or other awards. Moreover, a Dutch court may reduce the amount of damages granted by a U.S. court and recognize damages only to the extent that they are necessary to compensate actual losses or damages. Enforcement and recognition of judgments of U.S. courts in the Netherlands are solely governed by the provisions of the Dutch Civil Procedure Code.

Therefore U.S. shareholders may not be able to enforce against us or our board members or senior management who are residents of the Netherlands or countries other than the United States any judgments obtained in U.S. courts in civil and commercial matters, including judgments under the U.S. federal securities laws.

The rights and responsibilities of our shareholders and directors are governed by Dutch law and differ in some important respects from the rights and responsibilities of shareholders under U.S. law.

Although we now report as a U.S. domestic filer for SEC purposes, our corporate affairs are governed by our articles of association and by the laws governing companies incorporated in the Netherlands. The rights of our shareholders and the responsibilities of members of our board under Dutch law are different than under the laws of some U.S. jurisdictions. In the performance of their duties, our board members are required by Dutch law to consider the interests of uniQure, its shareholders, its employees and other stakeholders and not only those of our shareholders (as would be required under the law of most U.S. jurisdictions). As a result of these considerations our directors may take action that would be different than those that would be taken by a company organized under the law of some U.S. jurisdictions.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Lexington, Massachusetts / United States

We operate an 83,998 square feet GMP qualified manufacturing facility that we lease in Lexington, Massachusetts. In November 2018, we extended and expanded the facility by leasing an additional 30,655 square feet (as of from June 1, 2019 onwards) of the same building. The expanded and extended lease for the facility terminates in June 2029, and subject to the provisions of the lease, may be renewed for two subsequent five-year terms.

Amsterdam / The Netherlands

In 2016, we entered into leases for a total of approximately 111,000 square feet facility in Amsterdam. The lease for this facility terminates in 2032, with an option to extend in increments of five-year periods.

In December 2017, we entered into an agreement to sub-lease three of the seven floors of our Amsterdam facility for a ten-year term ending on December 31, 2027, with an option for the sub-lessee to extend until December 31, 2031 as well as an option to break the lease prior to December 31, 2020 subject to the lessee paying a penalty and breaking certain financial covenants.

We believe that our existing facilities are adequate to meet current needs and that suitable alternative spaces will be available in the future on commercially reasonable terms.

Item 3. Legal Proceedings.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Part II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our ordinary shares are listed on the NASDAQ Global Select Market under the symbol "QURE". We have never paid any cash dividends on our ordinary shares, and we do not anticipate paying cash dividends in the foreseeable future. We anticipate that we will retain all earnings, if any, to support operations and to finance the growth and development of our business for the foreseeable future.

Unregistered Sales of Equity Securities

During the period covered by this Annual Report on Form 10-K, we have issued the following securities that were not registered under the Securities Act:

1. In October 2017, we issued 64,648 ordinary shares to the sellers of the Inocard business in connection with the amended purchase agreement by which we acquired the Inocard business. No cash consideration was paid for the shares, as such shares were issued as amended consideration for our previous acquisition of the Inocard business. We deemed the offer and issuance of these shares to be exempt from registration under the Securities Act in reliance on Regulation S of the Securities Act, as an offshore offering of securities and such shares were issued as restricted shares. The sellers of the Inocard business represented to us that they were in compliance with the requirements of Regulation S.

2. In December 2017 we issued 114,172 ordinary shares to certain of the shareholders of the Company pursuant to exercised warrants for $2.0 million in aggregate cash consideration. The warrants that were exercised were issued prior to the Company's initial public offering. We deemed the sale and issuance of these shares to be exempt from registration under the Securities Act in reliance on Regulation S of the Securities Act, as an offshore offering of securities and such shares were issued as restricted shares. The warrant holders represented to us that they were in compliance with the requirements of Regulation S.

3. In February 2019 we issued 37,175 ordinary shares to Hercules Capital Inc. pursuant to exercised warrants for $0.5 million in aggregate cash consideration. We deemed the sale and issuance of these shares to be exempt from registration under the Securities Act in reliance on Regulation S of the Securities Act, as an offshore offering of securities and such shares were issued as restricted shares. Hercules Capital Inc. represented to us that they were in compliance with the requirements of Regulation S.

Use of Proceeds from Registered Securities

On September 10, 2019, we completed a follow-on public offering of 4,891,305 ordinary shares at a public offering price of $46.00 per ordinary share, and on September 13, 2019, we completed the sale of an additional 733,695 ordinary shares at a public offering price of $46.00 per ordinary share pursuant to the exercise by the underwriters of the option to purchase additional ordinary shares, resulting in gross proceeds to us of $258.8 million. The net proceeds from this offering were $242.7 million, after deducting underwriting discounts and commissions of $15.5 million. Additionally, we deducted $0.6 million of expenses incurred related to this offering from additional paid-in capital. The offer and sale of the shares in our follow-on offering were registered under the Securities Act pursuant to a registration statement on Form S-3 (File No. 333-216701) which was declared effective by the SEC on May 26, 2017. Following the sale of the shares in connection with the closing of our follow-on offering, the offering terminated. Goldman Sachs & Co. LLC, SVB Leerink LLC and Stifel, Nicolaus & Company, Incorporated acted as joint book-running managers. Cantor Fitzgerald & Co. and SunTrust Robinson Humphrey, Inc. acted as co-lead managers and H.C. Wainwright & Co., LLC, acted as co-manager.

Issuer Stock Repurchases

We did not make any purchases of our ordinary shares during the year ended December 31, 2019. Our affiliates made purchases of our ordinary shares as described in "Unregistered Sales of Equity Securities" above.

Holders

As of February 26, 2020, there were approximately ten holders of record of our ordinary shares. The actual number of shareholders is greater than this number of record holders, and includes shareholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include shareholders whose shares may be held in trust by other entities.

Securities Authorized for Issuance Under Equity Compensation Plans

The table below provides information about our Ordinary Shares that may be issued under our 2014 Amended and Restated Share Option Plan (the "2014 Plan"), our predecessor plan, our Employee Share Purchase Plan and outside these plans as of December 31, 2019:

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights (1)	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
2012 Equity Incentive Plan (Equity Compensation Plan Approved by Security Holders)	14,000	$ 9.07 (2)	—
2014 Restated Plan (Equity Compensation Plan Approved by Security Holders)	3,431,356	$ 16.49	3,005,007
Employee Share Purchase Plan (Equity Compensation Plan Approved by Security Holders)	—	—	138,207
Equity Compensation Plans Not Approved by Security Holders (3)	102,000	$ 5.31	— (4)
Total	**3,547,356**	**$ 16.14**	**3,143,214**

(1) The exercise price for our RSU and earned PSU awards is $0.00 and is included in the weighted average exercise price of outstanding options, warrants and rights.

(2) The exercise price of outstanding options is denominated in euro and translated to dollar at the foreign exchange rate as of December 31, 2019.

(3) These awards include inducement grants entered into by the Company outside of the 2014 Restated Plan and the predecessor plans.

(4) At the 2019 annual general meeting of shareholders, our Board of Directors was granted the authority to issue a maximum of 19.9% of the Company's aggregate issued capital outside of a public offering. Ordinary Shares may be issued as part of inducement or other option grants but are not restricted to that purpose.

Item 6. Selected Financial Data

The following selected consolidated financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations", the consolidated financial statements and related notes, and other financial information included in this Annual Report on Form 10-K.

We derived the selected consolidated statements of operations and comprehensive loss for the years ended December 31, 2019, 2018, and 2017 and the selected consolidated balance sheet data as of December 31, 2019 and 2018 from our audited consolidated financial statements, which are included elsewhere in this Annual Report on Form 10-K.

We derived the selected consolidated statements of operations and comprehensive loss for the years ended December 31, 2016 and 2015 and the selected consolidated balance sheets as of December 31, 2017, 2016 and 2015 from our audited consolidated financial statements not included in this Annual Report on Form 10-K. Historical results are not necessarily indicative of the results to be expected in future periods.

We qualified as a U.S. domestic filer for SEC reporting purposes on January 1, 2017, and accordingly have prepared our financial statements in accordance with U.S. GAAP and report our financials in U.S. dollars.

	Years ended December 31,				
	2019	2018	2017	2016	2015
	(in thousands, except per share data)				
License revenues	$ —	$ —	$ 8	$ 975	$ —
License revenues from related party[1]	4,988	7,528	4,121	3,940	3,335
Collaboration revenues	—	—	4,638	7,164	—
Collaboration revenues from related party	2,293	3,756	4,340	13,019	7,243
Total revenues	**7,281**	**11,284**	**13,107**	**25,098**	**10,578**
Operating expenses:					
Research and development expenses	(94,737)	(74,809)	(72,172)	(72,510)	(59,125)
Selling, general and administrative expenses	(33,544)	(25,305)	(24,635)	(25,999)	(23,383)
Total operating expenses	**(128,281)**	**(100,114)**	**(96,807)**	**(98,509)**	**(82,508)**
Other income	1,888	2,146	15,430	1,465	779
Other expense	(2,028)	(1,548)	(3,073)	—	—
Loss from operations	**(121,140)**	**(88,232)**	**(71,343)**	**(71,946)**	**(71,151)**
Interest income	3,547	2,729	117	70	121
Interest expense	(3,810)	(2,160)	(2,232)	(2,172)	(2,572)
Foreign currency (losses) / gains, net	(268)	4,382	(3,566)	1,034	(2,496)
Other non-operating (expense) / income, net	(2,530)	208	(2,435)	785	(7,164)
Loss before income tax expense	**(124,201)**	**(83,073)**	**(79,459)**	**(72,229)**	**(83,262)**
Income tax benefit / (expense)	—	(231)	199	(1,145)	1,179
Net loss	**$ (124,201)**	**$ (83,304)**	**$ (79,260)**	**$ (73,374)**	**$ (82,083)**
Other comprehensive income / (loss), net of income tax:					
Foreign currency translation adjustments net of tax impact of nil for the year ended December 31, 2019 (2018: $(0.2) million, 2017: $0.2 million, 2016: $(1.1) million, 2015: $0.7 million)	570	(5,261)	2,757	271	(1,556)
Total comprehensive loss	**$ (123,631)**	**$ (88,565)**	**$ (76,503)**	**$ (73,103)**	**$ (83,639)**
Basic and diluted net loss per common share	$ (3.11)	(2.34)	(2.94)	(2.93)	(3.72)

(1) Our license revenue for the years ended December 31, 2019 and 2018 reflects the 2018 implementation of ASC 606 Revenue from Contracts with Customers using the modified retrospective method. License revenue for the years ended December 31, 2017, 2016 and 2015 has not been adjusted. See Note 2.3.19 to our consolidated financial statements.

	As of December 31,				
	2019	2018	2017	2016	2015
	in thousands				
Cash and cash equivalents	$ 377,793	$ 234,898	$ 159,371	$ 132,496	$ 221,626
Total assets[1]	448,630	273,906	209,644	190,265	262,663
Total debt	36,062	35,471	20,791	20,236	20,356
Accumulated deficit[2]	(659,707)	(535,506)	(475,318)	(396,058)	(322,684)
Total shareholders' equity	$ 323,058	$ 179,606	$ 89,359	$ 63,631	$ 127,927

(1) Our total assets as of December 31, 2019 reflect the implementation of ASC 842 Leases using the modified retrospective method. Total assets as of December 31, 2018, 2017, 2016 and 2015 years have not been adjusted. See Note 3 to our consolidated financial statements.

(2) Our accumulated deficit as of December 31, 2019 and 2018 reflect the implementation of ASC 606 Revenue from Contracts with Customers using the modified retrospective method. Accumulated deficit for the years ended December 31, 2017, 2016 and 2015 has not been adjusted.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is intended to help the reader understand our results of operations and financial condition. This MD&A is provided as a supplement to, and should be read in conjunction with, our audited consolidated financial statements and the accompanying notes thereto and other disclosures included in this Annual Report on Form 10-K, including the disclosures under "Risk Factors". Our consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States ("U.S. GAAP") and unless otherwise indicated are presented in U.S. dollars.

Except for the historical information contained herein, the matters discussed this MD&A may be deemed to be forward-looking statements. Forward-looking statement are only predictions based on management's current views and assumptions and involve risks and uncertainties, and actual results could differ materially from those projected or implied. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. Words such as "may," "expect," "anticipate," "estimate," "intend," and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements.

Our actual results and the timing of certain events may differ materially from the results discussed, projected, anticipated, or indicated in any forward-looking statements. We caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from the forward-looking statements contained in this MD&A. In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate are consistent with the forward-looking statements contained in this MD&A, they may not be predictive of results or developments in future periods.

We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they are made. We disclaim any obligation, except as specifically required by law and the rules of the SEC, to publicly update or revise any such statements to reflect any change in our expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

Overview

We are a leader in the field of gene therapy, seeking to develop single treatments with potentially curative results for patients suffering from genetic and other devastating diseases. We are advancing a focused pipeline of innovative gene therapies, including product candidates for the treatment of hemophilia and Huntington's disease. We believe our validated technology platform and manufacturing capabilities provide us distinct competitive advantages, including the potential to reduce development risk, cost and time to market. We produce our AAV-based gene therapies in our own facilities with a proprietary, commercial-scale, current good manufacturing practices ("cGMP")-compliant, manufacturing process. We believe our Lexington, Massachusetts-based facility is one of the world's leading, most versatile, gene therapy manufacturing facilities.

Business developments

Below is a summary of our recent significant business developments:

Hemophilia B program – Etranacogene dezaparvovec (AMT-061)

Etranacogene dezaparvovec is our lead gene therapy candidate and includes an AAV5 vector incorporating the FIX-Padua variant. We are currently conducting a pivotal study in patients with severe and moderately-severe hemophilia B. Etranacogene dezaparvovec has been granted Breakthrough Therapy Designation by the United States FDA and access to the PRIME initiative by the EMA.

In June 2018, we initiated our Phase III HOPE-B pivotal trial of etranacogene dezaparvovec. The trial is a multinational, multi-center, open-label, single-arm study to evaluate the safety and efficacy of etranacogene dezaparvovec. After a six-month lead-in period, patients will receive a single intravenous administration of etranacogene dezaparvovec. The primary endpoint of the study will be based on the FIX activity level achieved following the administration of etranacogene dezaparvovec, and the secondary endpoints will measure annualized FIX replacement therapy usage, annualized bleed rates and safety. Patients enrolled in the HOPE-B trial will be tested for the presence of pre-existing neutralizing antibodies to AAV5 but will not be excluded from the trial based on their titers.

In January 2019, we dosed the first patient in our Phase III HOPE-B hemophilia B pivotal trial and in September 2019, we completed the enrollment of approximately 60 patients in the lead-in phase of the trial.

In August 2018, we initiated a Phase IIb dose-confirmation study of etranacogene dezaparvovec. The Phase IIb study is an open-label, single-dose, single-arm, multi-center trial being conducted in the United States. The objective of the study was to evaluate the safety and tolerability of etranacogene dezaparvovec and confirm the dose based on FIX activity at six weeks after administration. Three patients with severe hemophilia were enrolled in this study and received a single intravenous infusion of $2x10^{13}$ gc/kg.

In February, May, July and December 2019, we presented updated data from the Phase IIb dose-confirmation study of etranacogene dezaparvovec. Data from the Phase IIb study of etranacogene dezaparvovec show that all three patients experienced increasing and sustained FIX levels after a one-time administration of etranacogene dezaparvovec, with two of the three patients maintaining FIX activity in the normal range. Mean FIX activity was 41% of normal at 52 weeks of follow-up, exceeding threshold FIX levels generally considered sufficient to significantly reduce the risk of bleeding events. The first patient achieved FIX activity of 50% of normal. FIX activity in the second patient was 31% of normal and in the third patient was 41% of normal. The second and third patients previously screen-failed and were excluded from another gene therapy study due to pre-existing neutralizing antibodies to a different AAV vector. Based on the data obtained through October 24, 2019, no patient experienced a material loss of FIX activity, reported any bleeding events or required any infusions of FIX replacement therapy for bleeds. One patient underwent hip surgery due to a pre-existing condition and was treated perioperatively with short-acting factor replacement. This was reported by the investigator as a serious adverse event unrelated to etranacogene dezaparvovec.

AMT-060

In December 2019, we also presented four-year follow-up data related to our first-generation hemophilia B program. AMT-060, which incorporated a wild-type FIX gene. All 10 patients enrolled in the Phase I/II study continue to show long-term meaningful clinical impact, including sustained increases in FIX activity and improvements in their disease state as measured by reduced usage of FIX replacement therapy and decreased bleeding frequency. At up to four years of follow-up, AMT-060 continues to be well-tolerated, with no new serious adverse events and no development of inhibitors since the last reported data.

All five patients in the high dose cohort of $2x10^{13}$ gc/kg continue to be free of routine FIX replacement therapy at up to three and a half years after treatment. Based on the last six months of data collected during the fourth year of follow-up, the mean annualized bleeding rate was zero compared to an average of four bleeds during the year prior to treatment, representing a 100% reduction. Steady state mean yearly FIX activity at three and a half years was 7.5% compared with 7.1% in the first year, 8.4% in the second and 7.9% in the third year.

Huntington's disease program (AMT-130)

AMT-130 is our novel gene therapy candidate for the treatment of Huntington's disease. AMT-130 utilizes our miQURE™ proprietary, gene-silencing platform and incorporates an AAV vector carrying a miRNA specifically designed to silence the huntingtin gene and the potentially highly toxic exon 1 protein fragment. AMT-130 has received orphan drug and fast track designations from the FDA and Orphan Medicinal Product Designation from the EMA.

In January 2019, our IND application for AMT-130 was cleared by the FDA, thereby enabling us to initiate our planned Phase I/II clinical study. The Phase I/II protocol is a randomized, imitation surgery-controlled, double-blinded study conducted at three surgical sites, and multiple referring, non-surgical sites in the U.S. The primary objective of the study is to evaluate the safety, tolerability and efficacy of AMT-130 at two doses. In the fourth quarter of 2019, we initiated patient screening. Additionally, cGMP clinical material has been manufactured at our Lexington facility and has been released for shipment.

In January 2019, the U.S. Patent and Trademark Office issued U.S. Patent 10,174,321 and in May 2019 the European Patent Office issued EP 3237618, both with granted claims that cover the RNA constructs specifically designed to target exon1 and the embedding of these Huntington's disease RNA sequences into the miR451 scaffold, which we exclusively license from CSHL. The claims also cover certain expression cassettes comprising the RNA constructs and the use of gene therapy vectors including AAV vectors encompassing the described expression cassettes.

In February 2019, we presented new preclinical data at the 14th Annual CHDI Huntington's disease Therapeutics Conference that illustrated the therapeutic potential of AMT-130 to restore the function of damaged brain cells in Huntington's disease and provide a sustained reduction of mutant huntingtin protein.

Preclinical programs

In November 2018, we announced the expansion of our research pipeline with novel AAV gene therapy approaches to treating hemophilia A, Fabry disease and Spinocerebellar Ataxia Type 3.

Hemophilia A program (AMT-180)

AMT-180 is our novel hemophilia A gene therapy that we believe has the potential to treat all hemophilia A patients including those with past and current inhibitors. Approximately 30% of patients with severe hemophilia A will develop an inhibitor that neutralizes the infused Factor VIII activity. This patient population has in the past been excluded from gene therapy approaches in clinical development.

AMT-180 utilizes an AAV vector incorporating a proprietary, exclusively licensed, modified FIX gene that has been demonstrated in preclinical studies to convey Factor VIII-independent activity and circumvent inhibitors to Factor VIII. In May 2019, we presented preclinical proof-of-concept data at the ASGCT Annual Meeting, demonstrating that AMT-180 induced thrombin activation, and up to 29% of Factor VIII-independent activity, in FVIII-depleted human plasma. The studies further demonstrated that a single intravenous administration of AMT-180 resulted in sustained, dose-dependent hemostatic effect as measured by one-stage clotting assay, and that AMT-180 shows activation kinetics similar to native FIX and is not hyperactive. A pilot study in non-human primates demonstrated that administration of AMT-180 resulted in sufficient FIX protein expression that may translate to Factor VIII-independent activity in humans. No elevation of coagulation activation markers or signs of thrombi formation were observed.

We are currently conducting safety and toxicology studies of AMT-180 to support the submission of a clinical trial application in 2020.

Spinocerebellar Ataxia Type 3 program (AMT-150)

AMT-150 is our novel gene therapy candidate for the treatment of SCA3, also known as Machado-Joseph disease, which is caused by a CAG-repeat expansion in the ATXN3 gene that results in an abnormal form of the protein ataxin-3. At the 2019 American Academy of Neurology Annual Meeting, we presented preclinical data on AMT-150 demonstrating mechanistic proof-of-concept of the non-allele-specific ataxin-3 protein-silencing approach by using artificial miRNA candidates engineered to target the ataxin-3 gene in a SCA3 knock-in mouse model. In this proof-of-concept study, a single AMT-150 injection in the cerebrospinal fluid resulted in AAV transduction and mutant ataxin-3 lowering at the primary sites of disease neuropathology, the cerebellum (up to 53%) and the brainstem (up to 65%).

We are currently preparing to initiate safety and toxicology studies of AMT-150 to support the submission of an IND application.

Fabry disease program (AMT-190)

AMT-190 is our novel gene therapy candidate for the treatment of Fabry disease that comprises of an AAV vector incorporating a proprietary, exclusively licensed, ModNAGA variant. ModNAGA may have several advantages over other therapies for Fabry disease, including higher stability in blood, circumvention of inhibitors, better biodistribution in the target organs, secondary toxic metabolite reduction and improved cross-correction of neighboring cells.

At the ASGCT Annual Meeting in May 2019, we presented data from in vitro and in vivo studies showing that AMT-190 has the potential to become a one-time treatment option that could be an improvement upon the enzyme replacement standard of care with more efficient uptake in the kidney and heart and an improved immunogenicity profile. In particular, data from a study in wild-type mice showed a single intravenous administration of AMT-190 resulted in a ten- to twenty-fold higher alpha-galactosidase ("GLA") activity in the plasma compared to the control group. Additionally, in a study in a diseased mouse model, GLA activity significantly increased in plasma, and globotriaosylsphingosine ("Lyso-Gb3") was significantly reduced in target organs after a single dose of AMT-190. Based on the results of these in silico and in vitro studies, the modifications introduced into NAGA appear to pose a very low immunogenicity risk.

We are currently conducting additional preclinical studies to identify a lead candidate for further safety testing.

BMS collaboration

We entered into a collaboration and license agreement with BMS in May 2015. We have been supporting BMS in the discovery, non-clinical, analytical and process development efforts of Collaboration Targets. For any Collaboration Targets that are advanced, we will be responsible for manufacturing of clinical and commercial supplies using our vector technologies and industrial, proprietary insect-cell based manufacturing platform. BMS has been reimbursing us for all our research and development costs in support of the collaboration during the initial research term. BMS will lead the development, regulatory and commercial activities for all four currently active Collaboration Targets as well as additional Collaboration Targets that may be advanced.

In February 2019, BMS requested a one-year extension of the research term. In April 2019, following an assessment of the progress of this collaboration and our expanding proprietary programs, we notified BMS that we did not intend to agree to an extension of the research term. Accordingly, the initial four-year research term under the collaboration terminated on May 21, 2019. We are currently in discussions with BMS potentially to restructure or amend the collaboration and license agreement and other related agreements following the expiration of the research term. Although such discussions are ongoing and may not result in any change to these arrangements, we believe that the final resolution of these discussions may result in material changes to our collaboration with BMS.

Padua mutation in human Factor IX patent family

We own a patent family, including patents and patent applications, directed to the use of the Padua mutation in human FIX for gene therapy. A patent cooperation treaty application was filed on September 15, 2009, and patents have been issued in the United States, Europe, and Canada. Further applications are pending in the United States, Europe, and Hong Kong. The issued patents include claims directed to FIX protein with a leucine at the R338 position of the protein sequence, nucleic acid sequences coding for this protein, and therapeutic applications, including gene therapy. The standard 20-year patent term of patents in this family will expire in 2029.

On November 5, 2019, the USPTO granted us a third patent, U.S. Patent Number 10,465,180, which covers any AAV comprising a nucleic acid encoding a FIX-Padua protein, and promoter sequences, transcription termination and control elements. The claims also cover FIX-Padua variants with at least 70% sequence identity to FIX-R338L.

On June 13, 2018, we were granted European Patent 2337849 directed to a FIX polypeptide protein. The opposition period with respect to such patent expired on March 13, 2019, by which time five parties had filed an opposition. On July 25, 2019, we submitted responses to such oppositions with the European Patent Office, or EPO, and expect that oral proceeding with respect to such oppositions will take place in June and July 2020. In addition, on May 15, 2019, a divisional European patent application in the FIX-Padua family, EP 3252157, was refused. In September 2019, we filed a notice of appeal with respect to such refusal. We are also pursuing a European divisional patent application that was filed on May 14, 2019.

On January 4, 2020, a petition seeking *Inter Partes Review* of the '405 Patent was filed by Pfizer, Inc. The petition seeks to invalidate claims 6 and 9-15 of the '405 Patent. We are in the process of responding to the petition.

Intellectual Property Portfolio in Manufacturing

We continue to strengthen the intellectual property related to our proprietary insect cell-based AAV manufacturing process. In May 2018, we announced that the USPTO granted U.S. Patent Number 9,840,694, which includes claims covering nanofiltration to selectively remove potential residual baculovirus from the product. We believe this nanofiltration step is important for product quality and safety and that nanofiltration generally may be required to comply with viral clearance standards established by global regulatory authorities. Related patents were previously granted in Europe, Japan and several other jurisdictions.

The 9,840,694 patent expands our intellectual property portfolio directed to large-scale manufacturing of AAV in insect cells using baculovirus vectors. Our portfolio includes multiple important molecular and process-related patents, as well as extensive know-how covering essential production, purification, and processing steps that are necessary for the large-scale insect cell-based manufacturing and for compliance with the regulatory authorities.

Technology and Manufacturing Platform Developments

In November 2018, we presented our miQURE™ gene silencing platform, which is designed to degrade disease-causing genes, without off-target toxicity, and induce silencing of the entire target organ through secondary exosome-mediated delivery. Gene therapy candidates designed with miQURE™ incorporate proprietary, therapeutic miRNA constructs that can be delivered using AAVs to potentially provide long-lasting activity. Preclinical studies of miQURE™-based gene therapies have demonstrated several important advantages, including enhanced tissue-specificity, improved nuclear and cytoplasmic gene lowering and no off-target effects associated with impact to the cellular miRNA or messenger RNA transcriptome. miQURE™ technology has been incorporated in AMT-130, our investigational gene therapy for Huntington's disease, and is expected to be applied to AMT-150 for SCA3.

In October 2018, we presented non-clinical data demonstrating that a next-generation synthetic promoter developed for liver-directed gene therapy is capable of generating up to a 40-fold increase in expression compared to a reference promoter. A "promoter" is an essential component of a gene therapy construct that controls expression of a therapeutic protein. Most gene therapies incorporate natural promoters, which have limitations and may not optimize the expression of genes in specific target cells. Consequently, natural promoters may not be appropriate for gene therapies that require higher levels of gene expression and tissue specificity. The new promoter may enable us to tailor expression levels required for a specific therapeutic transgene.

Also, in October 2018, we presented new data demonstrating the ability to manufacture gene therapies using a 500-liter single-use, stirred tank reactor that has the potential to significantly increase manufacturing capacity and enhance scalability. We produce our AAV-based gene therapies in our state-of-the-art, Lexington-based manufacturing facility using a proprietary baculovirus expression vector system.

Financing

On September 10, 2019, we completed a follow-on public offering of 4,891,305 ordinary shares at a public offering price of $46.00 per ordinary share, and on September 13, 2019, we completed the sale of an additional 733,695 ordinary shares at a public offering price of $46.00 per ordinary share pursuant to the exercise by the underwriters of the option to purchase additional ordinary shares, resulting in total gross proceeds to us of $258.8 million. The net proceeds from this offering were $242.7 million, after deducting underwriting discounts and commissions and other offering expenses payable by us. We deducted $0.6 million of expenses incurred related to this offering from additional paid-in capital in the accompanying consolidated balance sheets and reflected this within the proceeds from public offering of shares, net of issuance costs within the cash flows from financing activities.

Manufacturing Facility

In November 2018, we entered into an amendment to the lease on our facility in Lexington, Massachusetts. Pursuant to the terms of the original lease, we leased approximately 53,343 rentable square feet for a term through April 30, 2024. Pursuant to the amended lease, we have leased approximately 30,655 additional square feet of contiguous space for a term that commenced on June 1, 2019 and runs through June 30, 2029. Additionally, we extended the term of the lease of the original space through June 2029. The amended lease provides for an aggregate of $15.8 million of rent for the expansion space and $25.8 million of rent for the original space over the extended term. The amended lease provides for an additional contribution from the landlord of $1.5 million, which may be used for alterations to the entire premises for a period of 18 months from the commencement of the term on the expansion space. We have two options to renew the amended lease for terms of five years each, as well as a right of first offer to lease any of the remaining approximately 20,000 square feet of space in the same building, if that space becomes available for rent.

Leadership

In August 2019, we promoted Sander van Deventer, M.D., Ph.D., to Executive Vice President, Research and Product Development, and Alex Kuta, Ph.D., to Executive Vice President, Operations. Dr. van Deventer, in addition to his responsibilities to being responsible for research, will now also be responsible for our product development. Dr. Kuta, in addition to regulatory affairs, will now also be responsible for global quality as well as GMP manufacturing at our state-of-the-art facility in Lexington, Massachusetts. As a result of these changes, we eliminated the Chief Operating Officer role, and Scott McMillan, Ph.D. retired.

Related Party Transaction

In August 2019, we entered into an Amended CLA as well as an additional New CLA with our related party 4DMT. In the Amended CLA, we received from 4DMT an exclusive, sublicensable, worldwide license under certain 4DMT intellectual property rights to research, develop, make, use, and commercialize previously selected AAV capsid variants and certain associated products using 4DMT proprietary AAV technology for delivery of gene therapy constructs to cells in the Field. In the New CLA, the parties agreed to research and develop, at 4DMT's cost, new AAV capsid variants using 4DMT proprietary AAV technology for delivery of up to six additional transgene constructs in the Field that will be selected by us.

2019 Financial Highlights

Key components of our results of operations include the following:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Total revenues	$ 7,281	$ 11,284	$ 13,107
Research and development expenses	(94,737)	(74,809)	(72,172)
Selling, general and administrative expenses	(33,544)	(25,305)	(24,635)
Net loss	(124,201)	(83,304)	(79,260)

As of December 31, 2019, we had cash and cash equivalents of $377.8 million (December 31, 2018: $234.9 million). We had a net loss of $124.2 million in 2019, $83.3 million in 2018 and $79.3 million in 2017. As of December 31, 2019, we had an accumulated deficit of $659.7 million (December 31, 2018: $535.5 million). We anticipate that our loss from operations will increase in the future as we:

- Build-out our commercial infrastructure and seek marketing approval for any product candidates (including etranacogene dezaparvovec) that successfully complete clinical trials;
- Advance the clinical development of AMT-130 for our Huntington's disease gene therapy program;
- Continue to build-out our clinical, medical and regulatory capabilities;
- Advance multiple research programs related to gene therapy candidates targeting liver-directed and CNS diseases;
- Continue to expand, enhance and optimize our technology platform, including our manufacturing capabilities, next-generation viral vectors and promoters, and other enabling technologies;
- Acquire or in-license rights to new therapeutic targets or product candidates; and
- Maintain, expand and protect our intellectual property portfolio, including in-licensing additional intellectual property rights from third parties.

See "Results of Operations" below for a discussion of the detailed components and analysis of the amounts above.

Critical Accounting Policies and Estimates

In preparing our consolidated financial statements in accordance with U.S. GAAP and pursuant to the rules and regulations promulgated by the Securities and Exchange Commission ("SEC") we make assumptions, judgments and estimates that can have a significant impact on our net income/loss and affect the reported amounts of certain assets, liabilities, revenue and expenses, and related disclosures. On an ongoing basis, we evaluate our estimates and judgments, including those related to the implementation of ASC 842 Leases, recognition of License Revenue in accordance with ASC 606, BMS warrants, share-based payments and corporate income taxes related to valuation allowance. We base our assumptions, judgments and estimates on historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not clear from other sources. Actual results may differ from these estimates under different assumptions or conditions. In making estimates and judgments, management employs critical accounting policies. We also discuss our critical accounting policies and estimates with the Audit Committee of our Board of Directors.

We believe that the assumptions, judgments and estimates involved in the recognition of License Revenue in accordance with ASC 606, BMS warrants, share-based payments, corporate income taxes related to valuation allowance and accounting for operating leases under ASC 842 to be our critical accounting policies. Historically, our assumptions, judgments and estimates relative to our critical accounting policies have not differed materially from actual results.

Adoption of ASC 842 Leases on January 1, 2019

On January 1, 2019, we adopted ASC 842, "Leases (Topic 842)". We adopted the standard using the modified retrospective approach with an effective date as of the beginning of the fiscal year, January 1, 2019, to operating leases that existed on that date. Prior year comparative financial information was not recast under the new standard and continues to be presented under ASC 840. We elected to utilize the package of practical expedients available for expired or existing contracts which allowed us to carryforward historical assessments of (1) whether contracts are or contain leases, (2) lease classification, and (3) initial direct costs. We performed an assessment and identified the lease facilities as material leases to be accounted for under ASC 842 as of January 1, 2019. The impact of implementing ASC 842 is summarized below:

- Recognized a $19.0 million operating right-of-use asset and a $28.1 million operating lease liability in relation to the facilities leased at the Amsterdam and Lexington sites in the Consolidated balance sheet as of January 1, 2019;
- Presented deferred rent of $9.1 million as of December 31, 2018, as a reduction of the right-of-use asset as from January 1, 2019 onwards in the Consolidated balance sheet and as a change within operating cash flows within accrued expense, other liabilities and operating leases;

We measured the lease liability at the present value of the future lease payments as of January 1, 2019. We used an incremental borrowing rate to discount the lease payments. We derived the discount rate, adjusted for differences such as in the term and payment patterns, from our Hercules loan which was refinanced immediately prior to the January 1, 2019 adoption date in December 2018. We valued the right-of-use asset at the amount of the lease liability reduced by the remaining December 31, 2018 balance of lease incentives received. We subsequently measure the lease liability at the present value of the future lease payments as of the reporting date with a corresponding adjustment to the right-to-use asset. Absent a lease modification we will continue to utilize the January 1, 2019, incremental borrowing rate.

We will continue to recognize lease cost on a straight-line basis and will continue to present these costs as operating expenses within our Consolidated statements of operations and comprehensive loss. We will continue to present lease payments and landlord incentive payments within cash flows from operations within our Consolidated statements of cash flows.

Adoption of ASC 606 revenue recognition on January 1, 2018

On January 1, 2018 we adopted new revenue recognition policies in accordance with ASC 606. The new revenue recognition policies replace the existing policies in accordance with ASC 605. We elected to implement ASC 606 by applying it to active collaboration arrangements as of January 1, 2018 and to record a cumulative adjustment of revenue previously recognized to our accumulated loss as of December 31, 2017. The impact of implementing ASC 606 is summarized below:

- Recognized $7.5 million of license revenue during the twelve months ended December 31, 2018, related to the collaboration with BMS compared to $4.2 million that would have been recognized in accordance with the previous revenue recognition policies;
- Continued to present revenue recognized during the twelve months ended December 31, 2017, in accordance with the previous revenue recognition policies;
- Decreased the accumulated loss by $24.9 million as of January 1, 2018 and decreased deferred revenue as of the same date by $24.9 million.

In accordance with the previous revenue recognition policies we had concluded that the BMS collaboration agreement consisted of three performance obligations, (i) technology (license and target selections), know-how and manufacturing in the field of gene therapy and development and active contribution to the development through the joint steering committee participations, (ii) provision of employees, goods and services for research, and (iii) clinical and commercial manufacturing. We determined that these three performance obligations are substantially identical with the performance obligations in accordance with our new revenue recognition policies:

(i) Providing access to our technology and know-how in the field of gene therapy as well as actively contributing to the target selection, the collaboration as a whole, the development during the target selection, the pre-clinical and the clinical phase through participating in joint steering committee and other governing bodies (“License Revenue”);

(ii) Providing pre-clinical research activities (“Collaboration Revenue”); and

(iii) Providing clinical and commercial manufacturing services for products (“Manufacturing Revenue”).

License Revenue

We generate license revenue from a $60.1 million upfront payment recorded on May 21, 2015, as well as $15.0 million received in relation to the designation of the second, third and fourth collaboration target in August 2015. We are also entitled to an aggregate $16.5 million in target designation payments upon the selection of the fifth to tenth collaboration target. We will also be eligible to receive research, development and regulatory milestone payments of up to $254.0 million for a lead candidate target (which has been AMT-126) and up to $217.0 million for each of the other selected targets, if milestones are achieved. We will include the variable consideration related to the selection of the fifth to tenth collaboration target, or any of the milestones, in the transaction price once it is considered probable that including these payments in the transaction price would not result in the reversal of cumulative revenue recognized. We might recognize significant amounts of License Revenue for services performed in prior periods if and when we consider this probable. Due to the significant uncertainty surrounding the development of gene-therapy product candidates and the dependence on BMS’s performance and decisions we so far did not consider this probable.

Additionally, we are eligible to receive net sales-based milestone payments and tiered mid-single to low double-digit royalties on product sales. The royalty term is determined on a licensed-product-by-licensed-product and country-by-country basis and begins on the first commercial sale of a licensed product in a country and ends on the expiration of the last to expire of specified patents or regulatory exclusivity covering such licensed product in such country or, with a customary royalty reduction, ten years after such first commercial sale if there is no such exclusivity. These revenues will be recognized when performance obligations are satisfied.

Under the previous revenue standard, we recognized License Revenue over the expected performance period on a straight-line basis commencing on May 21, 2015. In accordance with the new revenue recognition standards, we recognize License Revenue over the expected performance period based on our measure of progress towards the completion of certain activities related to our services. We determine such progress by comparing activities performed at the end of each reporting period with total activities expected to be performed. We estimate total expected activities using a number of unobservable inputs, such as the probability of BMS designating additional targets, the probability of successfully completing each phase and estimated time required to provide services during the various development stages. If available, we use product candidate-specific research and development plans. Alternatively, we assume that completion of the pre-clinical phase requires an average of four years and that clinical development and commercial launch on average require 8.5 years to complete.

The estimation of total services at the end of each reporting period involves considerable judgement. The estimated number of product candidates that BMS will pursue, significantly impacts the amount of License Revenue we recognize. For example, if we would increase the probability of all additional targets being designated by 10% then the revenue for the twelve months ended December 31, 2019 would have decreased by approximately $1.9 million to $3.1 million, as we would be required to render more services in relation to the consideration received.

Collaboration and Manufacturing Revenue

The adoption of the new revenue recognition policies did not materially impact the recognition of Collaboration or Manufacturing Revenue.

We continue to recognize Collaboration Revenues associated with pre-clinical Collaboration Target specific, non-clinical, analytical and process development activities that are reimbursable by BMS under our collaboration agreement during the initial research term (that ended on May 21, 2019). We are currently in discussions with BMS potentially to restructure or amend the collaboration and license agreement and other related agreements following the expiration of the research term. During these discussions, which may be terminated by us or BMS at any time, we have agreed to continue providing support of the pre-clinical Collaboration Targets, and any related costs will be reimbursed by BMS.

BMS warrants

Pursuant to the BMS CLA, we granted BMS two warrants:

- A warrant allowing BMS to purchase a specific number of our ordinary shares such that its ownership will equal 14.9% immediately after such purchase. The warrant can be exercised on the later of (i) the date on which we receive from BMS the Target Designation Fees (as defined in the BMS CLA) associated with the first six new targets (a total of seven Collaboration Targets); and (ii) the date on which BMS designates the sixth new target (the seventh Collaboration Target).
- A warrant allowing BMS to purchase a specific number of our ordinary shares such that its ownership will equal 19.9% immediately after such purchase. The warrant can be exercised on the later of (i) the date on which we receive from BMS the Target Designation Fees associated with the first nine new targets (a total of ten Collaboration Targets); and (ii) the date on which BMS designates the ninth new target (the tenth Collaboration Target).

As of December 31, 2019, BMS had designated a total of four Collaboration Targets, and as such, the warrants were not exercisable.

Pursuant to the terms of the BMS CLA, the exercise price in respect of each warrant is equal to the greater of (i) the product of (A) $33.84, and (B) a compounded annual growth rate of 10% (or approximately $52.39 as of December 31, 2019) and (ii) the product of (A) 1.10, and (B) the VWAP for the 20 trading days ending on the date that is five trading days prior to the date of a notice of exercise delivered by BMS.

For fair value measurement, we applied a Monte-Carlo simulation. The valuation model incorporates several inputs, including the underlying share price the reporting date, the risk free rate adjusted for the period affected, an expected volatility based on our historical volatility, the expected yield on any dividends, and management's expectations on the timelines of reaching certain defined trigger events for the exercising of the warrants, as well as our expectations regarding the number of ordinary shares that would be issued upon exercise of the warrants. Additionally, the model assumes BMS will exercise the warrants only if it is financially rational to do so. Given the nature of these input parameters, we have classified the analysis as a level 3 valuation.

The estimated annualized volatility for fair value measurement is 72.5% as of December 31, 2019 (December 31, 2018: 75%) for the warrants.

The Company conducted a sensitivity analysis to assess the impact on changes in assumptions on the fair value. Specifically, the Company examined the impact on the fair market value of the warrants by increasing the volatility by 10% to 82.5%. A further sensitivity analysis was performed assuming the warrants would be exercised a year later than currently estimated. The table below illustrates the impact on the fair market valuation associated with these changes in assumptions as of December 31, 2019.

	Total warrants in thousands
Base case	$ 3,075
Increase volatility by 10% to 82.5%	680
Extend exercise dates by one year	(31)

Share-based payments

We issue share-based compensation awards, in the form of options to purchase ordinary shares, restricted share units and performance share units, to certain of our employees, executive and non-executive board members, and consultants. We measure share-based compensation expense related to these awards by reference to the estimated fair value of the award at the date of grant. The awards are subject to service and/or performance-based vesting conditions. The total amount of the awards is expensed on a straight-line basis over the requisite vesting period.

We use a Hull & White option model to determine the fair value of option awards. The model captures early exercises by assuming that the likelihood of exercise will increase when the share-price reaches defined multiples of the strike price. This analysis is made over the full contractual term.

At each balance sheet date, we revise our estimate of the number of options that are expected to become exercisable. We recognize the impact of the revision of original estimates, if any, in the statements of operations and comprehensive loss and a corresponding adjustment to equity. We expect all vested options to be exercised over the remainder of their contractual life. We consider the expected life of the options to be in line with the average remaining term of the options post vesting.

We account for share options as an expense in the statements of operations and comprehensive loss over the estimated vesting period, with a corresponding contribution to equity, as they are all equity-classified.

Corporate income taxes

We are subject to corporate taxes in the Netherlands and the United States of America. Significant judgment is required in determining the valuation allowance in relation to our net operating loss carry forwards. We have been incurring net operating losses in accordance with the respective corporate tax laws in almost all years since we founded our business. As of December 31, 2019, the total amount of tax losses carried forward under the Dutch tax regime was $414.0 million and $46.7 million in the United States of America. We believe that there is insufficient positive evidence of sufficient taxable profits available to us, including the implementation of possible and feasible tax strategies, to overcome the negative evidence of our loss-making history. We have therefore recorded a $109.9 million valuation allowance and have not recorded a net deferred tax asset in our Consolidated Balance Sheet.

Recent Accounting Pronouncements

ASC 842 - Leases (Topic 842)

In February 2016, the FASB issued ASU 2016-02, “Leases (Topic 842)”. In July 2018, the FASB issued ASU No. 2018-10, “Codification Improvements to Topic 842, Leases” (ASU 2018-10), which provides narrow amendments to clarify how to apply certain aspects of the new lease standard, and ASU No. 2018-11, “Leases (Topic 842) – Target Improvements” (ASU 2018-11), which address implementation issues related to the new lease standard. The standard is effective for interim and annual reporting periods beginning after December 15, 2018. Under the new standard, lessees are required to recognize the right-of-use assets and lease liabilities that arise from operating leases on the Consolidated balance sheet. We adopted the standard using the modified retrospective approach with an effective date as of the beginning of our fiscal year, January 1, 2019, to operating leases that existed on that date. Prior year comparative financial information was not recast under the new standard and continues to be presented under ASC 840.

ASU 2014-09: ASC 606 Revenue from Contracts with Customers

Effective January 1, 2018 we adopted new revenue recognition policies in accordance with ASC 606. The new revenue recognition policies replace the existing policies in accordance with ASC 605. We elected to implement ASC 606 by applying it to active collaboration arrangements as of January 1, 2018 and to record a cumulative adjustment of revenue previously recognized to the accumulated loss as of December 31, 2017.

ASU 2016-01: ASC 825 Recognition and Measurement of Financial Assets and Financial Liabilities

In January 2016, the FASB issued ASU 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities (“ASU 2016-01”). ASU 2016-01 addresses certain aspects of recognition, measurement, presentation and disclosure of financial instruments. ASU 2016-01 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2017, which for the Company is January 1, 2018. ASU 2016-01 did not have a material impact on our consolidated financial statements.

ASU 2016-05: Derivatives and Hedging: Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships

In March 2016, the FASB issued ASU 2016-05, Derivatives and Hedging: Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships (“ASU 2016-05”) and ASU 2016-06, Derivatives and Hedging: Contingent Put and Call Options in Debt Instruments. Both ASUs address issues regarding hedge accounting. The ASUs are effective for fiscal years, and interim periods within those years, beginning after December 15, 2017, which for the Company is January 1, 2018. Neither ASU 2016-05 nor ASU 2016-06 had a material impact on our consolidated financial statements.

ASU 2017-09: Compensation (topic 718)- scope of modification accounting

In May 2017, the FASB issued ASU 2017-09, Compensation-stock compensation (topic 718)- scope of modification accounting (“ASU 2017-09”), which provides clarity regarding the applicability of modification accounting in relation to share-based payment awards. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The effective date for the standard is for fiscal years beginning after December 15, 2017, which for the Company is January 1, 2018. Early adoption is permitted. The new standard is to be applied prospectively. ASU 2017-09 did not have a material impact on our consolidated financial statements.

ASU 2019-07: Codification Updates to SEC Sections

In July 2019, the FASB issued ASU 2019-07, Codification Updates to SEC Sections (“ASU 2019-07”), which provides amendments to SEC Paragraphs Pursuant to SEC Final Rule Releases No. 33-10532, Disclosure Update and Simplification, and Nos. 33-10231 and 33-10442, Investment Company Reporting Modernization, and Miscellaneous Updates. The effective date for the standard is upon issuance. ASU 2017-09 did not have a material impact on our consolidated financial statements.

Recent Accounting Pronouncements Not Yet Effective

ASU 2018-13: Fair Value Measurement

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820) which modifies the disclosure requirements on fair value measurements. The effective date for the standard is fiscal years beginning after December 15, 2019, which for us is January 1, 2020. Early adoption is permitted. The new disclosure requirements for changes in unrealized gains and losses in other comprehensive income for recurring Level 3 measurements, the range and weighted average of significant unobservable inputs and the amended requirements for the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively. We do not expect ASU 2018-13 to have a material impact on our consolidated financial statements except for the inclusion of potentially additional disclosures for Level 3 inputs.

Results of Operations

The following table presents a comparison of the twelve months ended December 31, 2019, 2018 and 2017.

	Year ended December 31,				
	2019	2018	2017	2019 vs 2018	2018 vs 2017
	(in thousands)				
Total revenues	$ 7,281	$ 11,284	$ 13,107	$ (4,003)	$ (1,823)
Operating expenses:					
Research and development expenses	(94,737)	(74,809)	(72,172)	(19,928)	(2,637)
Selling, general and administrative expenses	(33,544)	(25,305)	(24,635)	(8,239)	(670)
Total operating expenses	**(128,281)**	**(100,114)**	**(96,807)**	**(28,167)**	**(3,307)**
Other income	1,888	2,146	15,430	(258)	(13,284)
Other expense	(2,028)	(1,548)	(3,073)	(480)	1,525
Loss from operations	**(121,140)**	**(88,232)**	**(71,343)**	**(32,908)**	**(16,889)**
Non-operating items, net	(3,061)	5,159	(8,116)	(8,220)	13,275
Loss before income tax expense	**(124,201)**	**(83,073)**	**(79,459)**	**(41,128)**	**(3,614)**
Income tax expense	—	(231)	199	231	(430)
Net loss	**$ (124,201)**	**$ (83,304)**	**$ (79,260)**	**$ (40,897)**	**$ (4,044)**

Revenue

We recognize total collaboration revenues associated with development activities that are reimbursable by Chiesi (up to the July 2017 termination of the collaboration) and BMS under our respective collaboration agreements. In July 2017, we reacquired development and commercial rights in Europe and other select territories for our gene therapy in hemophilia B from Chiesi, our previous co-development partner. The BMS collaboration revenues are associated with pre-clinical Collaboration Target specific, non-clinical, analytical and process development activities that are reimbursable by BMS under our collaboration agreement during the initial research term (that ended on May 21, 2019). We are currently in discussions with BMS potentially to restructure or amend the collaboration and license agreement and other related agreements following the expiration of the research term. During these discussions, which may be terminated by us or BMS at any time, we have agreed to continue providing support of the pre-clinical Collaboration Targets, and any related costs will be reimbursed by BMS.

We recognize license revenues associated with the amortization of the non-refundable upfront payment, target designation fees and research and development milestone payments we received or might receive from BMS and, until June 2017, Chiesi. The timing of these cash payments may differ from the recognition of revenue, as revenue is deferred and recognized over the duration of the performance period. We recognize other revenue, such as sales milestone payments, when earned.

Our revenue for the years ended December 31, 2019, 2018 and 2017 was as follows:

	Year ended December 31,				
	2019	2018	2017	2019 vs 2018	2018 vs 2017
	in thousands				
License revenue	$ 4,988	$ 7,528	$ 4,129	$ (2,540)	$ 3,399
Collaboration revenue	2,293	3,756	4,340	(1,463)	(584)
Collaboration revenue Chiesi	—	—	4,638	—	(4,638)
Total revenues	**$ 7,281**	**$ 11,284**	**$ 13,107**	**$ (4,003)**	**$ (1,823)**

We recognized $5.0 million and $7.5 million of BMS license revenue for the year ended December 31, 2019 and 2018, respectively, in accordance with our new revenue recognition policies we adopted effective January 1, 2018. We recognized $4.1 million of license revenue for the year ended December 31, 2017 in accordance with our previous revenue recognition policies.

Following the termination of our collaboration with Chiesi in July 2017, we no longer recognize license revenue in association with the upfront fees received in 2013. We recognized $0.0 million license revenue from Chiesi during the year ended December 31, 2017. We recognized our license revenue during the year ended December 31, 2017, net of a $0.5 million reduction for amounts previously amortized in relation to a $2.3 million up-front payment that we were required to repay in 2017 in accordance with the Glybera Termination Agreement.

Collaboration revenue generated during year ended December 31, 2019, from research activities associated with our BMS-partnered programs, was $2.3 million compared to $3.8 million and $4.3 million for the years ended December 31, 2018 and December 31, 2017, respectively. We have been providing research services to BMS since the May 2015 effective date of our collaboration. The initial four-year research term under the collaboration terminated on May 21, 2019. In February 2019, BMS requested a one-year extension of the research term. In April 2019, following an assessment of the progress of this collaboration and the Company's expanding proprietary programs, we notified BMS that we did not intend to agree to an extension of the research term but rather preferred to restructure the collaboration to reduce or eliminate certain of our obligations under it. During the aforementioned discussions with BMS potentially to restructure or amend the BMS CLA and other related agreements, which may be terminated by us or BMS at any time, we have agreed to continue providing support of the pre-clinical Collaboration Targets, and any related costs will be reimbursed by BMS.

Following the termination of our collaboration with Chiesi in July 2017, we no longer recognize collaboration revenue from our co-development of hemophilia B with Chiesi. We recognized $4.6 million collaboration revenue for the year ended December 31, 2017.

Research and development expenses

We expense research and development costs ("R&D") as incurred. Our R&D expenses generally consist of costs incurred for the development of our target candidates, which include:

- Employee-related expenses, including salaries, benefits, travel and share-based compensation expense;
- Costs incurred for laboratory research, preclinical and nonclinical studies, clinical trials, statistical analysis and report writing, and regulatory compliance costs incurred with clinical research organizations and other third-party vendors;
- Costs incurred to conduct consistency and comparability studies;
- Costs incurred for the validation of our Lexington facility;
- Costs incurred for the development and improvement of our manufacturing processes and methods;
- Costs associated with our research activities for our next-generation vector and promoter platform;
- Changes in the fair value of the contingent consideration related to our acquisition of InoCard (up to September 30, 2018) as well as the impairment of in process research and development acquired in the three-month period ended September 30, 2018;
- Facilities, depreciation and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance and other supplies; and

Our research and development expenses primarily consist of costs incurred for the research and development of our product candidates, which include:

- *Etranacogene dezaparvovec (hemophilia B)*. We have incurred costs related to the research, development and production of etranacogene dezaparvovec for the treatment of hemophilia B. In June 2018, we initiated a pivotal study. We completed enrollment of the lead-in phase of the pivotal study in September 2019. In September 2018, we completed patient dosing in our Phase IIb dose-confirmation study. Since we and Chiesi terminated our Hemophilia Collaboration Agreement in July 2017, all development expenses have been borne by us (previously Chiesi reimbursed us for 50% of such costs);
- *AMT-130 (Huntington's disease)*. We have incurred costs related to preclinical and nonclinical studies of AMT-130 and have been incurring costs related to our Phase I/II trial since February 2019;
- *Preclinical research programs*. We incur costs related to the research of multiple preclinical gene therapy product candidates with the potential to treat certain rare and other serious medical conditions; and
- *Technology platform development and other related research*. We incur significant research and development costs related to manufacturing and other enabling technologies that are applicable across all our programs.

Our research and development expenses may vary substantially from period to period based on the timing of our research and development activities, including manufacturing campaigns, regulatory submissions and enrollment of patients in clinical trials. The successful development of our product candidates is highly uncertain. Estimating the nature, timing or cost of the development of any of our product candidates involves considerable judgement due to numerous risks and uncertainties associated with developing gene therapies, including the uncertainty of:

- the scope, rate of progress and expense of our research and development activities;
- our ability to successfully manufacture and scale-up production;
- clinical trial protocols, speed of enrollment and resulting data;
- the effectiveness and safety of our product candidates;
- the timing of regulatory approvals; and
- our ability to agree to ongoing development budgets with collaborators who share the costs of our development programs.

A change in the outcome of any of these variables with respect to our product candidates that we may develop could mean a significant change in the expenses and timing associated with the development of such product candidate.

Research and development expenses for the year ended December 31, 2019 were $94.7 million, compared to $74.8 million and $72.2 million for the years ended December 31, 2018 and 2017, respectively. Other research and development expenses are separately classified in the table below. These are not allocated as they are deployed across multiple projects under development.

	Year ended December 31,				
	2019	2018	2017	2019 vs 2018	2018 vs 2017
	(in thousands)				
Hemophilia B (AMT-060/061)	$ 16,853	$ 8,677	$ 2,352	$ 8,176	$ 6,325
Huntington's disease (AMT-130)	4,126	5,862	3,922	(1,736)	1,940
Programs in preclinical development and platform related expenses	5,710	2,491	5,810	3,219	(3,319)
Total direct research and development expenses	**$ 26,689**	**$ 17,030**	**$ 12,084**	**$ 9,659**	**$ 4,946**
Employee and contractor-related expenses	34,030	28,948	28,072	5,082	876
Share-based compensation expense	8,094	3,968	3,945	4,126	23
Facility expenses	15,181	12,961	14,380	2,220	(1,419)
Termination benefits	—	96	1,763	(96)	(1,667)
Changes in fair value of contingent consideration	—	(3,800)	3,000	3,800	(6,800)
Impairment loss in process research and development asset	—	5,499	—	(5,499)	5,499
Disposables	8,765	9,461	8,550	(696)	911
Other expenses	1,978	646	378	1,332	268
Total other research and development expenses	**$ 68,048**	**$ 57,779**	**$ 60,088**	**$ 10,269**	**$ (2,309)**
Total research and development expenses	**$ 94,737**	**$ 74,809**	**$ 72,172**	**$ 19,928**	**$ 2,637**

Direct research and development expenses

Hemophilia B (AMT-060/061)

In the years ended December 31, 2018 and 2019, our external costs for our hemophilia B program were primarily related to the planning and execution of our Phase III and Phase IIb clinical trials. Regarding the Phase III pivotal trial, the first patient was enrolled into the lead-in phase in June 2018 and dosed in January 2019. In September 2019, we completed enrollment of approximately 60 patients in the lead-in phase of the trial. Our Phase IIb dose-confirmation study was initiated in January 2018 and dosing occurred in July and August 2018.

In 2017 and early 2018, we incurred costs related to bridging studies to demonstrate the comparability of our first-generation product candidate for the treatment of Hemophilia B (AMT-060) with our current product candidate AMT-061. In addition, we continue to incur cost for the long-term follow-up of patients we dosed as part of our Phase I/II clinical trial of AMT-060 in 2015 and 2016.

Huntington disease (AMT-130)

In the year ended December 31, 2019, our external costs for the development of Huntington's disease were primarily related to the preparation of our Phase I/II clinical trial. During 2018 and 2017, the majority of costs were related to the planning and execution of a GLP toxicology study. In addition, we incurred cost related to the filing of our IND in late 2018 and early 2019. In the year ended December 31, 2017, we primarily incurred cost related to various preclinical research activities.

Preclinical programs & platform development

In the year ended December 31, 2019, we incurred $5.7 million of costs related to related to our preclinical activities for product candidates including Hemophilia A (AMT-180), SCA3 (AMT-150) and Fabry (AMT-190) and enhancement of our technology compared to $2.5 million in 2018 and $5.8 million in 2017

Other research & development expenses

- We incurred $34.0 million in employee and contractor expenses in the year ended December 31, 2019 compared to $28.9 million in 2018 and $28.1 million in 2017. Our cost increased in 2019 by $5.1 million primarily as a result of the recruitment of personnel to support the preclinical and clinical development of our product candidates. Our cost increased in 2018 by $0.8 million primarily because of new personnel added during the year in our manufacturing and development organizations;
- We incurred $8.1 million in share-based compensation expenses in the year ended December 31, 2019 compared to $4.0 million in 2018 and $3.9 million in 2017. The increase in 2019 compared to 2018 of $4.1 million was driven primarily by the appreciation of our share price and increase in number of grants;
- We incurred $15.2 million in operating expenses and depreciation expenses related to our rented facilities in the year ended December 31, 2019, compared to $13.0 million in 2018 and $14.4 million in 2017. The increase in 2019 compared to 2018 of $2.2 million primarily relates to extending and expanding (as of June 2019) the lease of our Lexington facility. The decrease in 2018 compared to 2017 of $1.4 million was largely the result of our decision to sublet part of our Amsterdam facility in 2018, as well as the costs incurred in 2017 from the termination of lease contracts associated with our former Amsterdam facilities;
- We recorded no expenses associated with termination benefits attributable to our November 2016 restructuring in 2019, compared to $0.1 million in 2018 and $1.8 million in 2017;
- We recorded no results related to a change in the fair value of the contingent consideration owed to the sellers of the InoCard business, compared to an income of $3.8 million in 2018 and compared to an expense of $3.0 million in 2017;
- We incurred no impairment losses in 2019, compared to an impairment loss of $5.4 million on the in-process research and development asset acquired in the InoCard business combination in 2018. We recorded no such charge in 2017; and
- We incurred $10.7 million in costs compared to $10.1 million in 2018 and $8.9 million in 2017 related to disposables that we consume to produce materials to conduct our pre-clinical and clinical trials and other expenses.

Selling, general and administrative expenses

Our general and administrative expenses consist principally of employee, office, consulting, legal and other professional and administrative expenses. We incur expenses associated with operating as a public company, including expenses for personnel, legal, accounting and audit fees, board of directors' costs, directors' and officers' liability insurance premiums, NASDAQ listing fees, expenses related to investor relations and fees related to business development and maintaining our patent and license portfolio. Our selling costs in 2019 include employee expenses as well as professional fees related to the preparation of a commercial launch of etranacogene dezaparvovec.

Selling, general and administrative expenses for the year ended December 31, 2019 were $33.5 million, compared to $25.3 million and $24.6 million for the years ended December 31, 2018 and 2017, respectively.

- We incurred $10.5 million in personnel and consulting expenses in 2019 compared to $8.9 million in 2018 and $8.4 million in 2017. The increase of $1.6 million in 2019 compared to 2018 was primarily driven by an increase in personnel and consulting related expenses to support our growth;
- We incurred $9.4 million of share-based compensation expenses in 2019 compared to $6.7 million in 2018 and $6.3 million in 2017. The increase in 2019 compared to 2018 of $2.7 million was primarily driven by the appreciation of our share price and increase in number of grants. The increase in 2018 compared to 2017 of $0.4 million is primarily related to the appreciation of our share price; and
- We incurred $6.0 million in professional fees in 2019 compared to $4.2 million in 2018 and $4.8 million in 2017. We regularly incur accounting, audit and legal fees associated with operating as a public company.

Other items, net

In 2019, we recognized $0.7 million in income related to payments received from European authorities to subsidize our research and development efforts in the Netherlands compared to $1.0 million in 2018 and $1.2 million in 2017.

In January 2018, we began recognizing other income from the subleasing of a portion of our Amsterdam facility. We present expenses related to such income as other expense.

Following the termination of our collaboration with Chiesi in July 2017, we recognized $13.8 million of income that was previously treated as deferred revenue. We recognized no such income in 2019 and 2018.

In 2017, we recognized other expense of $1.7 million related to our decision to not seek renewal of the marketing authorization for the Glybera program, as well as the termination of our collaboration agreements with Chiesi. We did not recognize any such expenses in 2019 or 2018.

In 2017, we accrued $0.6 million in contract termination costs related to vacated facilities at our Amsterdam site. We did not recognize any such expenses in 2019 or 2018.

In 2017, we accrued $0.8 million related to various exit activities conducted during the year. We did not recognize any such expenses in 2019 or 2018.

Other non-operating items, net

We recognize interest income associated with our cash and cash equivalents.

We hold monetary items and enter into transactions in foreign currencies, predominantly in euros and U.S. dollars. We recognize foreign exchange results related to changes in these foreign currencies.

We issued warrants to Hercules and lenders of a convertible loan in 2013 and to BMS in 2015. We recognize changes in the fair value of these warrants within other non-operating income / (expense). Following the exercise of the warrants by Hercules in February 2019 we no longer recognize changes in the fair value of these warrants within other non-operating (expense) / income.

Our non-operating items, net, for the years ended December 31, 2019, 2018 and 2017 were as follows:

	Year ended December 31,				
	2019	2018	2017	2019 vs 2018	2018 vs 2017
	(in thousands)				
Interest income	$ 3,547	$ 2,729	$ 117	$ 818	$ 2,612
Interest expense	(3,810)	(2,160)	(2,232)	(1,650)	72
Foreign currency (losses) / gains, net	(268)	4,382	(3,566)	(4,650)	7,948
Other non-operating (losses) / gains, net	(2,530)	208	(2,435)	(2,738)	2,643
Total non-operating income, net	**$ (3,061)**	**$ 5,159**	**$ (8,116)**	**$ (8,220)**	**$ 13,275**

We raised $85.3 million in October 2017, $138.4 million in our May 2018 and $242.7 million in our September 2019 public follow-on offering. The resulting increase in our cash on hand increased our interest income in the year ended December 31, 2019 to $3.5 million compared to $2.7 million in 2018 and $0.1 million in 2017.

In 2019, we recognized a net foreign currency loss of $0.3 million related to our borrowings from Hercules and our cash and cash equivalents, compared to a net gain of $4.4 million in 2018 and a net loss of $3.6 million in 2017.

In 2019, we recognized a $2.5 million loss related to fair value changes of warrants, compared to a gain of $0.2 million in 2018 and a loss of $2.2 million in 2017. The loss is primarily driven by the increase in fair value of the BMS warrants.

Financial Position, Liquidity and Capital Resources

As of December 31, 2019, we had cash, cash equivalents and restricted cash of $380.7 million. We currently expect that our cash and cash equivalents will be sufficient to fund operations into mid-2022. The table below summarizes our consolidated cash flow data for the years ended December 31:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Cash, cash equivalents and restricted cash at the beginning of the period	$ 237,342	$ 161,851	$ 134,324
Net cash used in operating activities	(98,684)	(76,037)	(64,270)
Net cash used in investing activities	(6,647)	(4,245)	(5,583)
Net cash generated from financing activities	248,821	157,961	90,074
Foreign exchange impact	(106)	(2,187)	7,306
Cash, cash equivalents and restricted cash at the end of period	**$ 380,726**	**$ 237,342**	**$ 161,851**

We have incurred losses and cumulative negative cash flows from operations since our business was founded by our predecessor entity AMT Therapeutics Holding N.V. (“AMT”) in 1998. We had a net loss of $124.2 million in 2019, $83.3 million in 2018, and $79.3 million in 2017. As of December 31, 2019, we had an accumulated deficit of $659.7 million.

Sources of liquidity

From our first institutional venture capital financing in 2006 through 2019, we funded our operations primarily through private placements and public offerings of equity securities, convertible and other debt securities and to a lesser extent upfront, target designation or similar payments from our collaboration partners.

On September 10, 2019, we completed a follow-on public offering of 4,891,305 ordinary shares at a public offering price of $46.00 per ordinary share, and on September 13, 2019, we completed the sale of an additional 733,695 ordinary shares at a public offering price of $46.00 per ordinary share pursuant to the exercise by the underwriters of the option to purchase additional ordinary shares, resulting in total gross proceeds to us of $258.8 million. The net proceeds from this offering were $242.7 million, after deducting underwriting discounts and commissions and other offering expenses payable by us. We deducted $0.6 million of expenses incurred related to this offering from additional paid-in capital in the accompanying consolidated balance sheets and reflected this within the proceeds from public offering of shares, net of issuance costs within the cash flows from financing activities.

On December 6, 2018, we signed an amendment to the Second Amended and Restated Loan and Security Agreement (the "2018 Amended Facility") that both refinanced our existing $20 million credit facility and provided us with an additional commitment of $30 million (of which $15 million is subject to the discretion of Hercules). At signing, we drew down an additional $15 million, for a total outstanding amount of $35 million. We have the right to draw another $15 million through June 30, 2020 subject to the terms of the 2018 Amended Facility.

The 2018 Amended Facility extends the loan's maturity date until June 1, 2023. The interest-only period was initially extended from November 2018 to January 1, 2021. The interest-only period was further extended to January 1, 2022 as a result of meeting the provision in the 2018 Amended Facility of raising more than $90.0 million in equity financing. We met this provision as a result of the follow-on public offering completed in September 2019. As of December 31, 2019, $35 million was outstanding under the 2018 Amended Facility (2018: $35 million). We are required to repay the facility in equal monthly installments of principal and interest between the end of the interest-only period and the maturity date. The variable interest rate is equal to the greater of (i) 8.85% or (ii) 8.85% plus the prime rate less 5.50%. Under the 2018 Amended Facility, we paid a facility fee equal to 0.50% of the $35,000,000 loan outstanding and will owe a back-end fee of 4.95% of the outstanding debt.

On May 7, 2018, we completed a follow-on public offering of 5,175,000 ordinary shares at a public offering price of $28.50 per ordinary share, resulting in gross proceeds to us of $147.5 million. The net proceeds from this offering were $138.4 million, after deducting underwriting discounts and commissions and other offering expenses payable by us. We deducted $0.2 million of expenses incurred related to this offering from additional paid-in capital in the accompanying consolidated balance sheet and reflected this within the proceeds from public offering of shares, net of issuance costs with the cash flows from financing activities.

On October 27, 2017, we completed a follow-on public offering of 5,000,000 ordinary shares at a public offering price of $18.25 per ordinary share, resulting in gross proceeds to us of $91.3 million. The net proceeds from this offering were $85.3 million, after deducting underwriting discounts and commissions and other offering expenses payable by us. We deducted $0.5 million of expenses incurred related to this offering from additional paid-in capital in the accompanying consolidated balance sheet and reflected this within the proceeds from public offering of shares, net of issuance costs with the cash flows from financing activities.

We expect to continue to incur losses and to generate negative cash flows. We have no firm sources of additional funding. Until such time, if ever, as we can generate substantial cash flows from successfully commercializing our product candidates, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and marketing, distribution and licensing arrangements.

We are subject to covenants under our 2018 Amended Facility and may become subject to covenants under any future indebtedness that could limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, which could adversely impact our ability to conduct our business. In addition, our pledge of assets as collateral to secure our obligations under the 2018 Amended Facility may limit our ability to obtain debt financing. To the extent we need to finance our cash needs through equity offerings or debt financings, such financing may be subject to unfavorable terms including without limitation, the negotiation and execution of definitive

documentation, as well as credit and debt market conditions, and we may not be able to obtain such financing on terms acceptable to us or at all. If financing is not available when needed, including through debt or equity financings, or is available only on unfavorable terms, we may be unable to meet our cash needs. If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves, which could have a material adverse effect on our business, financial conditions, results of operations and cash flows.

Net Cash used in operating activities

Net cash used in operating activities was $98.7 million for the annual period ended December 31, 2019, and consisted of a net loss of $124.2 million adjusted for non-cash items, including depreciation and amortization expense of $6.7 million, share-based compensation expense of $17.5 million, fair value loss of derivative financial instruments of $2.5 million, unrealized foreign exchange loss of $0.9 million, and a decrease in unamortized deferred revenue of $5.0 million. Net cash used in operating activities also included changes in operating assets and liabilities of $2.9 million. These changes primarily related to a net increase in accounts receivable and accrued income, prepaid expenses and other current assets of $4.8 million and a net increase in accounts payable, accrued expenses, other liabilities and operating leases of $7.7 million primarily related to our etranacogene dezaparvovec and AMT-130 clinical trials.

Net cash used in operating activities was $76.0 million for the annual period ended December 31, 2018, and consisted of a net loss of $83.3 million adjusted for non-cash items, including depreciation and amortization expense of $12.4 million, share-based compensation expense of $10.7 million, fair value gain of derivative financial instruments and contingent consideration of $4.1 million, unrealized foreign exchange gain of $5.5 million, deferred tax of $0.2 million, a decrease in lease incentives of $0.3 million, and a decrease in unamortized deferred revenue of $8.5 million. Net cash used in operating activities also included changes in operating assets and liabilities of $2.3 million.

Net cash used in operating activities was $64.3 million for the annual period ended December 31, 2017, and consisted of a net loss of $79.3 million adjusted for non-cash items, including depreciation and amortization expense of $7.5 million, share-based compensation expense of $10.3 million, fair value loss of derivative financial instruments and contingent consideration of $5.2 million, unrealized foreign exchange loss of $4.2 million, deferred tax of $0.2 million, an increase in lease incentives of $2.2 million, and a decrease in unamortized deferred revenue of $21.1 million. Net cash used in operating activities also included changes in operating assets and liabilities of $6.4 million.

Net cash used in investing activities

In 2019, we used $6.6 million in our investing activities compared to $4.2 million in 2018 and $5.6 million in 2017.

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Build out of Lexington site	$ (4,164)	$ (1,596)	$ (1,426)
Build out of Amsterdam site	(1,487)	(788)	(3,035)
Acquisition of licenses and patents	(996)	(1,861)	(1,122)
Total investments	**$ (6,647)**	**$ (4,245)**	**$ (5,583)**

In 2019, we invested $4.2 million in our facility in Lexington compared to $1.6 million in 2018 and $1.4 million in 2017. Our investments in 2019 primarily relate to improvements we made to the additional space rented as from June 1, 2019.

In 2019, we invested $1.5 million in our facility in Amsterdam compared to $0.8 million in 2018 and $3.0 million in 2017.

Net cash generated from financing activities

We received net proceeds of $242.7 million associated with our public follow-on offering in September 2019, $138.4 million associated with our public follow-on offering in May 2018 and $85.3 million associated with our public follow-on offering in October 2017.

We received net proceeds of $0.5 million associated with the exercise of the Hercules warrants by Hercules in February 2019.

We received net proceeds of $14.8 million associated with the 2018 Amended Facility in December 2018.

In 2019, we received $5.6 million from the exercise of options to purchase ordinary shares issued in accordance with our share incentive plans, compared to $4.8 million in 2018 and $4.0 million in 2017.

In 2017, we paid $0.6 million contingent consideration in relation to our 2014 acquisition of the InoCard business. No such disbursements were made in 2019 and 2018.

Funding requirements

We believe our cash and cash equivalents as of December 31, 2019 will enable us to fund our operating expenses including our debt repayment obligations as they become due and capital expenditure requirements into mid-2022. Our future capital requirements will depend on many factors, including but not limited to:

- the cost and timing of future commercialization activities, including product manufacturing, marketing, sales and distribution of any of our product candidates for which we receive marketing approval in the future;
- the amount and timing of revenue, if any, we receive from commercial sales of any product candidates for which we, or any collaboration partner, receive marketing approval in the future;
- the scope, timing, results and costs of our current and planned clinical trials, including those for etranacogene dezaparvovec in hemophilia B and AMT-130 in Huntington's disease;
- the scope, timing, results and costs of preclinical development and laboratory testing of our additional product candidates;
- the need for additional resources and related recruitment costs to support the preclinical and clinical development of our product candidates;
- the need for any additional tests, studies, or trials beyond those originally anticipated to demonstrate the safety or efficacy of our product candidates and technologies;
- the cost, timing and outcome of regulatory reviews associated with our product candidates;
- our ability to enter into collaboration arrangements in the future;
- the costs and timing of preparing, filing, expanding, acquiring, licensing, maintaining, enforcing and prosecuting patents and patent applications, as well as defending any intellectual property-related claims;
- the repayments of the principal amount of our venture debt loan with Hercules, which will contractually start in January 2022 and will run through June 2023;
- the extent to which we acquire or in-license other businesses, products, product candidates or technologies; and
- the costs associated with maintaining quality compliance and optimizing our manufacturing processes, including the operating costs associated with our Lexington, Massachusetts manufacturing facility;

Contractual obligations and commitments

The table below sets forth our contractual obligations and commercial commitments as of December 31, 2019, that are expected to have an impact on liquidity and cash flows in future periods.

	Less than 1 year	Between 1 and 2 years	Between 2 and 5 years	Over 5 years	Total
			(in thousands)		
Debt obligations (including $11.5 million interest payments)	$ 4,119	$ 3,141	$ 39,271	$ —	$ 46,531
Operating lease obligations	5,899	5,522	17,170	34,170	62,761
Total	**$ 10,018**	**$ 8,663**	**$ 56,441**	**$ 34,170**	**$ 109,292**

We have obligations to make future payments to third parties that become due and payable on the achievement of certain development, regulatory and commercial milestones (such as the start of a clinical trial, filing of a Biologics License Application, approval by the FDA or product launch). We have not included these commitments on our balance sheet or in the table above because the achievement and timing of these milestones is not fixed and determinable.

We enter into contracts in the normal course of business with clinical research organizations ("CROs") for preclinical research studies and clinical trials, research supplies and other services and products for operating purposes. These contracts generally provide for termination on notice, and therefore are cancelable contracts and not included in the table of contractual obligations and commitments.

Off-Balance Sheet Arrangements

As of December 31, 2019, we did not have any off-balance sheet arrangement as defined in Item 303(a)(4) of Regulation S-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to a variety of financial risks in the normal course of our business, including market risk (including currency, price and interest rate risk), credit risk and liquidity risk. Our overall risk management program focuses on preservation of capital and the unpredictability of financial markets and has sought to minimize potential adverse effects on our financial performance and position.

Market Risk

Currency risk

We are exposed to foreign exchange risk arising from various currencies, primarily with respect to the U.S. dollar and euro and to a lesser extent to the British pound. As our U.S. operating entity primarily conducts its operations in U.S. dollars, its exposure to changes in foreign currency is insignificant.

Our Dutch entities hold significant amounts of U.S. dollars in cash and cash equivalents, have debt and interest obligations to Hercules denominated in U.S. dollars, generate collaboration revenue denominated in U.S. dollars, receive services from vendors denominated in U.S. dollars and occasionally British Pounds and fund the operations of our U.S. operating entity in U.S. dollars. Foreign currency denominated account receivables and account payables are short-term in nature (generally 30 to 45 days).

Variations in exchange rates will impact earnings and other comprehensive income. At December 31, 2019, if the euro had weakened 10% against the U.S. dollar with all other variables held constant, pre-tax earnings for the year would have been $24.7 million higher (December 31, 2018: $12.9 million higher), and other comprehensive income would have been $31.9 million lower (December 31, 2018: $9.1 million lower). Conversely, if the euro had strengthened 10% against the U.S. dollar with all other variables held constant, pre-tax earnings for the year would have been $24.7 million lower (December 31, 2018: $12.9 million lower), and other comprehensive income would have been $31.8 million higher (December 31, 2018: $12.0 million higher).

We strive to mitigate foreign exchange risk through holding sufficient funds in euro and dollars to finance budgeted cash flows for the next year.

The sensitivity in other comprehensive income to fluctuations in exchange rates is related to the funding by our Dutch entities of the investing and operating activities of our U.S. based entity as well as from translating the net assets of our Dutch entities from their functional currency euro into our reporting currency U.S. dollar.

Price risk

The market prices for the provision of preclinical and clinical materials and services, as well as external contracted research, may vary over time.

The commercial prices of any of our products or product candidates are currently uncertain.

We are not exposed to commodity price risk.

We do not hold investments classified as available-for-sale or at fair value through profit or loss; therefore, we are not exposed to equity securities price risk.

Interest rate risk

Our interest rate risk arises from short- and long-term debt. In June 2013, we entered into the Hercules Agreement, which was last amended and restated in December 2018, under which our borrowings bear interest at a variable rate with a fixed floor. Long-term debt issued at fixed rates expose us to fair value interest rate risk. As of December 31, 2019, the loan bore an interest rate of 8.85%.

As of December 31, 2019, if interest rates on borrowings had been 1.0% higher/lower with all other variables held constant, pre-tax earnings for the year would have been $0.3 million (2018: $0.2 million; 2017: $0.2 million) lower/ higher.

Credit Risk

Credit risk is managed on a consolidated basis. Credit risk arises from cash and cash equivalents and deposits with banks and financial institutions, outstanding receivables and committed transactions with collaboration partners and security deposits paid to landlords. We currently have no wholesale debtors other than BMS.

We deposited funds as security to our landlords related to our facility in Lexington, Massachusetts and our facility in Amsterdam. We also deposited funds to the provider of our U.S. corporate credit cards. The deposits are neither impaired nor past due.

Our cash and cash equivalents include bank balances, demand deposits and other short-term highly liquid investments (with maturities of less than three months at the time of purchase) that are readily convertible into a known amount of cash and are subject to an insignificant risk of fluctuation in value. Restricted cash includes deposits made in relation to facility leases. Cash, cash equivalents and restricted cash were placed at the following banks:

	As of December 31,			
	2019		2018	
	Amount	Credit rating	Amount	Credit rating
	in thousands			
Bank				
Bank of America	$ 315,720	Aa2	$ 30,445	Aa3
Rabobank	63,262	Aa3	205,654	Aa3
Citizens Bank	1,744	A1	1,243	A1
Total	**$ 380,726**		**$ 237,342**	

Ratings are by Moody’s.

Liquidity Risk

We believe that our existing cash and cash equivalents will enable us to fund our operating expenses and capital expenditure requirements into mid-2022. We manage liquidity through a rolling forecast of our liquidity reserve on the basis of expected cash flow and raise cash if and when needed, either through the issuance of shares or credit facilities.

The table below analyzes our financial liabilities in relevant maturity groupings based on the length of time until the contractual maturity date, as of the balance sheet date. Disclosed in the table below are the contractual undiscounted cash flows. Balances due within 12 months equal their carrying value as the impact of discounting is not significant.

	Undefined	Less than 1 year	Between 1 - 2 years	Between 2 - 5 years	Over 5 years
			in thousands		
At December 31, 2018					
Long-term debt	$ —	$ 3,119	$ 4,119	$ 40,939	$ —
Accounts payable, accrued expenses and other current liabilities	—	11,452	—	—	—
Derivative financial instruments	803	572	—	—	—
Total	**$ 803**	**$ 15,143**	**$ 4,119**	**$ 40,939**	**$ —**
At December 31, 2019					
Long-term debt	$ —	$ 4,119	$ 3,141	$ 39,271	$ —
Accounts payable, accrued expenses and other current liabilities	—	18,138	—	—	—
Derivative financial instruments	3,075	—	—	—	—
Total	**$ 3,075**	**$ 22,257**	**$ 3,141**	**$ 39,271**	**$ —**

Due to uncertainty of timing of exercise of warrants by BMS, the amount owed to derivative financial instruments is classified as undefined in time. As of December 31, 2019, we expect the BMS warrants to be exercised within two and four years after the balance sheet date.

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements and the notes thereto, included in Part IV, Item 15, beginning on page 89, are incorporated by reference into this Item 8.

Selected quarterly financial data (unaudited)

You should read the following tables presenting our unaudited quarterly results of operations in conjunction with the consolidated financial statements and related notes contained elsewhere in this Annual Report on Form 10-K. We have prepared this unaudited information on the same basis as our audited consolidated financial statements. Our quarterly operating results have fluctuated in the past and may continue to do so in the future as a result of a number of factors, including, but not limited to, the timing and nature of research and development activities.

Summarized quarterly information for the two fiscal years ended December 31, 2019 and 2018, respectively, is as follows:

	For the Quarter Ended (unaudited)			
	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019
	(in thousands, except per share data)			
Revenue	$ 2,625	$ 1,046	$ 2,474	$ 1,136
Net loss	(41,426)	(23,604)	(31,399)	(27,772)
Basic and diluted net loss per ordinary share	$ (0.95)	$ (0.58)	$ (0.83)	$ (0.74)

Note: basic and diluted net loss per ordinary share for the four quarters in 2019 do not equal the annual reported amount due to rounding.

	For the Quarter Ended (unaudited)			
	December 31, 2018	September 30, 2018	June 30, 2018	March 31, 2018
	in thousands, except per share data			
Revenue	$ 1,608	$ 3,148	$ 3,050	$ 3,478
Net loss	(21,888)	(22,035)	(20,592)	(18,789)
Basic and diluted net loss per ordinary share	$ (0.59)	$ (0.59)	$ (0.57)	$ (0.59)

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer ("CEO"), who also serves as our chief financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of December 31, 2019. Based on such evaluation, our CEO has concluded that as of December 31, 2019, our disclosure controls and procedures were effective.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. This rule defines internal control over financial reporting as a process designed by, or under the supervision of, a company's chief executive officer and chief financial officer and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

We assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. This assessment was performed under the direction and supervision of our CEO and based on criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Our management's assessment of the effectiveness of our internal control over financial reporting included testing and evaluating the design and operating effectiveness of our internal controls. In our management's opinion, we have maintained effective internal control over financial reporting as of December 31, 2019, based on criteria established in the COSO 2013 framework.

Our independent registered public accounting firm, which has audited the consolidated financial statements included in this Annual Report on Form 10-K, has also issued an audit report on the effectiveness of our internal control over financial reporting as of December 31, 2019. Their report is filed within this Annual Report on Form 10-K.

Inherent Limitations of Internal Controls

Our management, including our CEO, does not expect that our disclosure controls and procedures or our internal controls will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements due to error or fraud.

Changes in internal control over financial reporting

During the fourth quarter of 2019, there was no change in our internal control over financial reporting that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item regarding our directors, executive directors and corporate governance is incorporated into this section by reference to our Proxy Statement for our 2020 Annual Meeting of Shareholders or will be included in an amendment to this Annual Report on Form 10-K.

Item 11. Executive Compensation

The information required by this Item regarding executive compensation is incorporated into this section by reference to our Proxy Statement for our 2020 Annual Meeting of Shareholders or will be included in an amendment to this Annual Report on Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item regarding security ownership of certain beneficial owners, management and related stockholder matters, our equity compensation plans and securities under our equity compensation plans, is incorporated into this section by reference to our Proxy Statement for our 2020 Annual Meeting of Shareholders or will be included in an amendment to this Annual Report on Form 10-K.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item regarding certain relationships and related transactions and director independence is incorporated into this section by reference to our Proxy Statement for our 2020 Annual Meeting of Shareholders or will be included in an amendment to this Annual Report on Form 10-K.

Item 14. Principal Accounting Fees and Services

The information required by this Item regarding our principal accountant fees and services is incorporated into this section by reference to our Proxy Statement for our 2020 Annual Meeting of Shareholders or will be included in an amendment to this Annual Report on Form 10-K.

Part IV

Item 15. Exhibits, Financial Statements Schedules

Exhibits, Financial Statements Schedules

(a) *Financial Statements*. The following consolidated financial statements of uniQure N.V. are filed as part of this report:

(b) *Financial Statements Schedules*. Financial Statement Schedules have been omitted because of the absence of conditions under which they are required or because the required information, where material, is shown in the financial statements or notes.

(c) *Other Exhibits*. The Exhibit Index immediately preceding the signature page of this Annual Report on Form 10-K is incorporated herein by reference.

Item 16. Form 10-K Summary

Not applicable.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018 AND 2017

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
uniQure N.V.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheet of uniQure N.V. and subsidiaries (the Company) as of December 31, 2019, the related consolidated statements of operations and comprehensive loss, shareholders' equity, and cash flows for the year then ended, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019, and the results of its operations and its cash flows for the year then ended, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Change in Accounting Principle

As discussed in Note 6 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of ASC 842, *Leases*.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Controls Over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audit of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing separate opinions on the critical audit matter or on the accounts or disclosures to which they relate.

Assessment of progress made towards completion of the active targets as part of the performance obligation for license revenue

As described in Notes 2.3.19 and 2.3.23 to the consolidated financial statements, the Company primarily generates license revenue. In 2015 uniQure entered into a collaboration agreement with BMS. uniQure received substantial upfront and target designation payments in relation to the collaboration predominantly in 2015. uniQure recognizes the above payments as license revenue in relation to progress made towards completion of the performance obligation.

We identified the assessment of progress made towards completion of the performance obligation as a critical audit matter due to the high degree of subjective auditor judgement required to evaluate the key assumptions used in the Company's model to estimate progress made towards completion, which included the following:

- estimated time required to provide services during the different phases of preclinical and clinical development of the active target;
- probability of successfully completing each such phase;
- total expected performance period based on its measure of progress towards the completion of activities.

The primary procedures we performed to address this critical audit matter included the following:

- We tested certain internal controls over the Company's process to estimate progress towards completion for license revenue, including controls over the development of the license revenue recognition model, estimated time to complete each phase, estimate of the probability of successfully completing each phase, and the estimate of total expected performance period to complete the development of the active targets.
- We assessed the Company's estimated progress towards completion as per its internally developed model based on an industry wide study by reference to the Company's progress to date and the steps still required to be completed as per the collaboration agreement.
- We performed sensitivity analyses over the progress measured and total expected performance period to assess the impact on the Company's determination of license revenue recognized.
- We reviewed the Company's joint steering committee communications and collaboration agreement provisions and performed inquiries of the Company on the progress made.
- We assessed the Company's estimated probability of moving to the next phase as per its internally developed model based on an industry wide study by reference to the joint steering committee communications and inquiries of the Company.

/s/ KPMG Accountants N.V.

We have served as the Company's auditor since 2019.

Amstelveen, the Netherlands
March 2, 2020

Report of Independent Registered Public Accounting Firm

To the Management Board and Shareholders of uniQure N.V.:

Opinion on the Financial Statements

We have audited the consolidated balance sheet of uniQure N.V. and its subsidiaries (the "Company") as of December 31, 2018, and the related consolidated statements of operations and comprehensive loss, of shareholders' equity, and of cash flows for each of the two years in the period ended December 31, 2018, including the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Amsterdam, the Netherlands, February 28, 2019
PricewaterhouseCoopers Accountants N.V.

/s/ R.M.N. Admiraal RA

We served as the Company's auditor from 2006 to 2019, which includes periods before the Company became subject to SEC reporting requirements.

uniQure N.V.

CONSOLIDATED BALANCE SHEETS

	December 31, 2019	December 31, 2018
	(in thousands, except share and per share amounts)	
Current assets		
Cash and cash equivalents	$ 377,793	$ 234,898
Accounts receivable and accrued income from related party	947	233
Prepaid expenses	4,718	1,116
Other current assets	748	329
Total current assets	**384,206**	**236,576**
Non-current assets		
Property, plant and equipment, net	28,771	29,179
Operating lease right-of-use assets	26,797	—
Intangible assets, net	5,427	5,201
Goodwill	496	506
Restricted cash	2,933	2,444
Total non-current assets	**64,424**	**37,330**
Total assets	**$ 448,630**	**$ 273,906**
Current liabilities		
Accounts payable	$ 5,681	$ 3,792
Accrued expenses and other current liabilities	12,457	8,232
Current portion of operating lease liabilities	5,865	—
Current portion of deferred rent (see note 2.3.23)	—	311
Current portion of deferred revenue	7,627	7,634
Total current liabilities	**31,630**	**19,969**
Non-current liabilities		
Long-term debt	36,062	35,471
Operating lease liabilities, net of current portion	31,133	—
Deferred rent, net of current portion (see note 2.3.23)	—	8,761
Deferred revenue, net of current portion	23,138	28,861
Derivative financial instruments related party	3,075	803
Other non-current liabilities	534	435
Total non-current liabilities	**93,942**	**74,331**
Total liabilities	**125,572**	**94,300**
Commitments and contingencies		
Shareholders' equity		
Ordinary shares, €0.05 par value: 60,000,000 shares authorized at December 31, 2019 and December 31, 2018 and 43,711,954 and 37,351,653 ordinary shares issued and outstanding at December 31, 2019 and December 31, 2018, respectively.	2,651	2,299
Additional paid-in-capital	986,803	720,072
Accumulated other comprehensive loss	(6,689)	(7,259)
Accumulated deficit	(659,707)	(535,506)
Total shareholders' equity	**323,058**	**179,606**
Total liabilities and shareholders' equity	**$ 448,630**	**$ 273,906**

The accompanying notes are an integral part of these consolidated financial statements.

uniQure N.V.

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

	Year ended December 31,		
	2019	2018	2017
	(in thousands, except share and per share amounts)		
License revenues	—	—	8
License revenues from related party	4,988	7,528	4,121
Collaboration revenues	—	—	4,638
Collaboration revenues from related party	2,293	3,756	4,340
Total revenues	**7,281**	**11,284**	**13,107**
Operating expenses:			
Research and development expenses	(94,737)	(74,809)	(72,172)
Selling, general and administrative expenses	(33,544)	(25,305)	(24,635)
Total operating expenses	**(128,281)**	**(100,114)**	**(96,807)**
Other income	1,888	2,146	15,430
Other expense	(2,028)	(1,548)	(3,073)
Loss from operations	**(121,140)**	**(88,232)**	**(71,343)**
Interest income	3,547	2,729	117
Interest expense	(3,810)	(2,160)	(2,232)
Foreign currency (losses) / gains, net	(268)	4,382	(3,566)
Other non-operating (losses) / gains, net	(2,530)	208	(2,435)
Loss before income tax expense	**(124,201)**	**(83,073)**	**(79,459)**
Income tax (expense) / benefit	—	(231)	199
Net loss	**$ (124,201)**	**$ (83,304)**	**$ (79,260)**
Other comprehensive income / (loss), net of income tax:			
Foreign currency translation adjustments net of tax impact of nil for the year ended December 31, 2019 (2018: $(0.2) million and 2017: $0.2 million)	570	(5,261)	2,757
Total comprehensive loss	**$ (123,631)**	**$ (88,565)**	**$ (76,503)**
Basic and diluted net loss per ordinary share	$ (3.11)	$ (2.34)	$ (2.94)
Weighted average shares used in computing basic and diluted net loss per ordinary share	39,999,450	35,639,745	26,984,183

The accompanying notes are an integral part of these consolidated financial statements.

uniQure N.V.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

	Ordinary shares		Additional paid-in capital	Accumulated other comprehensive (loss)/income	Accumulated deficit	Total shareholders' equity
	No. of shares	Amount				
	(in thousands, except share and per share amounts)					
Balance at December 31, 2016	**25,257,420**	**$ 1,593**	**$ 464,653**	**$ (6,557)**	**$ (396,058)**	**$ 63,631**
Loss for the period	-	-	-	-	(79,260)	(79,260)
Other comprehensive income	-	-	-	2,757	-	2,757
Follow-on public offering	5,000,000	294	84,996	-	-	85,290
Shares issued as consideration in a business combination	64,648	4	584	-	-	588
Exercises of share options	603,740	32	4,088	-	-	4,120
Exercises of convertible loan warrants	114,172	7	1,946	-	-	1,953
Restricted and performance share units distributed during the period	299,060	17	(17)	-	-	-
Share-based compensation expense	-	-	10,280	-	-	10,280
Balance at December 31, 2017	**31,339,040**	**$ 1,947**	**$ 566,530**	**$ (3,800)**	**$ (475,318)**	**$ 89,359**
Cumulative effect of retroactive implementation of ASC 606 Revenue recognition	—	—	—	1,802	23,116	24,918
Loss for the period	—	—	—	—	(83,304)	(83,304)
Other comprehensive loss	—	—	—	(5,261)	—	(5,261)
Follow-on public offering	5,175,000	309	138,052	—		138,361
Exercise of share options	425,074	19	4,741	—	—	4,760
Restricted and performance share units distributed during the period	409,948	24	(24)	—	—	—
Share-based compensation expense	—	—	10,708	—	—	10,708
Issuance of ordinary shares relating to employee stock purchase plan	2,591	—	65	—	—	65
Balance at December 31, 2018	**37,351,653**	**$ 2,299**	**$ 720,072**	**$ (7,259)**	**$ (535,506)**	**$ 179,606**
Loss for the period	—	—	—	—	(124,201)	(124,201)
Other comprehensive income	—	—	—	570	—	570
Follow-on public offering	5,625,000	311	242,363	—	—	242,674
Hercules warrants exercise	37,175	2	1,271	—	—	1,273
Exercise of share options	453,232	25	5,210	—	—	5,235
Restricted and performance share units distributed during the period	235,692	14	(14)	—	—	—
Share-based compensation expense	—	—	17,533	—	—	17,533
Issuance of ordinary shares relating to employee stock purchase plan	9,202	—	368	—	—	368
Balance at December 31, 2019	**43,711,954**	**$ 2,651**	**$ 986,803**	**$ (6,689)**	**$ (659,707)**	**$ 323,058**

The accompanying notes are an integral part of these consolidated financial statements

uniQure N.V.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Cash flows from operating activities			
Net loss	$ (124,201)	$ (83,304)	$ (79,260)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation, amortization and impairment losses	6,669	12,415	7,543
Share-based compensation expense	17,533	10,708	10,280
Change in fair value of derivative financial instruments and contingent consideration	2,530	(4,054)	5,194
Unrealized foreign exchange losses / (gains)	891	(5,502)	4,222
Change in deferred tax expense	-	231	209
Change in lease incentives	-	(330)	2,215
Changes in operating assets and liabilities:			
Accounts receivable and accrued income, prepaid expenses and other current assets	(4,769)	1,578	9,715
Accounts payable	1,652	1,065	(1,670)
Accrued expenses, other liabilities and operating leases	6,010	(382)	(1,640)
Deferred revenue	(4,999)	(8,462)	(21,078)
Net cash used in operating activities	(98,684)	(76,037)	(64,270)
Cash flows from investing activities			
Purchases of intangible assets	(996)	(1,861)	(1,122)
Purchases of property, plant and equipment	(5,651)	(2,384)	(4,461)
Net cash used in investing activities	(6,647)	(4,245)	(5,583)
Cash flows from financing activities			
Proceeds from issuance of shares related to employee stock option and purchase plans	5,603	4,825	4,044
Proceeds from exercises of convertible loan warrants	-	-	1,322
Proceeds from public offering of shares, net of issuance costs	242,718	138,361	85,290
Proceeds from loan increment	-	14,775	-
Contingent consideration payment	-	-	(582)
Proceeds from exercise of warrants	500	-	-
Net cash generated from financing activities	248,821	157,961	90,074
Currency effect cash, cash equivalents and restricted cash	(106)	(2,187)	7,306
Net increase in cash, cash equivalents and restricted cash	143,384	75,491	27,527
Cash, cash equivalents and restricted cash at beginning of period	237,342	161,851	134,324
Cash, cash equivalents and restricted cash at the end of period	**$ 380,726**	**$ 237,342**	**$ 161,851**
Cash and cash equivalents	$ 377,793	$ 234,898	$ 159,371
Restricted cash related to leasehold and other deposits	2,933	2,444	2,480
Total cash, cash equivalents and restricted cash	**$ 380,726**	**$ 237,342**	**$ 161,851**
Supplemental cash flow disclosures:			
Cash paid for interest	$ (3,117)	$ 2,141	$ 1,624
Non-cash increases (decreases) in accounts payables related to purchases of intangible assets and property, plant and equipment	$ 313	$ (48)	$ (1,557)

The accompanying notes are an integral part of these consolidated financial statements.

uniQure N.V.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. General business information

uniQure (the "Company") was incorporated on January 9, 2012 as a private company with limited liability (besloten vennootschap met beperkte aansprakelijkheid) under the laws of the Netherlands. The Company is a leader in the field of gene therapy and seeks to deliver to patients suffering from rare and other devastating diseases single treatments with potentially curative results. The Company's business was founded in 1998 and was initially operated through its predecessor company, Amsterdam Molecular Therapeutics (AMT) Holding N.V ("AMT"). In 2012, AMT undertook a corporate reorganization, pursuant to which uniQure B.V. acquired the entire business and assets of AMT and completed a share-for-share exchange with the shareholders of AMT. Effective February 10, 2014, in connection with its initial public offering, the Company converted into a public company with limited liability (naamloze vennootschap) and changed its legal name from uniQure B.V. to uniQure N.V.

The Company is registered in the trade register of the Dutch Chamber of Commerce (Kamer van Koophandel) under number 54385229. The Company's headquarters are in Amsterdam, the Netherlands, and its registered office is located at Paasheuvelweg 25a, Amsterdam 1105 BP, the Netherlands and its telephone number is +31 20 240 6000. The Company's website address is www.uniqure.com.

The Company's ordinary shares are listed on the NASDAQ Global Select Market and trades under the symbol "QURE".

2. Summary of significant accounting policies

2.1 Basis of preparation

The Company prepared its consolidated financial statements in compliance with generally accepted accounting principles in the U.S. ("U.S. GAAP"). Any reference in these notes to applicable guidance is meant to refer to authoritative U.S. GAAP as found in the Accounting Standards Codification ("ASC") and Accounting Standards Update ("ASU") of the Financial Accounting Standards Board ("FASB").

The consolidated financial statements have been prepared under the historical cost convention, except for derivative financial instruments and contingent consideration, which are recorded at fair value through profit or loss.

The consolidated financial statements are presented in U.S. dollars, except where otherwise indicated. Transactions denominated in currencies other than U.S. dollars are presented in the transaction currency with the U.S. dollar amount included in parenthesis, converted at the foreign exchange rate as of the transaction date.

The consolidated financial statements presented have been prepared on a going concern basis based on the Company's cash and cash equivalents as of December 31, 2019 and the Company's budgeted cash flows for the twelve months following the issuance date.

2.2 Use of estimates

The preparation of consolidated financial statements, in conformity with U.S. GAAP and SEC rules and regulations, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and reported amounts of revenues and expenses during the reporting period. Estimates and assumptions are primarily made in relation to revenue recognition in the determination and measurement of performance obligations and assessment of the performance period over which license revenue is recognized, income taxes, including the realization of deferred tax assets, fair value of derivative financial instruments, share-based compensation, measurement of accrued expenses which have not yet been invoiced as of the balance sheet date and business combinations including contingent consideration payable. If actual results differ from the Company's estimates, or to the extent these estimates are adjusted in future periods, the Company's results of operations could either benefit from, or be adversely affected by, any such change in estimate.

2.3 Accounting policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

2.3.1 Consolidation

The consolidated financial statements comprise the financial statements of the Company and its subsidiaries. Subsidiaries are all entities over which the Company has a controlling financial interest either through variable interest or through voting interest. Currently, the Company has no involvement with variable interest entities.

Inter-company transactions, balances, income and expenses on transactions between uniQure entities are eliminated in consolidation. Profits and losses resulting from inter-company transactions that are recognized in assets are also eliminated. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Company.

2.3.2 Current versus non-current classification

The Company presents assets and liabilities in the consolidated balance sheets based on current and non-current classification.

The term current assets is used to designate cash and other assets or resources commonly identified as those that are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business. The Company's normal operating cycle is twelve months. All other assets are classified as non-current.

The term current liabilities is used principally to designate obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets, or the creation of other current liabilities. Current liabilities are expected to be settled in the normal operating cycle. The Company classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities, if any.

2.3.3 Foreign currency translation

The functional currency of the Company and each of its entities (with the exception of uniQure Inc.) is the euro (€). This represents the currency of the primary economic environment in which the entities operate. The functional currency of uniQure Inc. is the U.S. dollar ($). The consolidated financial statements are presented in U.S. dollars.

Foreign currency transactions are measured and recorded in the functional currency using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the re-measurement of monetary assets and liabilities denominated in foreign currencies at exchange rates prevailing at balance sheet date are recognized in profit and loss.

Upon consolidation, the assets and liabilities of foreign operations are translated into the functional currency of the shareholding entity at the exchange rates prevailing at the balance sheet date; items of income and expense are translated at monthly average exchange rates. The consolidated assets and liabilities are translated from uniQure N.V.'s functional currency, euro, into the reporting currency U.S. dollar at the exchange rates prevailing at the balance sheet date; items of income and expense are translated at monthly average exchange rates. Issued capital and additional paid-in capital are translated at historical rates with differences to the balance sheet date rate recorded as translation adjustments in other comprehensive income / loss. The exchange differences arising on translation for consolidation are recognized in "accumulated other comprehensive income / loss". On disposal of a foreign operation, the component of other comprehensive income / loss relating to that particular foreign operation is recognized in profit or loss.

2.3.4 Fair value measurement

The Company measures certain assets and liabilities at fair value, either upon initial recognition or for subsequent accounting or reporting. *ASC 820, Fair Value Measurements and Disclosures* requires disclosure of methodologies used in determining the reported fair values and establishes a hierarchy of inputs used when available. The three levels of the fair value hierarchy are described below:

- Level 1 - Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.

- Level 2 - Valuations based on quoted prices for similar assets or liabilities in markets that are not active or models for which the inputs are observable, either directly or indirectly.

- Level 3 - Valuations that require inputs that reflect the Company's own assumptions that are both significant to the fair value measurement and are unobservable.

To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized as Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

Items measured at fair value on a recurring basis include financial instruments and contingent consideration (note 4, "Fair value measurement"). The carrying amount of cash and cash equivalents, accounts receivable from collaborators, prepaid expenses, other assets, accounts payable, accrued expenses and other current liabilities reflected in the consolidated balance sheets approximate their fair values due to their short-term maturities.

2.3.5 Business combination

On July 31, 2014, the Company closed its acquisition of InoCard GmbH ("InoCard"). This transaction was accounted for as a business combination under the acquisition method of accounting. Accordingly, the tangible and intangible assets acquired, and liabilities assumed were recorded at fair value as of the date of acquisition, with the excess purchase price recorded as goodwill. The estimated fair values of the assets acquired, and liabilities assumed were determined using the methods discussed in the following paragraphs and required significant judgment and estimates, which could materially differ from actual values and fair values determined using different methods or assumptions.

a. Goodwill

Goodwill represents the excess of the purchase price over the fair value of the net assets acquired when accounted for using the acquisition method of accounting for business combinations. Goodwill is not amortized but is evaluated for impairment within the Company's single reporting unit on an annual basis in the fourth quarter, or more frequently if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of the Company's reporting unit below its carrying amount. The Company has not recognized any impairment charges related to goodwill.

b. Acquired research and development

Acquired research and development ("Acquired R&D") represents the fair value assigned to intangible assets in incomplete research projects that the Company acquires through business combinations. The amounts are capitalized and are accounted for as indefinite-lived intangible assets, subject to impairment testing until completion, abandonment of the projects or when the research findings are commercialized through a revenue-generating project. Upon successful completion or commercialization of a project, uniQure will make a determination as to the then useful life of the intangible asset, generally determined by the period in which the substantial majority of the cash flows are expected to be generated, and begin amortization. In case of abandonment, the asset will be written-off.

See note 6, "Intangible assets," for additional information.

c. Contingent consideration

Each reporting period, the Company revalues the contingent consideration obligations associated with this business combination to their fair value and records changes in the fair value within research and development expenses. Changes in contingent consideration result from changes in assumptions regarding the probabilities of successful achievement of related milestones, the estimated timing in which milestones are achieved and the discount rate used to estimate the fair value of the liability. Payments made soon after the acquisition date are recorded as cash flows from financing activities, and payments, or the portion of the payments, not made soon after the acquisition date are recorded as cash flows from operating activities.

See note 4, “Fair value measurement,” for additional information.

2.3.6 Notes to the consolidated statements of cash flows

The consolidated statements of cash flows have been prepared using the indirect method. The cash disclosed in the consolidated statements of cash flows is comprised of cash and cash equivalents. Cash and cash equivalents include bank balances, demand deposits and other short-term highly liquid investments (with maturities of less than three months at the time of purchase) that are readily convertible into a known amount of cash and are subject to an insignificant risk of fluctuation in value.

Cash flows denominated in foreign currencies have been translated at the average exchange rates. Exchange differences, if any, affecting cash and cash equivalents are shown separately in the consolidated statements of cash flows. Interest paid and received, and income taxes are included in net cash (used in) provided by operating activities.

2.3.7 Segment information

Operating segments are identified as a component of an enterprise for which separate discrete financial information is available for evaluation by the chief operating decision maker, or decision-making group, in making decisions on how to allocate resources and assess performance. The Company views its operations and manages its business as one operating segment, which comprises the discovery, development and commercialization of innovative gene therapies.

2.3.8 Net loss per share

The Company follows the provisions of *ASC 260*, *Earnings Per Share*. In accordance with these provisions, loss per share is calculated by dividing net loss by the weighted average number of common shares outstanding during the period.

Diluted net loss per share reflects the dilution that would occur if share options or warrants to issue common stock were exercised, or performance or restricted share units were distributed. However, potential common shares are excluded if their effect is anti-dilutive. The Company currently has no dilutive securities due to the net loss position and as such, basic and diluted net loss per share are the same for the periods presented.

2.3.9 Impairment of long-lived assets

Long-lived assets, which include property, plant, and equipment and finite-lived intangible assets, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of an asset or asset group may not be recoverable. Right-of-use assets are also reviewed for impairment in accordance with ASC 360. The recoverability of the carrying value of an asset or asset group depends on the successful execution of the Company’s business initiatives and its ability to earn sufficient returns on approved products and product candidates. When such events or changes in circumstances occur, the Company assesses recoverability by determining whether the carrying value of such assets will be recovered through the undiscounted expected future cash flows. If the future undiscounted cash flows are less than the carrying amount of these assets, the Company recognizes an impairment loss based on the excess of the carrying value over the fair value of the assets. Fair value is determined through various valuation techniques, including discounted cash flow models, quoted market values, and third-party independent appraisals, as considered necessary.

Goodwill is not amortized but is evaluated for impairment within the Company's single reporting unit on an annual basis, during the fourth quarter, or more frequently if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of the Company's reporting unit below its carrying amount. The Company performs the same quantitative analysis discussed above for long-lived assets and finite-lived intangible assets.

2.3.10 Intangible assets

Acquired licenses have a finite useful life and are carried at cost less accumulated amortization and impairment losses. Amortization is calculated using the straight-line method to allocate the cost of licenses over their estimated useful lives (generally 20 years unless a license expires prior to that date).

2.3.11 Property, plant and equipment

Property, plant and equipment is comprised mainly of laboratory equipment, leasehold improvements, construction-in-progress ("CIP") and office equipment. All property, plant and equipment is stated at cost less accumulated depreciation. CIP consists of capitalized expenses associated with construction of assets not yet placed into service. Depreciation commences on CIP once the asset is placed into service based on its useful life determined at that time.

Maintenance and repairs that do not improve or extend the lives of the respective assets are expensed as incurred. Upon disposal, the related cost and accumulated depreciation is removed from the accounts and any resulting gain or loss on the transaction is recognized in the consolidated statements of operations and comprehensive loss.

Depreciation is calculated using the straight-line method over the estimated useful lives of the assets (or in the case of leasehold improvements a shorter lease term), which are as follows:

· Leasehold improvements	Between 10 – 15 years
· Laboratory equipment	5 years
· Office equipment	Between 3 – 5 years

2.3.12 Other (non) current assets

Deposits paid are either presented as other current assets or as other non-current assets based on duration of the underlying contractual arrangement. Deposits are classified as restricted cash and primarily relate to facility leases.

2.3.13 Accounts receivable

Accounts receivables are amounts due from services provided to the Company's collaboration partner and are purely trade receivables.

2.3.14 Prepaid expenses

Prepaid expenses are amounts paid in the period, for which the benefit has not been realized, and include payments made for insurance and research and clinical contracts. The related expense will be recognized in the subsequent period as incurred.

2.3.15 Accounts payable and accrued expenses

Accounts payables are invoiced amounts related to obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Accounts payables are recognized at the amounts invoiced by suppliers.

Accrued expenses are recognized for goods or services that have been acquired in the ordinary course of business.

2.3.16 Long-term debt

Long-term debt is initially recognized at cost and presented net of original issue discount or premium and debt issuance costs on the consolidated balance sheets. Amortization of debt discount and debt issuance costs is recognized as interest expense in profit and loss over the period of the debt, using the effective interest rate method.

2.3.17 Pensions and other post-retirement benefit plans

The Company has a defined contribution pension plan for all employees at its Amsterdam facility in the Netherlands, which is funded by the Company through payments to an insurance company, with individual accounts for each participants' assets. The Company has no legal or constructive obligation to pay further contributions if the plan does not hold sufficient assets to pay all employees the benefits relating to services rendered in the current and prior periods. The contributions are expensed as incurred. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in the future payments is available.

Starting in 2016, the Company adopted a qualified 401(k) Plan for all employees at its Lexington facility in the USA, which offers both a pre-tax and post-tax (Roth) component. Employees may contribute up to 50% of their pre-tax compensation, which is subject to IRS statutory limits for each calendar year. The Company matches $0.50 for every $1.00 contributed to the plan by participants up to 6% of base compensation. Employer contributions are recognized as they are contributed, as long as the employee is rendering services in that period. If employer contributions are made in periods after an individual retires or terminates, the estimated cost is accrued during the employee's service period.

2.3.18 Share-based compensation

The Company accounts for its share-based compensation awards in accordance with *ASC 718, Compensation-Stock Compensation.*

All of the Company's share-based compensation plans for employees are equity-classified.

ASC 718 requires all share-based compensation to employees, including grants of employee options, restricted share units, performance share units and modifications to existing instruments, to be recognized in the consolidated statements of operations and comprehensive loss based on their grant-date fair values, net of an estimated forfeiture rate, over the requisite service period. Forfeitures of employee options are recognized as they occur. The requirements of ASC 718 are also applied to nonemployee share-based payment transactions except for specific guidance on certain inputs to an option-pricing model and the attribution of cost.

The Company uses a Hull & White option model to determine the fair value of option awards. The model captures early exercises by assuming that the likelihood of exercises will increase when the share-price reaches defined multiples of the strike price. This analysis is performed over the full contractual term.

2.3.19 Revenue recognition

The Company primarily generates revenue from its collaboration, research and license agreements with its collaboration partners for the development and commercialization of its product candidates.

Revenue recognition in accordance with ASC 606:

On January 1, 2018 the Company adopted new revenue recognition policies in accordance with ASC 606 using the modified retrospective approach. The new revenue recognition policies replace the revenue recognition standards under ASC 605. The Company elected to implement ASC 606 by applying it to active collaboration arrangements as of the Initial Application Date and to record a cumulative adjustment of revenue previously recognized to accumulated loss as of December 31, 2017. See note 2.3.23 "Recently Adopted Accounting Pronouncements" and note 3 "Collaboration arrangements and concentration of credit risk" for additional information.

Revenue recognition for the year ended December 31, 2017:

During the year ended December 31, 2017 the Company applied ASC 605.

The Company recognized revenue when earned and realized or realizable. Accordingly, revenue was recognized for each unit of accounting when all of the following criteria were met:

- Persuasive evidence of an arrangement exists;
- Delivery has occurred or services have been rendered;
- The seller´s price to the buyer is fixed or determinable;
- Collectability is reasonably assured.

Amounts received prior to satisfying the revenue recognition criteria are recorded as deferred revenue in the Company's consolidated balance sheets.

Multiple element arrangements were analyzed to determine whether the deliverables within the agreement can be separated or whether they must be accounted for as a single unit of accounting. Deliverables under an agreement are required to be accounted for as separate units of accounting provided that (i) a delivered item has value to the customer on a stand-alone basis; and (ii) if the agreement includes a general right of return relative to the delivered item, the delivery or performance of the undelivered item is considered probable and substantially in the control of the vendor. The allocation of consideration amongst the deliverables under the agreement is derived using a "best estimate of selling price" if vendor specific objective evidence and third-party evidence of fair value are not available. If the delivered element does not have stand-alone value or if the fair value of any of the undelivered elements cannot be determined, the arrangement is accounted for as a single unit of accounting.

a. License revenues under ASC 605

License revenues consisted of up-front payments, target selection payments, milestone payments and royalties.

Up-front and target selection payments

Up-front payments, target selection payments or similar non-refundable payments were initially reported as deferred revenue on the consolidated balance sheets and were recognized as revenue on a straight-line basis over the period of the performance obligation. The estimated period of the performance obligation is re-assessed at each balance sheet date.

Milestone payments and royalties

Research-based milestone payments were recognized as revenues either on achievement of such milestones if the milestones were considered substantive or over the period the Company has continuing performance obligations, if the milestones were not considered substantive. When determining if a milestone is substantive, the Company considered the following factors:

- The degree of certainty in achieving the milestone;
- The frequency of milestone payments;
- The Company's efforts, which result in achievement of the milestone;
- The amount of the milestone payment relative to the other deliverables and payment terms; and
- Whether the milestone payment is related to future performance or deliverables.

Sales-based milestone payments and royalties were recognized in earnings when earned.

b. Collaboration revenue under ASC 605

Collaboration revenue consists of revenue generated from collaborative research and development arrangements. Services may include the provision of Company staff, consultants or other third-party vendors engaged by the Company in relation to a collaboration program and the manufacturing of gene therapeutic products to the extent these were reimbursed through the respective collaborative research and development program.

Collaboration revenues, which were related to reimbursements from collaborators for the Company's performance of research and development services under the respective agreements, were recognized on the basis of labor hours valued at a contractually agreed rate. Collaboration revenues include reimbursements for related out-of-pocket expenses. Cost reimbursements to which the Company was entitled under agreements were recognized as collaboration revenues in the same quarter of the recorded cost they were intended to compensate.

2.3.20 Other income, other expense

The Company receives certain government and regional grants, which support its research efforts in defined projects, and include contributions towards the cost of research and development. These grants generally provide for reimbursement of approved costs incurred as defined in the respective grants and are deferred and recognized in the statements of operations and comprehensive loss over the period necessary to match them with the costs they are intended to compensate, when it is probable that the Company has complied with any conditions attached to the grant and will receive the reimbursement.

The Company's other income also consists of income from the subleasing of the Amsterdam facility while other expense consists of expenses incurred in relation to the subleasing income.

Income from releasing outstanding deferred revenue in relation to the termination of the collaboration with Chiesi in 2017 is presented as other income in 2017 with no such income in 2018 and 2019.

Cost incurred in 2017 in relation to terminating the marketing of its Glybera program, as well as costs associated with exiting its prior Amsterdam facilities and its Heidelberg site are presented as other expenses with no such expenses in 2018 and 2019.

2.3.21 Research and development expenses

Research and development costs are expensed as incurred. Research and development expenses generally consist of laboratory research, clinical trials, statistical analysis and report writing, regulatory compliance costs incurred with clinical research organizations and other third-party vendors (including post-approval commitments to conduct consistency and comparability studies). In addition, research and development expenses consist of start-up and validation costs related to the Company's Lexington facility and the development and improvement of the Company's manufacturing processes and methods.

2.3.22 Income taxes

Income taxes are recorded in accordance with *ASC 740, Income Taxes*, which provides for deferred taxes using an asset and liability approach. The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the financial statement carrying amount and the tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse.

Valuation allowances are provided, if based upon the weight of available evidence, it is more-likely-than-not that some or all of the deferred tax assets will not be realized. Recognized tax positions are measured at the largest amount of tax benefit that is greater than 50 percent likely of being realized upon settlement. The determination as to whether the tax benefit will more-likely-than-not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. As of December 31, 2019, and 2018, the Company did not have any significant unrecognized tax benefits.

2.3.23 Recently Adopted Accounting Pronouncements

ASC 842 - Leases (Topic 842)

In February 2016, the FASB issued ASU 2016-02, “Leases (Topic 842)”. In July 2018, the FASB issued ASU No. 2018-10, “Codification Improvements to Topic 842, Leases” (ASU 2018-10), which provides narrow amendments to clarify how to apply certain aspects of the new lease standard, and ASU No. 2018-11, “Leases (Topic 842) – Target Improvements” (ASU 2018-11), which address implementation issues related to the new lease standard. The standard is effective for interim and annual reporting periods beginning after December 15, 2018. Under the new standard, lessees are required to recognize the right-of-use assets and lease liabilities that arise from operating leases on the Consolidated balance sheet. The Company adopted the standard using the modified retrospective approach with an effective date as of the beginning of the Company’s fiscal year, January 1, 2019, to operating leases that existed on that date. Prior year comparative financial information was not recast under the new standard and continues to be presented under ASC 840. The Company elected to utilize the package of practical expedients available for expired or existing contracts which allowed the Company to carryforward historical assessments of (1) whether contracts are or contain leases, (2) lease classification, and (3) initial direct costs. The Company performed an assessment and identified the lease facilities as leases to be accounted for under ASC 842 as of January 1, 2019. The Company elected to implement ASC 842 by applying the modified retrospective approach, which allows the Company to restrict the application of the new guidance to operating leases as of January 1, 2019. The impact of implementing ASC 842 is summarized below:

- Recognized a $19.0 million operating right-of-use asset and a $28.1 million operating lease liability in relation to the facilities leased at the Amsterdam and Lexington sites in the Consolidated balance sheet as of January 1, 2019;
- Presented deferred rent of $9.1 million as of December 31, 2018, as a reduction of the right-of-use asset as from January 1, 2019 onwards in the Consolidated balance sheet and as a change within operating cash flows within accrued expense, other liabilities and operating leases;

The Company measured the lease liability at the present value of the future lease payments as of January 1, 2019. The Company used an incremental borrowing rate to discount the lease payments. The Company derived the discount rate, adjusted for differences such as in the term and payment patterns, from the Company’s loan from Hercules Capital, which was refinanced immediately prior to the January 1, 2019 adoption date in December 2018. The right-of-use asset is valued at the amount of the lease liability reduced by the remaining December 31, 2018 balance of lease incentives received. The lease liability is subsequently measured at the present value of the future lease payments as of the reporting date with a corresponding adjustment to the right-to-use asset. Absent a lease modification, the Company will continue to utilize the January 1, 2019, incremental borrowing rate.

The Company will continue to recognize lease cost on a straight-line basis and will continue to present these costs as operating expenses within the Consolidated statements of operations and comprehensive loss. The Company will continue to present lease payments and landlord incentive payments within cash flows from operations within the Consolidated statements of cash flows.

The financial results for year ended December 31, 2019, is presented under the new standard, while the comparative periods presented are not adjusted and continue to be reported in accordance with the Company’s historical accounting policy.

Refer to note 6, “Right-of-use asset and lease liabilities” for further information.

ASU 2014-09: ASC 606 Revenue from Contracts with Customers

Effective January 1, 2018 the Company adopted new revenue recognition policies in accordance with ASC 606 using the modified retrospective approach. The new revenue recognition policies replace the revenue recognition standards under ASC 605. The Company elected to implement ASC 606 by applying it to active collaboration arrangements as of January 1, 2018 and to record a cumulative adjustment of revenue previously recognized to the accumulated loss as of December 31, 2017. The impact of implementing ASC 606 is summarized below:

- Recognized $7.5 million of license revenue during the twelve months ended December 31, 2018, related to the collaboration with BMS compared to $4.2 million that would have been recognized in accordance with the previous revenue recognition policies;

- Continued to present revenue recognized during the twelve months ended December 31, 2017 and December 31, 2016, in accordance with the previous revenue recognition policies;
- Decreased the accumulated loss by $24.9 million as of January 1, 2018 and decreased deferred revenue as of the same date by $24.9 million.

In accordance with the previous revenue recognition policies the Company had concluded that the BMS collaboration agreement consisted of three performance obligations, (i) technology (license and target selections), know-how and manufacturing in the field of gene therapy and development and active contribution to the development through the joint steering committee participations, (ii) provision of employees, goods and services for research, and (iii) clinical and commercial manufacturing. The Company determined that these three performance obligations are substantially identical with the performance obligations in accordance with its new revenue recognition policies:

(i) Providing access to its technology and know-how in the field of gene therapy as well as actively contributing to the target selection, the collaboration as a whole, the development during the target selection, the pre-clinical and the clinical phase through participating in joint steering committee and other governing bodies (“License Revenue”);

(ii) Providing pre-clinical research activities (“Collaboration Revenue”); and

(iii) Providing clinical and commercial manufacturing services for products (“Manufacturing Revenue”).

License Revenue

The Company previously recognized License Revenue over the expected performance period on a straight-line basis commencing on May 21, 2015. The Company now recognizes License Revenue over the expected performance period based on its progress toward the completion of its services (see note 3 for a detailed discussion).

Collaboration and Manufacturing Revenue

The adoption of the new revenue recognition policies did not materially impact the recognition of Collaboration or Manufacturing Revenue.

ASU 2016-01: ASC 825 Recognition and Measurement of Financial Assets and Financial Liabilities

In January 2016, the FASB issued ASU 2016-01, Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities (“ASU 2016-01”). ASU 2016-01 addresses certain aspects of recognition, measurement, presentation and disclosure of financial instruments. ASU 2016-01 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2017, which for the Company was January 1, 2018. ASU 2016-01 did not have a material impact on the Company’s consolidated financial statements.

ASU 2016-05: Derivatives and Hedging: Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships

In March 2016, the FASB issued ASU 2016-05, Derivatives and Hedging: Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships (“ASU 2016-05”) and ASU 2016-06, Derivatives and Hedging: Contingent Put and Call Options in Debt Instruments. Both ASUs address issues regarding hedge accounting. The ASUs are effective for fiscal years, and interim periods within those years, beginning after December 15, 2017, which for the Company was January 1, 2018. Neither ASU 2016-05 nor ASU 2016-06 had a material impact on the Company’s consolidated financial statements.

ASU 2017-09: Compensation (topic 718)- scope of modification accounting

In May 2017, the FASB issued ASU 2017-09, Compensation-Stock Compensation (topic 718)- Scope of Modification Accounting (“ASU 2017-09”), which provides clarity regarding the applicability of modification accounting in relation to share-based payment awards. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The effective date for the standard is for fiscal years beginning after December 15, 2017, which for the Company was January 1, 2018. The new standard was to be applied prospectively. ASU 2017-09 did not have a material impact on the Company’s consolidated financial statements.

ASU 2019-07: Codification Updates to SEC Sections

In July 2019, the FASB issued ASU 2019-07, Codification Updates to SEC Sections ("ASU 2019-07"), which provides amendments to SEC Paragraphs Pursuant to SEC Final Rule Releases No. 33-10532, Disclosure Update and Simplification, and Nos. 33-10231 and 33-10442, Investment Company Reporting Modernization, and Miscellaneous Updates. The effective date for the standard is upon issuance. ASU 2017-09 did not have a material impact on the Company's consolidated financial statements.

Recent Accounting Pronouncements Not Yet Effective

ASU 2018-13: Fair Value Measurement

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820) which modifies the disclosure requirements on fair value measurements. The effective date for the standard is fiscal years beginning after December 15, 2019, which for the Company is January 1, 2020. Early adoption is permitted. The new disclosure requirements for changes in unrealized gains and losses in other comprehensive income for recurring Level 3 measurements, the range and weighted average of significant unobservable inputs and the amended requirements for the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively. The Company does not expect ASU 2018-13 to have a material impact on its consolidated financial statements except for the inclusion of potentially additional disclosures for Level 3 inputs.

3. Collaboration arrangements and concentration of credit risk

In the years ended December 31, 2019, and December 31, 2018, the Company generated all collaboration and license revenues from its collaboration and license agreement with BMS.

The Company and Chiesi Farmaceutici S.p.A. ("Chiesi") terminated their collaboration in 2017. As a result, the Company is not required to provide any further services to Chiesi.

Since June 2015, BMS has been considered a related party due to the combination of its equity investment in the Company (December 31, 2019: 2.4 million ordinary shares or 5.5% of outstanding ordinary shares), the warrants as well as the obligations arising from the collaboration and license agreement the Company and BMS entered into in May 2015.

Services to the Company's collaboration partners are rendered by the Dutch operating entity. Total collaboration and license revenue generated from these partners are as follows:

	Years ended December 31,		
	2019	2018	2017
	(in thousands)		
Bristol Myers Squibb	$ 7,281	$ 11,284	$ 8,461
Chiesi Farmaceutici S.p.A (terminated in 2017)	—	—	4,646
Total	**$ 7,281**	**$ 11,284**	$ **13,107**

Amounts owed by BMS in relation to the collaboration services are as follows:

	December 31, 2019	December 31, 2018
	(in thousands)	
Bristol Myers Squibb	$ 947	$ 233
Total	**$ 947**	**$ 233**

BMS collaboration

In May 2015, the Company entered into a collaboration and license agreement (the "BMS CLA") and various related agreements with BMS that provide BMS with exclusive access to the Company's gene therapy technology platform for the research, development and commercialization of therapeutics aimed at multiple targets in cardiovascular and other diseases ("Collaboration Targets"). During the initial research term of the BMS CLA, the Company supported BMS in discovery, non-clinical, analytical and process development efforts in respect of the Collaboration Targets. For any Collaboration Targets that may be advanced, the Company will be responsible for manufacturing of clinical and commercial supplies using the Company's vector technologies and industrial, proprietary insect-cell based manufacturing platform. BMS reimburse the Company for all its research and development costs in support of the collaboration during the initial research term, and will lead development, regulatory and commercial activities for any Collaboration Targets that may be advanced. The BMS CLA provides that the companies may collaborate on up to ten Collaboration Targets in total. The Company has agreed to certain restrictions on its ability to work independently of the collaboration, either directly or indirectly through any affiliate or third party, on certain programs that would be competitive with the collaboration programs.

BMS initially designated four Collaboration Targets, including S100A1 for congestive heart failure ("AMT-126"). In October 2018, the Company and BMS completed a heart function proof-of-concept study of AMT-126 in a pre-clinical, diseased animal model. The study demonstrated deoxyribonucleic acid delivery and expression of S100A1 in the myocardium, thereby validating the Company's vector delivery platform in the animal model. The data did not show a benefit on heart function at six months and, consequently, the Joint Steering Committee for the collaboration decided to discontinue work on S100A1. The Company impaired a $5.4 million acquired research and development asset associated with the program and released a contingent liability of $3.8 million related to the acquisition of the asset to income in the year ended December 31, 2018. In April 2019, BMS designated a new cardiovascular Collaboration Target to replace S100A1. As a result, BMS has designated a total of four Collaboration Targets as of December 31, 2019.

The initial four-year research term under the collaboration terminated on May 21, 2019. In February 2019, BMS requested a one-year extension of the research term. In April 2019, following an assessment of the progress of this collaboration and the Company's expanding proprietary programs, the Company notified BMS that the Company did not intend to agree to an extension of the research term but rather preferred to restructure or amend the collaboration to reduce or eliminate certain of the Company's obligations under it.

Accordingly, the Company is currently in discussions with BMS potentially to restructure or amend the BMS CLA and other related agreements. It is currently uncertain whether a change to the BMS CLA will be agreed and, if agreed, what the specific terms of any such change may be. As a consequence, the Company has not taken into account the impact of such change, if any, on the timing of recognition of the prepaid License Revenue if and when the BMS CLA and other related agreements have been restructured or amended. The final resolution of these discussion may or may not result in material changes to the Company's collaboration with BMS.

The Company evaluated the BMS CLA and determined that its performance obligations in accordance with its adoption of ASC 606 on January 1, 2018, are as follows:

(i) Providing access to its technology and know-how in the field of gene therapy as well as actively contributing to the target selection, the collaboration as a whole, the development during the target selection, the pre-clinical and the clinical phase through participating in joint steering committee and other governing bodies ("License Revenue");

(ii) Providing pre-clinical Collaboration Target specific, non-clinical, analytical and process development services during the initial research term, which ended on May 21, 2019 ("Collaboration Revenue"); and

(iii) Providing clinical and commercial manufacturing services for Collaboration Targets ("Manufacturing Revenue"). To date the Company has not generated any Manufacturing Revenue.

During the aforementioned discussions with BMS potentially to restructure or amend the BMS CLA and other related agreements, which may be terminated by the Company or BMS at any time, the Company agreed, subject to certain conditions, to continue providing support of the pre-clinical Collaboration Targets, and any related costs will be reimbursed by BMS.

License Revenue – BMS

The Company recognized $5.0 million of License Revenue for the year ended December 31, 2019 (December 31, 2018: $7.5 million, December 31, 2017: $4.1 million) in relation to a $60.1 million upfront payment recorded on May 21, 2015, as well as $15.0 million received in relation to the designation of the second, third and fourth Collaboration Targets in August 2015 (together "Consideration").

The Company would be entitled to an aggregate $16.5 million in target designation payments upon the selection of the fifth through tenth Collaboration Targets. The Company would also be eligible to receive research, development and regulatory milestone payments of up to $254.0 million for a lead Collaboration Target and up to $217.0 million for each of the other selected Collaboration Targets, if defined milestones are achieved. The Company would include the variable consideration related to the selection of the fifth to tenth Collaboration Target, or any of the milestones, in the transaction price once it is considered probable that including these payments in the transaction price would not result in the reversal of cumulative revenue recognized. The Company would recognize significant amounts of License Revenue for services performed in prior periods if and when the Company considers this probable. Due to the significant uncertainty surrounding the development of gene-therapy product candidates and the dependence on BMS's performance and decisions, the Company does not currently consider this probable.

Additionally, the Company is eligible to receive net sales-based milestone payments and tiered mid-single to low double-digit royalties on product sales. The royalty term is determined on a licensed-product-by-licensed-product and country-by-country basis and begins on the first commercial sale of a licensed product in a country and ends on the expiration of the last to expire of specified patents or regulatory exclusivity covering such licensed product in such country or, with a customary royalty reduction, ten years after the first commercial sale if there is no such exclusivity. These revenues will be recognized when performance obligations are satisfied.

Under the previous revenue standard, the Company recognized License Revenue over the expected performance period on a straight-line basis commencing on May 21, 2015. In accordance with the new revenue recognition standards, the Company recognizes License Revenue over the expected performance period based on its measure of progress towards the completion of certain activities related to its services. The Company determines such progress by comparing activities performed at the end of each reporting period with total activities expected to be performed. The Company estimates total expected activities using a number of unobservable inputs, such as the probability of BMS designating additional targets, the probability of successfully completing each phase and estimated time required to provide services during the various development stages. If available, the Company uses product candidate-specific research and development plans. Alternatively, the Company assumes that completion of the pre-clinical phase requires an average of four years and that clinical development and commercial launch on average require 8.5 years.

The estimation of total services at the end of each reporting period involves considerable judgement. The estimated number of Collaboration Targets that BMS will pursue significantly impacts the amount of License Revenue the Company recognizes. For example, if the Company would increase the probability of all additional Collaboration Targets being designated by 10% then the revenue for the annual period ended December 31, 2019 would have decreased by approximately $1.9 million, as the Company would be required to render more services in relation to the Consideration received.

Collaboration Revenue – BMS

The Company recognizes Collaboration Revenues associated with pre-clinical Collaboration Target specific, non-clinical, analytical and process development activities that are reimbursable by BMS under its collaboration agreement during the initial research term (that ended on May 21, 2019). The Company is currently in discussions with BMS potentially to restructure or amend the collaboration and license agreement and other related agreements following the expiration of the research term. During these discussions, which may be terminated by the Company or BMS at any time, the Company has agreed to continue providing support of the pre-clinical Collaboration Targets, and any related costs will be reimbursed by BMS.

The Company has provided target-specific research and development services to BMS, and, subject to the outcome of the discussions with BMS, may continue to do so. Collaboration Revenue related to these contracted services is recognized when performance obligations are satisfied.

The Company generated $2.3 million collaboration revenue for the year ended December 31, 2019 (December 31, 2018: $3.8 million; December 31, 2017: $4.3 million).

Manufacturing Revenue – BMS

BMS and the Company also entered into a Master Clinical Supply Agreement in April 2017 for the Company to supply gene therapy products during the clinical phase as well as into a binding term sheet to supply gene therapy products during the commercial phase to BMS. Revenues from product sales will be recognized when earned. To date the Company has not supplied any clinical and commercial gene therapy product to BMS.

Chiesi collaboration

In 2013, the Company entered into two agreements with Chiesi, one for the co-development and commercialization of the hemophilia B program (the "Hemophilia Collaboration Agreement") and one for the commercialization of Glybera (the "Glybera Agreement", and together with the Collaboration Agreement, the "Chiesi Agreements") in Europe and selected territories.

In April 2017, the parties agreed to terminate the Glybera Agreement. As of October 2017, the Company is not required to supply Glybera to Chiesi. In July 2017, the parties terminated the Hemophilia Collaboration Agreement and the Company reacquired rights associated with its hemophilia B program in Europe and selected territories.

License Revenue – Chiesi

Upon the closing of the Chiesi Agreements on June 30, 2013, the Company received €17.0 million ($22.1 million) in non-refundable up-front payments. The Company determined that the up-front payments constituted a single unit of accounting that should be amortized as License Revenue on a straight-line basis over the performance period of July 2013 through September 2032. In July 2017, the Company fully released the outstanding deferred revenue and recorded $13.8 million other income during the year ended December 31, 2017.

The Company recognized no License Revenue for the year ended December 31, 2019 (December 31, 2018: nil; December 31, 2017: $0.0 million). The Company recognized the License Revenue for the year ended December 31, 2017, net of a $0.5 million reduction for amounts previously amortized and repaid by the Company in accordance with the Glybera Termination Agreement in 2017.

Collaboration Revenue – Chiesi

Prior to the termination of the Hemophilia Collaboration Agreement up to June 30, 2017, Chiesi reimbursed the Company for 50% of the agreed research and development efforts related to hemophilia B. These reimbursable amounts have been presented as Collaboration Revenue.

The Company generated no Collaboration Revenue for the year ended December 31, 2019 (December 31, 2018: nil; December 31, 2017: $4.6 million) from the co-development of hemophilia B.

4. Fair value measurement

The Company measures certain financial assets and liabilities at fair value, either upon initial recognition or for subsequent accounting or reporting.

The carrying amount of cash and cash equivalents, accounts receivable from collaborators, prepaid expenses, other assets, accounts payable, accrued expenses and other current liabilities reflected in the consolidated balance sheets approximate their fair values due to their short-term maturities.

The Company's only material financial assets measured at fair value using Level 1 inputs is cash and cash equivalents.

Liabilities measured at fair value using Level 3 as of December 31, 2019 inputs consisted of derivative financial instruments. Changes in Level 3 items during the years ended December 31, 2019, 2018 and 2017 are as follows:

	Contingent consideration	Derivative financial instruments	Total
		(in thousands)	
Balance at December 31, 2016	**$ 1,838**	**$ 62**	**$ 1,900**
Exercises of convertible loan warrants	—	(631)	(631)
Net losses recognized in profit or loss	3,002	2,192	5,194
Contingent consideration paid	(1,181)	—	(1,181)
Currency translation effects	305	12	317
Balance at December 31, 2017	**$ 3,964**	**$ 1,635**	**$ 5,599**
Net gains recognized in profit or loss	(3,846)	(208)	(4,054)
Currency translation effects	(118)	(52)	(170)
Balance at December 31, 2018	**$ —**	**$ 1,375**	**$ 1,375**
Net losses recognized in profit or loss	—	2,530	2,530
Exercise of warrants	—	(770)	(770)
Currency translation effects	—	(60)	(60)
Balance at December 31, 2019	**$ —**	**$ 3,075**	**$ 3,075**

Derivative financial instruments

The Company issued derivative financial instruments related to its collaboration with BMS and in relation to the issuance of the Hercules Technology Growth Corp. ("Hercules") loan facility.

BMS warrants

Pursuant to the BMS CLA, the Company granted BMS two warrants:

- A warrant allowing BMS to purchase a specific number of uniQure ordinary shares such that its ownership will equal 14.9% immediately after such purchase. The warrant can be exercised on the later of (i) the date on which the Company receives from BMS the Target Designation Fees (as defined in the BMS CLA) associated with the first six new targets (a total of seven Collaboration Targets); and (ii) the date on which BMS designates the sixth new target (the seventh Collaboration Target); and
- A warrant allowing BMS to purchase a specific number of uniQure ordinary shares such that its ownership will equal 19.9% immediately after such purchase. The warrant can be exercised on the later of (i) the date on which the Company receives from BMS the Target Designation Fees associated with the first nine new targets (a total of ten Collaboration Targets); and (ii) the date on which BMS designates the ninth new target (the tenth Collaboration Target).

As of December 31, 2019, BMS had designated a total of four Collaboration Targets, and as such, the warrants were not exercisable.

Pursuant to the terms of the BMS CLA the exercise price in respect of each warrant is equal to the greater of (i) the product of (A) $33.84, multiplied by (B) a compounded annual growth rate of 10% (or approximately $52.39 as of December 31, 2019) and (ii) the product of (A) 1.10 multiplied by (B) the VWAP for the 20 trading days ending on the date that is five trading days prior to the date of a notice of exercise delivered by BMS.

The fair value of the warrants as of December 31, 2019 is $3.1 million (December 31, 2018: $0.8 million). During the year ended December 31, 2019, the Company recognized a $2.3 million loss in non-operating income / expense (December 31, 2018: $0.5 million gain; December 31, 2017: $1.2 million loss) related to fair value changes of the BMS warrants. As of December 31, 2019, BMS had designated a total of four Collaboration Targets, and as such, the warrants were not exercisable. The Company estimated the exercise of the warrants to occur within two and four years after the balance sheet date. The Company classified the derivative financial liabilities as non-current at the balance sheet date.

The Company used Monte-Carlo simulations to determine the fair market value of the BMS warrants. The valuation model incorporates several inputs, the risk-free rate adjusted for the period affected, an expected volatility based on historical Company volatility, the expected yield on any dividends and management's expectations on the timelines of reaching certain defined trigger events for the exercising of the warrants, as well as management's expectations regarding the number of ordinary shares that would be issued upon exercise of the warrants. All of these represent Level 3 inputs. Additionally, the model assumes BMS will exercise the warrants only if it is financially rational to do so.

The Company conducted a sensitivity analysis to assess the impact on changes in assumptions on the fair value. Specifically, the Company examined the impact on the fair market value of the warrants by increasing the volatility by 10% to 82.5%. A further sensitivity analysis was performed assuming the warrants would be exercised a year later than currently estimated. The table below illustrates the impact on the fair market valuation associated with these changes in assumptions as of December 31, 2019.

	Total warrants in thousands
Base case	$ 3,075
Increase volatility by 10% to 82.5%	680
Extend exercise dates by one year	(31)

Hercules loan facility

On June 14, 2013, the Company entered into a venture debt loan facility (the "Original Facility") with Hercules (see note 8, "Long-term debt") pursuant to a Loan and Security Agreement (the "Loan Agreement"), which included a warrant maturing on February 5, 2019. The warrant was not closely related to the host contract and was accounted for separately as a derivative financial liability measured at fair value though profit or loss. The warrant included in the Original Facility remained in place following the 2014, 2016 and 2018 amendments of the loan. The Hercules warrants were exercised as of February 1, 2019. The Company issued 37,175 ordinary shares at $34.25 following the exercise of all Hercules warrants and receipt of $0.5 million from Hercules. As a result, the fair value of this derivative, recorded in other current liabilities, as of December 31, 2019 is nil (December 31, 2018: $0.6 million). During the year ended December 31, 2019, the Company recognized a $0.2 million loss in other non-operating income / (expense) (December 31, 2018: $0.3 million loss; December 31, 2017: $0.3 million loss) related to fair value changes of the Hercules warrants.

Contingent consideration

In connection with the Company's acquisition of the InoCard business ("InoCard") in 2014, the Company recorded contingent consideration related to amounts potentially payable to InoCard's former shareholders. The amounts payable in accordance with the sale and purchase agreement (as amended in August 2017) are contingent upon realization of milestones associated with its S100A1 protein research program. Following the discontinuation of the research program the Company since 2018 no longer expects to realize those milestones and recorded a $3.8 million gain within research and development expenses for the year ended December 31, 2018, to release the liability to profit and loss. Accordingly, the fair value of the contingent liability as of December 31, 2019 amounted to nil (December 31, 2018: nil).

The Company made $1.2 million in milestone payments related to the liability during the year ended December 31, 2017, 50% of which were settled through the issuance of 64,648 restricted ordinary shares on October 2, 2017. In addition, in 2017, the parties modified the conditions of the agreed milestone payments, including a reduction of the percentage of any future milestone that can be settled in the form of Company ordinary shares from 100% to 50%. The Company recorded $2.3 million expenses in research and development cost in the year ended December 31, 2017, related to the increase in fair value of the contingent consideration resulting from these modifications.

5. Property, plant and equipment, net

The following table presents the Company's property, plant and equipment as of December 31:

	December 31, 2019	December 31, 2018
	in thousands	
Leasehold improvements	$ 34,611	$ 32,462
Laboratory equipment	18,232	16,685
Office equipment	4,212	2,853
Construction-in-progress	341	73
Total property, plant, and equipment	57,396	52,073
Less accumulated depreciation	(28,625)	(22,894)
Property, plant and equipment, net	**$ 28,771**	**$ 29,179**

Total depreciation expense was $6.0 million for the year ended December 31, 2019 (December 31, 2018: $6.5 million, December 31, 2017: $7.0 million). Depreciation expense is allocated to research and development expenses to the extent it relates to the Company's manufacturing facility and equipment. All other depreciation expenses are allocated to selling, general and administrative expense.

The following table summarizes property, plant and equipment by geographic region.

	December 31, 2019	December 31, 2018
	in thousands	
Lexington, Massachusetts (United States of America)	$ 15,490	$ 14,598
Amsterdam (the Netherlands)	13,281	14,581
Total	**$ 28,771**	**$ 29,179**

6. Right-of-use asset and lease liabilities

The Company adopted ASU 2016-02 "Leases (Topic 842)" as well as ASU 2018-10 and ASU 2018-11, which both relate to improvements to ASC 842. The Company adopted the standard using the modified retrospective approach with an effective date as of the beginning of the Company's fiscal year, January 1, 2019 ("new lease accounting standard"). The standard requires the balance sheet recognition for leases. Prior years were not recast under the new standard and therefore, those amounts are presented in accordance with the requirements of the previously effective lease standard ASC 840 ("historic lease accounting standard"). The Company elected to utilize practical expedients available for expired or existing contracts which allowed the Company to carryforward historical assessments of (1) whether contracts are or contain leases, (2) lease classification, and (3) initial direct costs.

The Company's most significant leases relate to office and laboratory space under the following operating lease agreements:

Lexington, Massachusetts / United States

In July 2013, the Company entered into a lease for a facility in Lexington, Massachusetts, United States. The term of the lease commenced in November 2013, was set for 10 years starting from the 2014 rent commencement date and is non-cancellable. Originally, the lease for this facility had a termination date of 2024. In November 2018, the term was expanded by five years to June 2029. The lease continues to be renewable for two subsequent five-year terms. Additionally, the lease was expanded to include an additional 30,655 square feet within the same facility and for the same term. The lease of the expansion space commenced on June 1, 2019.

The contractually fixed annual increase of lease payments through 2029 for both the extension and expansion lease have been included in the lease payments.

Amsterdam / The Netherlands

In March 2016, the Company entered into a 16-year lease for a facility in Amsterdam, the Netherlands and

amended this agreement in June 2016. The Company consolidated its three Amsterdam sites into the new site at the end of May 2017. The lease for the new facility terminates in 2032, with an option to extend in increments of five-year periods. The lease contract includes variable lease payments related to annual increases in payments based on a consumer price index.

On December 1, 2017, the Company entered into an agreement to sub-lease three of the seven floors of its Amsterdam facility for a ten-year term ending on December 31, 2027, with an option for the sub-lessee to extend until December 31, 2031. The fixed lease payments to be received during the remaining eight-year term amount to $8.9 million (EUR 7.9 million) as of December 31, 2019.

Operating lease liabilities

As no implicit rate in relation to the three above facility leases and other equipment leases was readily available, the Company used an incremental borrowing rate to discount the lease payments. The Company derived the discount rates, adjusted for differences such as in the term and payment patterns, from the Company's loan from Hercules Capital, which was refinanced in December 2018.

The components of lease cost in accordance with the new lease accounting standard were as follows:

	Year ended December 31, 2019 (in thousands)
Operating lease cost	$ 4,474
Variable lease cost	507
Sublease income	(1,053)
Total lease cost	**$ 3,928**

The rent expense in accordance with the historical lease accounting standard for the years ended December 31, 2018, and December 31, 2017 was calculated on a straight-line basis over the term of the lease and considers $12.2 million of lease incentives received. Aggregate rent expense was as follows:

	Year ended December 31,	
	2018	2017
Rent expense-Lexington	$ 1,583	$ 1,103
Rent expense-Amsterdam	1,667	2,503
Total rent expense	**$ 3,250**	**$ 3,606**

The table below presents the lease-related assets and liabilities recorded on the Consolidate balance sheet in accordance with the new lease accounting standard.

	December 31, 2019 (in thousands)
Assets	
Operating lease right-of-use assets	**$ 26,797**
Liabilities	
Current	
Current operating lease liabilities	5,865
Non-current	
Non-current operating lease liabilities	31,133
Total lease liabilities	**$ 36,998**

Other information

The weighted-average remaining lease term as of December 31, 2019 is 10.3 years and the weighted-average discount rate as of this date is 11.33%.

The table below presents supplemental cash flow and non-cash information related to leases required in accordance with the new lease accounting standard.

	Year ended December 31, 2019 (in thousands)
Cash paid for amounts included in the measurement of lease liabilities	
Operating cash flows for operating leases [1)]	$ 4,717
Right-of-use asset obtained in exchange for lease obligation	
Operating lease [2)]	$ 9,002

([1)] The Company has received $1.5 million of landlord incentive payments as of December 31, 2019, which are not included in the cash paid amounts.)

([2)] The Company capitalized $19.0 million of operating right-of-use assets upon adoption of the new lease standard on January 1, 2019 that are not included in the movement for the year ended December 31, 2019.)

Undiscounted cash flows

The table below reconciles the undiscounted cash flows as of December 31, 2019, for each of the first five years and the total of the remaining years to the operating lease liabilities recorded on the Consolidated balance sheet as of December 31, 2019 in accordance with the new lease accounting standard.

	Lexington	Amsterdam[1)]	Other[1)]	Total
	(in thousands)			
2020	$ 3,360	$ 2,365	$ 141	$ 5,866
2021	3,455	1,892	141	5,488
2022	3,552	1,892	—	5,444
2023	3,650	1,892	—	5,542
2024	4,146	1,892	—	6,038
Thereafter	20,745	13,084	—	33,829
Total lease payments	$ 38,908	$ 23,017	$ 282	$ 62,207
Less: amount of lease payments representing interest payments	(15,014)	(10,178)	(17)	(25,209)
Present value of lease payments	23,894	12,839	265	36,998
Less: current operating lease liabilities	(3,360)	(2,364)	(141)	(5,865)
Non-current operating lease liabilities	**$ 20,534**	**$ 10,475**	**$ 124**	**$ 31,133**

(1) Payments are due in EUR and have been translated at the foreign exchange rate as of December 31, 2019, of $1.12 / €1.00)

As of December 31, 2018, aggregate minimum lease payments under the historical accounting standard ASC 840 (excluding payments from the sub-lease agreement) for the calendar years and lease incentives received were as follows:

	Lexington	Amsterdam[1)]	Total
	(in thousands)		
2019	$ 2,707	$ 1,963	$ 4,670
2020	3,360	1,970	5,330
2021	3,455	1,970	5,425
2022	3,552	1,970	5,522
2023	3,650	1,970	5,620
Thereafter	24,892	16,085	40,977
Total minimum lease payments	**$ 41,616**	**$ 25,926**	**$ 67,544**

7. Intangible assets

a. Acquired licenses

The following table presents the Company's acquired licenses as of December 31:

	December 31, 2019	December 31, 2018
	(in thousands)	
Licenses	$ 8,317	$ 7,528
Less accumulated amortization and impairment	(2,890)	(2,327)
Licenses, net	**$ 5,427**	**$ 5,201**

All intangible assets are owned by uniQure biopharma B.V, a subsidiary of the Company. The acquired licenses have a weighted average remaining life of 10.7 years as of December 31, 2019.

During the year ended December 31, 2019, the Company capitalized $1.0 million of expenditures related to contractual milestone payments under existing license agreements. During the year ended December 31, 2018, the Company capitalized $1.9 million of expenditures related to contractual milestone payments under existing license agreements as well as costs incurred in relation to entering into new license agreements. During the year ended December 31, 2018, the Company disposed a number of fully amortized, expired licenses.

As of December 31, 2019, the estimated future amortization expense for each of the five succeeding years and the period thereafter is as follows:

Years	Amount in thousands
2020	$ 582
2021	573
2022	545
2023	545
2024	515
Thereafter	2,667
Total	**$ 5,427**

The carrying amount of the Company's licenses by licensor is set out below.

	December 31, 2019	December 31, 2018
	in thousands	
Protein Sciences Corporation	$ 1,911	$ 2,084
St. Jude Children's Hospital	1,404	633
Other	2,112	2,484
Total	**$ 5,427**	**$ 5,201**

The amortization expense related to licenses for the year ended December 31, 2019 was $0.6 million (December 31, 2018: $0.4 million; December 31, 2017: $1.0 million).

b. Acquired research and development ("Acquired R&D")

The Company acquired research and development assets as part of its acquisition of InoCard in July 2014. Based on the review of pre-clinical data associated with those assets, the Company does not expect that it will pursue further research related to those assets. Accordingly, the Company recorded a $5.4 million impairment loss within research and development expenses in the year ended December 31, 2018, to reduce the asset's carrying amount to its fair value of nil.

8. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities include the following items:

	December 31, 2019	December 31, 2018
	(in thousands)	
Accruals for services provided by vendors-not yet billed	$ 5,425	$ 1,999
Personnel related accruals and liabilities	7,032	5,688
Derivative financial liability warrants (see note 4)	—	545
Total	**$ 12,457**	**$ 8,232**

9. Long-term debt

On June 14, 2013, the Company entered into a venture debt loan facility with Hercules, which was amended and restated on June 26, 2014, and again on May 6, 2016 ("2016 Amended Facility"). The 2016 Amended Facility extended the maturity date from June 30, 2018, to May 1, 2020. As of December 31, 2017, and December 31, 2016, $20.0 million was outstanding. The interest rate was adjustable and was the greater of (i) 8.25% or (ii) 8.25% plus the prime rate less 5.25%. Under the 2016 Amended Facility, the interest rate initially was 8.25% per annum. The interest-only payment period was extended by 12 months to November 30, 2018 as a result of raising more than $50.0 million in equity financing in October 2017.

On December 6, 2018, the Company signed an amendment to the Second Amended and Restated Loan and Security Agreement that both refinanced the existing $20 million 2016 Amended Facility and provided an additional commitment of $30 million (of which $15 million is subject to the discretion of Hercules) (the "2018 Amended Facility"). At signing, the Company drew down an additional $15 million for a total of $35 million outstanding. The Company has the right to draw another $15 million through June 30, 2020 subject to the terms of the 2018 Amended Facility. The 2018 Amended Facility extends the loan's maturity date from May 1, 2020 until June 1, 2023. The interest-only period was initially extended from November 2018 to January 1, 2021. The interest-only period was further extended to January 1, 2022 as a result of meeting the provision in the 2018 Amended Facility of raising more than $90.0 million in equity financing. The Company met this provision as a result of the follow-on public offering completed in September 2019. The Company is required to repay the facility in equal monthly installments of principal and interest between the end of the interest-only period and the maturity date. The interest rate continues to be adjustable and is the greater of (i) 8.85% or (ii) 8.85% plus the prime rate less 5.50% per annum.

Under the 2018 Amended Facility, the Company paid a facility fee of 0.50% of the $35 million outstanding as of signing and will owe a back-end fee of 4.95% of the outstanding debt. In addition, in May 2020 the Company owes a back-end fee of 4.85% of $20 million, which is the amount of debt raised under the 2016 Amended Facility.

The amortized cost (including interest due presented as part of accrued expenses and other current liabilities) of the 2018 Amended Facility was $36.3 million as of December 31, 2019, compared to $35.7 million as of December 31, 2018, and is recorded net of discount and debt issuance costs. The foreign currency loss on the loan was $0.7 million in 2019 (2018: loss of $0.9 million; 2017: gain of $2.6 million). The fair value of the loan approximates its carrying amount. Inputs to the fair value of the loan are considered Level 3 inputs.

Interest expense recorded during the years ended December 31 was as follows:

Years	Amount in millions
2019	$ 3.7
2018	2.0
2017	2.2

As a covenant in the 2018 Amended Facility, the Company has periodic reporting requirements and is required to keep a minimum cash balance deposited in bank accounts in the United States, equivalent to the lesser of 65% of the outstanding balance of principal due or 100% of worldwide cash and cash equivalents. This restriction on cash and cash equivalents only relates to the location of the cash and cash equivalents, and such cash and cash equivalents can be used

at the discretion of the Company. In combination with other covenants, the 2018 Amended Facility restricts the Company's ability to, among other things, incur future indebtedness and obtain additional debt financing, to make investments in securities or in other companies, to transfer assets, to perform certain corporate changes, to make loans to employees, officers and directors, and to make dividend payments and other distributions. The Company secured the facilities by pledging the shares in its subsidiaries, substantially all its receivables, moveable assets as well as the equipment, fixtures, inventory and cash of uniQure Inc.

The 2018 Amended Facility contains provisions that include the occurrence of a material adverse effect, as defined therein, which would entitle Hercules to declare all principal, interest and other amounts owed by the Company immediately due and payable. As of December 31, 2019, the Company was in compliance with all covenants and provisions.

The aggregate maturities of the loan, including $11.5 million of coupon interest payments and financing fees, for each of the 41 months subsequent to December 31, 2019, are as follows:

Years	Amount in thousands
2020	$ 4,119
2021	3,141
2022	25,002
2023	14,269
Total	**$ 46,531**

10. Shareholders' equity

As of December 31, 2019, the Company's authorized share capital is €3.0 million (exchange rate as of December 31, 2019, of $1.12 / €1.00; $3.4 million), divided into 60,000,000 ordinary shares, each with a nominal value of €0.05. Under Dutch law, the authorized share capital is the maximum capital that the Company may issue without amending its articles of association.

All ordinary shares issued by the Company were fully paid. Besides the minimum amount of share capital to be held under Dutch law, there are no distribution restrictions applicable to the equity of the Company.

As of December 31, 2019, and 2018 and 2017 the Company's reserves were restricted for payment of dividends for accumulated foreign currency translation losses of $6.7 million, $7.3 million and $3.8 million, respectively.

On September 10, 2019, the Company completed a follow-on public offering of 4,891,305 ordinary shares at a public offering price of $46.00 per ordinary share, and on September 13, 2019, the Company completed the sale of an additional 733,695 ordinary shares at a public offering price of $46.00 per ordinary share pursuant to the exercise by the underwriters of the option to purchase additional ordinary shares, resulting in total gross proceeds to the Company of $258.8 million. The net proceeds to the Company from this offering were $242.7 million, after deducting underwriting discounts and commissions and other offering expenses payable by the Company. The Company deducted $0.6 million of expenses incurred related to this offering from additional paid-in capital in the accompanying consolidated balance sheets and reflected this within the proceeds from public offering of shares, net of issuance costs within the cash flows from financing activities.

On May 7, 2018, the Company completed a follow-on public offering of 5,175,000 ordinary shares at a public offering price of $28.50 per ordinary share, resulting in gross proceeds to the Company of $147.5 million. The net proceeds to the Company from this offering were $138.4 million, after deducting underwriting discounts and commissions and other offering expenses payable by the Company. The Company deducted $0.2 million of expenses incurred related to this offering from additional paid-in capital in the accompanying consolidated balance sheet and reflected this within the proceeds from public offering of shares, net of issuance costs within the cash flows from financing activities.

On October 27, 2017, the Company completed a follow-on public offering of 5,000,000 ordinary shares at a public offering price of $18.25 per ordinary share, resulting in gross proceeds to the Company of $91.3 million. The net proceeds to the Company from this offering were $85.3 million, after deducting underwriting discounts and commissions and other offering expenses payable by the Company. The Company deducted $0.5 million of expenses incurred related to this from additional paid in capital in the accompanying consolidated balance sheet and reflected this within the proceeds from public offering of shares, net of issuance costs within the cash flows from financing activities.

In February 2019 the Company issued 37,175 ordinary shares to Hercules pursuant to exercised warrants for $0.5 million in aggregate cash consideration. The Company deemed the sale and issuance of these shares to be exempt from registration under the Securities Act in reliance on Regulation S of the Securities Act, as an offshore offering of securities and such shares were issued as restricted shares. Hercules represented to us that they were in compliance with the requirements of Regulation S.

In December 2017 the Company issued a total of 114,172 restricted ordinary shares in relation to the exercise of 128,710 warrants issued to former lenders of a loan, which was converted into equity in July 2013 prior to the Company's initial public offering. The ordinary shares were issued at an exercise price of €10.10, or approximately $12.0 depending on the foreign exchange rate as of the date of warrant exercise. In 2017, certain of these lenders (Forbion and Coller) qualified as related parties to the Company at the time of the transaction.

On October 2, 2017, the Company issued 64,648 ordinary shares to the sellers of the Inocard business in connection with the amended purchase agreement by which the Company acquired the Inocard business. No cash consideration was paid for the shares, as such shares were issued as amended consideration for the previous acquisition of the Inocard business. The Company deemed the offer and issuance of these shares to be exempt from registration under the Securities Act in reliance on Regulation S of the Securities Act, as an offshore offering of securities and such shares were issued as restricted shares. The sellers of the Inocard business represented to the Company that they were in compliance with the requirements of Regulation S.

On May 2, 2018, the Company and Leerink mutually terminated with immediate effect the September 2017 Sales Agreement with Leerink for an at-the-market offering program ("ATM program"). The ATM program allowed for the offer and sale of up to 5 million ordinary shares at prevailing market prices from time to time. The Company did not offer or sell any ordinary shares under the ATM program.

11. Share-based compensation

Share-based compensation expense recognized by classification included in the consolidated statements of operations and comprehensive loss was as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Research and development	$ 8,029	$ 3,994	$ 3,945
Selling, general and administrative	9,439	6,699	6,335
Total	**$ 17,468**	**$ 10,693**	**$ 10,280**

Share-based compensation expense recognized by award type was as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Award type			
Share options	$ 7,896	$ 4,766	$ 3,246
Restricted share units ("RSUs")	4,117	3,020	2,588
Performance share units ("PSUs")	5,455	2,907	4,446
Total	**$ 17,468**	**$ 10,693**	**$ 10,280**

As of December 31, 2019, the unrecognized compensation cost related to unvested awards under the various share-based compensation plans were:

Award type	Unrecognized share-based compensation expense (in thousands)	Weighted average remaining period for recognition (in years)
Share options	$ 19,750	2.90
Restricted share units	7,035	1.90
Performance share units	5,711	1.78
Total	**$ 32,496**	**2.49**

The Company satisfies the exercise of share options and vesting of RSUs and PSUs through newly issued shares.

The Company's share-based compensation plans include the 2014 Amended and Restated Share Option Plan (the "2014 Plan") and inducement grants under Rule 5653(c)(4) of the NASDAQ Global Select Market with terms similar to the 2014 Plan (together the "2014 Plans"). The Company previously had a 2012 Equity Incentive Plan (the "2012 Plan").

At the general meeting of shareholders on January 9, 2014, the Company's shareholders approved the adoption of the 2014 Plan. At the annual general meetings of shareholders in June 2015, 2016 and 2018, uniQure shareholders approved amendments of the 2014 Plan, increasing the shares authorized for issuance by 1,070,000 shares in 2015, 3,000,000 in 2016 and 3,000,000 shares in 2018, for a total of 8,601,471 shares.

Share options

Share options are priced on the date of grant and, except for certain grants made to non-executive directors, vest over a period of four years. The first 25% vests after one year from the initial grant date and the remainder vests in equal quarterly installments over years two, three and four. Certain grants to non-executive directors vest in full after one year. Any options that vest must be exercised by the tenth anniversary of the initial grant date.

2014 Plan

The following tables summarize option activity under the Company's 2014 Plans for the year ended December 31, 2019:

	Options			
	Number of ordinary shares	Weighted average exercise price	Weighted average remaining contractual life (in years)	Aggregate intrinsic value (in thousands)
Outstanding at December 31, 2018	**2,673,712**	**$ 15.09**	**7.98**	**$ 39,616**
Granted	647,526	$ 40.31		
Forfeited	(202,926)	$ 20.09		
Expired	(543)	$ 12.26		
Exercised	(434,665)	$ 11.91		
Outstanding at December 31, 2019	**2,683,104**	**$ 21.29**	**7.46**	**135,238**
Thereof, fully vested and exercisable at December 31, 2019	1,336,767	$ 13.76	6.62	77,394
Thereof, outstanding and expected to vest at December 31, 2019	1,346,337	$ 28.76	8.29	57,844
Outstanding and expected to vest at December 31, 2018	1,599,797	$ 17.96		

Total weighted average grant date fair value of options issued during the period (in $ millions)		$	15.3
Granted to directors and officers during the period (options, grant date fair value $ in millions)	223,097	$	4.1
Proceeds from option sales during the period (in $ millions)		$	5.2

The following table summarizes information about the weighted average grant-date fair value of options during the years ended December 31:

	Options	Weighted average grant-date fair value
Granted, 2019	647,526	$ 23.57
Granted, 2018	937,832	15.90
Granted, 2017	1,295,350	3.87
Vested, 2019	698,127	10.38
Forfeited, 2019	(202,926)	12.09

The following table summarizes information about the weighted average grant-date fair value of options at December 31:

	Options	Weighted average grant-date fair value
Outstanding and expected to vest, 2019	1,346,337	$ 17.05
Outstanding and expected to vest, 2018	1,599,797	10.83

The fair value of each option issued is estimated at the respective grant date using the Hull & White option pricing model with the following weighted-average assumptions:

	Year ended December 31,		
Assumptions	**2019**	**2018**	**2017**
Expected volatility	70%-75%	75%-80%	75%-80%
Expected terms	10 years	10 years	10 years
Risk free interest rate	1.92% - 2.87%	2.67% - 3.20%	2.39% - 2.81%
Expected dividend yield	0%	0%	0%

The Hull & White option model captures early exercises by assuming that the likelihood of exercises will increase when the share price reaches defined multiples of the strike price. This analysis is performed over the full contractual term. The following table summarizes information about options exercised during the years ended December 31:

	Exercised during the year	Intrinsic value in thousands
2019	434,665	$ 17,700
2018	388,203	7,515
2017	198,552	1,291

Restricted Share Units (RSUs)

The following table summarizes the RSU activity for the year ended December 31, 2019:

	RSU	
	Number of ordinary shares	Weighted average grant-date fair value
Non-vested at December 31, 2018	**412,321**	**$ 16.49**
Granted	198,504	$ 38.63
Vested	(205,583)	$ 15.31
Forfeited	(34,412)	$ 20.62
Non-vested at December 31, 2019	**370,830**	**$ 28.62**
Total weighted average grant date fair value of RSUs granted during the period (in $ millions)		$ 7.7
Granted to directors and officers during the period (shares, $ in millions)	109,349	$ 4.0

The following table summarizes information about the weighted average grant-date fair value of RSUs granted during the years ended December 31:

	Granted during the year	Weighted average grant-date fair value
2019	198,504	$ 38.63
2018	262,599	23.61
2017	603,350	5.86

The following table summarizes information about the total fair value of RSUs that vested during the years ended December 31:

	Total fair value (in thousands)
2019	$ 10,152
2018	8,546
2017	2,917

RSUs vest over one to three years. RSUs granted to non-executive directors will vest one year from the date of grant.

Performance Share Units (PSUs)

The following table summarizes the PSU activity for the year ended December 31, 2019:

	PSU	
	Number of ordinary shares	Weighted average grant-date fair value
Non-vested at December 31, 2018	**377,169**	**$ 16.73**
Granted	132,362	$ 31.71
Vested	(30,109)	$ 11.83
Non-vested at December 31, 2019	**479,422**	**$ 21.17**
PSUs awarded but not yet earned	83,489	$ 71.66
Total non-vested and discretionary PSUs	562,911	$ 28.66
Total weighted average grant date fair value of PSUs granted and awarded during the period (in $ millions)		$ 10.2

In January 2019, the Company awarded PSUs to its executives and other members of senior management. These PSUs were earned in January 2020 based on the Board's assessment of the level of achievement of agreed upon performance targets through December 31, 2019. The PSUs awarded for the year ended December 31, 2019 will vest on the third anniversary of the grant, subject to the grantee's continued employment.

The following table summarizes information about the weighted average grant-date fair value, determined at of the date these were earned, of PSUs granted during the years ended December 31:

	Granted during the year	Weighted average grant-date fair value
2019	132,362	$ 31.71
2018	—	$ —
2017	550,570	$ 17.15

The following table summarizes information about the total fair value of PSUs that vested during the years ended December 31:

	Total fair value (in thousands)
2019	$ 1,056
2018	1,350
2017	1,730

Employee Share Purchase Plan ("ESPP")

In June 2018 the Company's shareholders adopted and approved an ESPP allowing the Company to issue up to 150,000 ordinary shares. The ESPP is intended to qualify under Section 423 of the Internal Revenue Code of 1986. Under the ESPP, employees are eligible to purchase ordinary shares through payroll deductions, subject to any plan limitations. The purchase price of the shares on each purchase date is equal to 85% of the lower of the closing market price on the offering date or the closing market price on the purchase date of each three-month offering period. During the year ended December 31, 2019, 9,202 shares have been issued (December 31, 2018: 2,591). As of December 31, 2019, a total of 138,207 ordinary shares remains available for issuance under the ESPP plan.

2012 Plan

The following table summarizes option activity under the Company's 2012 Plan for the year ended December 31, 2019:

	2012 plan			
	Options	Weighted average exercise price	Weighted average remaining contractual life in years	Aggregate intrinsic value (in thousands)
Outstanding at December 31, 2018	**32,567**	**€ 5.23**	**3.62**	**$ 939**
Exercised	(18,567)	€ 3.07		
Forfeited	—	€ —		
Expired	—	€ —		
Outstanding, fully vested and exercisable at December 31, 2019	**14,000**	**€ 8.09**	**3.10**	**876**
Proceeds from option sales (in million)		$ 0.1		

The following table summarizes information about options exercised during the years ended December 31:

	Exercised during the year	Intrinsic value (in thousands)
2019	18,567	$ 1,014
2018	40,251	964
2017	405,188	1,176

12. Expenses by nature

Operating expenses excluding expenses presented in other expenses included the following expenses by nature:

	Years ended December 31,		
	2019	2018	2017
	(in thousands)		
Employee-related expenses	$ 59,130	$ 46,254	$ 46,373
Laboratory and development expenses	30,130	23,596	17,737
Office and housing expenses	10,588	7,281	9,327
Legal and advisory expenses	11,297	7,748	8,121
Depreciation, amortization and impairment expenses	6,669	12,415	6,779
Patent and license expenses	1,654	1,202	817
Other operating expenses	8,813	1,618	7,653
Total	**$ 128,281**	**$ 100,114**	**$ 96,807**

Details of employee-related expenses for the years ended December 31 are as follows:

	Years ended December 31,		
	2019	2018	2017
	in thousands, except for employee numbers		
Wages and salaries	$ 32,029	$ 26,646	$ 25,131
Share-based compensation expenses	17,533	10,708	10,280
Consultant expenses	2,464	2,974	4,758
Social security costs	2,727	2,231	2,077
Health insurance	1,933	1,750	1,536
Pension costs-defined contribution plans	650	628	802
Other employee expenses	1,794	1,317	1,789
Total	**$ 59,130**	**$ 46,254**	**$ 46,373**
Number of employees at the end of the period	248	212	202

13. Other non-operating income / (expense)

Other non-operating income / (expense) consists of changes in the fair value of derivative financial instruments.

	Years ended December 31,		
	2019	2018	2017
	(in thousands)		
Other non-operating income:			
Derivative gains	$ —	$ 208	$ —
Total other non-operating income:	—	208	—
Other non-operating expense:			
Derivative losses	(2,530)	—	(2,192)
Finance expenses	—	—	(243)
Total other non-operating expense:	(2,530)	—	(2,435)
Other non-operating income / (expense), net	**$ (2,530)**	**$ 208**	**$ (2,435)**

The Company recorded a net loss of $2.3 million for the year ended December 31, 2019, compared to a net gain of $0.5 million and a net loss of $1.2 million for the years ended December 31, 2018 and December 31, 2017, respectively, related to the derivative financial instruments issued as part of its collaboration with BMS and a net loss of $0.2 million for the year ended December 31, 2019 (December 31, 2018: $0.3 million net loss; December 31, 2017: $0.3 million net loss) related to warrants issued to Hercules (see note 4, “Fair value measurement”). Also, the Company recognized a $0.7 million loss for the year ended December 31, 2017, related to warrants issued in connected with the 2013 convertible loan.

14. Income taxes

a. Income tax benefit / (expense)

No current tax charges or liabilities were recorded in 2019 by the Company's Dutch and U.S entities. Due to the uncertainty surrounding the realization of favorable tax attributes in future tax returns, the Company has recorded a full valuation allowance against the Company's net deferred tax assets.

For the years ended December 31, 2019, 2018 and 2017, loss before income taxes consists of the following:

	Years ended December 31,		
	2019	2018	2017
	(in thousands)		
Dutch operations	$ (111,820)	$ (85,721)	$ (60,966)
U.S. operations	(12,381)	2,646	(18,493)
Foreign operations	—	3	—
Total	**$ (124,201)**	**$ (83,073)**	**$ (79,459)**

The income tax benefit / (expense) for the years ended December 31, 2019, 2018 and 2017, consists of the following:

	Years ended December 31,		
	2019	2018	2017
	(in thousands)		
Current tax (expense) / benefit			
Dutch operations	$ —	$ —	$ —
U.S. operations	—	—	—
Foreign operations	—	(22)	(10)
Total current income tax (expense) / benefit	$ —	$ (22)	$ (10)
Deferred tax (expense) / benefit			
Dutch operations	$ —	$ (209)	$ 209
U.S. operations	—	—	—
Foreign operations	—	—	—
Total deferred income tax (expense) / benefit	$ —	$ (209)	$ 209
Total income tax (expense) / benefit	**$ —**	**$ (231)**	**$ 199**

b. Tax rate reconciliation

The reconciliation of the amount of income tax benefit / (expense) that would result from applying the Dutch statutory income tax rate to the Company's reported amount of income tax benefit / (expense) for the years ended December 31, 2019, 2018 and 2017, is as follows:

	Years ended December 31,		
	2019	2018	2017
	(in thousands)		
Loss before income tax expense for the period	$ (124,201)	$ (83,073)	$ (79,459)
Expected income tax benefit at the tax rate enacted in the Netherlands (25%)	31,050	20,768	19,865
Difference in tax rates between the Netherlands and foreign countries	(495)	(106)	1,664
Net change in valuation allowance	(25,583)	(19,207)	(17,358)
Non-deductible expenses	(4,972)	(2,648)	(3,248)
Change in fair value of contingent consideration	—	962	(724)
Income tax (expense) / benefit	**$ —**	**$ (231)**	**$ 199**

Non-deductible expenses predominantly relate to share-based compensation expenses for an amount of $4.4 million in 2019 (2018: $2.7 million; 2017: $2.5 million) and non-deductible results on derivative financial instruments of $0.6 million (2018: $0.0 million; 2017: $0.5 million).

c. Significant components of deferred taxes

The tax effects of temporary differences and carryforwards that give rise to significant portions of deferred tax assets and deferred tax liabilities at December 31, 2019 and 2018 are as follows:

	Years ended December 31,	
	2019	2018
	(in thousands)	
Deferred tax assets:		
Net operating loss carryforwards	$ 99,644	$ 74,529
Intangible assets	770	847
Lease liabilities	7,861	—
Property, plant and equipment	761	561
Deferred revenue	6,676	7,481
Accrued expenses and other current liabilities	628	1,682
Gross deferred tax asset	$ 116,340	$ 85,100
Less valuation allowance	(109,856)	(85,100)
Net deferred tax asset	$ 6,484	$ —
Right-of-use asset	(6,484)	—
Net deferred tax liability	$ (6,484)	$ —
Net deferred tax asset / (liability)	**$ —**	**$ —**

Changes in the valuation allowance were as follows:

	Years ended December 31,		
	2019	2018	2017
	(in thousands)		
January 1,	$ 85,100	$ 93,682	$ 82,642
Changes related to reduction of deferred revenue recorded in equity upon implementation of ASC 606 Revenue recognition as of January 1, 2018	—	(6,229)	—
Changes recorded in profit and loss	25,583	19,207	19,080
Increase/(Reduction) related to 2019 and 2018, respectively, Dutch tax reforms	4,059	(15,670)	—
Reduction related to 2017 US tax reform	—	—	(1,722)
Other changes including currency translation effects	(4,886)	(5,890)	(6,318)
December 31,	**$ 109,856**	**$ 85,100**	**$ 93,682**

Included within changes recorded in profit and loss for the year ended December 31, 2019 is the utilization of $3.7 million of U.S. net operating loss carryforwards ($4.5 million utilization for the year ended December 31, 2018 and $0.0 for the year ended December 31, 2017).

The valuation allowance at December 31, 2019 was primarily related to net operating loss carryforwards that, in the judgment of management, are not more-likely than-not to be realized. Management considered projected future taxable income and tax-planning strategies in making this assessment. There is also a portion of the valuation allowance for deferred tax assets for which subsequently measured tax benefits will be credited directly to contributed capital as it relates to follow-on offering costs. As of December 31, 2019, that amount was $6.9 million ($3.3 million as of December 31, 2018).

In the Netherlands, changes to corporate taxes were enacted in December 2019. The changes increase the corporate tax rate from 22.55% to 25.00% for the fiscal year 2020 and decrease the corporate tax rate to 21.7%, effective January 1, 2021. The Company remeasured its deferred tax assets and liabilities using a rate of 21.7% instead of the 20.5% rate effective in 2019 as it does not expect to utilize any of its loss carryforwards prior to 2021. This resulted in a $4.1 million increase of both the gross deferred tax asset and the valuation allowance in the year ended December 31, 2019. A tax reform in December 2018 limited the carryforward of tax losses arising from January 1, 2019, to six years after the end of the respective period. Tax losses incurred prior to this date continue to expire nine years after the end of the respective period. The 2018 Dutch tax reform had initially lowered the tax rate from 25.0% to 20.5%. This rate reduction was partially reversed through the 2019 Dutch tax reform.

The Dutch fiscal unity has as of December 31, 2019 an estimated $414.0 million (2018: $311.7 million; 2017: $246.0 million) of taxable losses that can be offset in the following six to eight years. The expiration dates of these Dutch

losses are summarized in the following table. In the year ended December 31, 2019 unused tax losses of $20.7 million (December 31, 2018: $20.0 million) expired.

	2020	2021	2022	2023	2024-2027
	(in thousands)				
Loss expiring	$ 18,479	$ 13,905	$ 23,664	$ 23,047	$ 334,859

In the U.S., the tax act known as the Tax Cuts and Jobs Act ("the Act") was enacted on December 22, 2017. The Act reduced the corporate tax rate from 35% to 21%, effective January 1, 2018. As a foreign domiciled entity, the most significant impact of the Act related to the tax rate applicable to the Company's U.S. operating entity, resulting in a $1.7 million reduction of both the gross deferred tax asset and the valuation allowance in the year ended December 2017. In addition, the Act limits the utilization of tax losses incurred after January 1, 2018, to 80% of taxable income. The Company did not identify any further significant impacts related to the Act during 2018. The tax losses incurred prior to January 1, 2018 are approximately $55.1 million. As of December 31, 2019, the estimated remaining tax losses available for carry forward are $46.7 million. These losses will expire between 2035 and 2037.

Under the provision of the Internal Revenue Code, the U.S. net operating losses may become subject to an annual limitation in the event of certain cumulative exchange in the ownership interest of significant shareholders over a three-year period in excess of 50 percent, as defined under Section 382 and 383 of the Internal Revenue Code. This could limit the amount of tax attributes that can be utilized annually to offset future taxable income or tax liabilities. The amount of the annual limitation is determined based on the value of the Company immediately prior to the ownership change. Subsequent ownership changes may further affect the limitation.

There are no significant unrecognized tax benefits as of December 31, 2019 and 2018.

15. Basic and diluted earnings per share

Diluted earnings per share is calculated by adjusting the weighted average number of ordinary shares outstanding, assuming conversion of all potentially dilutive ordinary shares. As the Company has incurred a loss in the years presented, all potentially dilutive ordinary shares would have an antidilutive effect, if converted, and thus have been excluded from the computation of loss per share.

The potentially dilutive ordinary shares are summarized below:

	Years ended December 31,		
	2019	2018	2017
	(ordinary shares)		
BMS warrants	8,893,000	8,575,000	6,800,000
Stock options under 2014 Plans	2,683,104	2,673,712	2,456,433
Non-vested RSUs and earned PSUs	850,252	789,490	1,194,737
Stock options under 2012 Plan	14,000	32,567	72,818
Hercules warrants (exercised February 1, 2019)	—	37,175	37,175
Employee share purchase plan	485	1,012	—
Total potential dilutive ordinary shares	**12,440,841**	**12,108,956**	**10,561,163**

16. Commitments and contingencies

In the course of its business, the Company enters as a licensee into contracts with other parties with regard to the development and marketing of its pipeline products. Among other payment obligations, the Company is obligated to pay royalties to the licensors based on future sales levels and milestone payments whenever specified development, regulatory and commercial milestones are met. As both future sales levels and the timing and achievement of milestones are uncertain, the financial effect of these agreements cannot be estimated reliably.

17. Related party transaction

On August 20, 2019, the Company promoted Sander van Deventer, M.D., Ph.D., to Executive Vice President, Research and Product Development, and Alex Kuta, Ph.D., to Executive Vice President, Operations. Dr. van Deventer, in addition to his responsibilities for research, will now also be responsible for the Company's product development. Dr. Kuta, in addition to regulatory affairs, will now also be responsible for global quality as well as GMP manufacturing at uniQure's state-of-the-art facility in Lexington, Massachusetts. As a result of these changes, the Company eliminated the Chief Operating Officer role, and Scott McMillan, Ph.D. retired from uniQure.

In August 2019, the Company entered into an Amended and Restated Agreement Collaboration and License Agreement ("Amended CLA") as well as an additional new Collaboration and License Agreement ("New CLA") with its related party 4DMT Molecular Therapeutics, Inc. ("4DMT"). In the Amended CLA, the Company received from 4DMT an exclusive, sublicensable, worldwide license under certain 4DMT intellectual property rights to research, develop, make, use, and commercialize previously selected AAV capsid variants and certain associated products using 4DMT proprietary AAV technology for delivery of gene therapy constructs to cells in the central nervous system and the liver ("the Field"). In the New CLA, the parties agreed to research and develop, at 4DMT's cost, new AAV capsid variants using 4DMT proprietary AAV technology for delivery of up to six additional transgene constructs in the Field that will be selected by the Company.

On June 13, 2018, the Company shareholders voted to approve the appointment of Robert Gut, M.D., Ph.D. as a non-executive director on our Board of Directors. On August 20, 2018, Dr. Gut was appointed as the Company's Chief Medical Officer following his resignation as a non-executive director. On October 24, 2018, at an extraordinary general meeting, the Company's shareholders voted to approve the appointment of Dr. Gut as executive director on the Board of Directors. Dr. Gut's annual base salary will be $425,000 and he will be eligible for an annual bonus of 40% of his base salary. Dr. Gut was granted 35,000 restricted stock units vesting in equal installments over three years as well as an option to purchase 70,000 ordinary shares of the Company that will vest over a period of four years. In addition, Dr. Gut retains his option to purchase 10,000 ordinary shares vesting over three years, which he was granted upon his appointment as a non-executive director in June 2018.

On August 7, 2017, the Company appointed Dr. Sander van Deventer as its Chief Scientific Officer and General Manager of its Amsterdam site. Dr. van Deventer served on the Company's Board of Directors until September 14, 2017. Dr. van Deventer has resigned as Managing Partner of Forbion Capital Partners and became an Operating Partner with Forbion Capital Partners for up to 50% of his time. Dr. van Deventer is entitled to €200,000 gross annual salary ("Base Salary"), including an 8% holiday allowance to be paid annually in May based upon the previous year's gross annual salary. Dr. van Deventer will also be eligible for a bonus amounting to a maximum of 40% of his annual gross salary, such amount to be determined by the Board of Directors. On September 20, 2017, Dr. van Deventer was granted an option to purchase 150,000 shares with an exercise price of $8.49, in accordance with the Company's Amended and Restated 2014 Share Incentive Plan.

18. Subsequent events

None.

EXHIBIT INDEX

Exhibit No.	Description
3.1	Amended Articles of Association of the Company (incorporated by reference to Exhibit 3.1 of the Company's annual report on Form 10-K for the year ended December 31, 2018 (file no. 0001-36294) filed with the Securities and Exchange Commission).
4.1*	Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.
10.1t	2014 Share Incentive Plan (incorporated by reference to Exhibit 4.3 of the Company's registration statement on Form S-8 (file no. 333-225629) filed with the Securities and Exchange Commission).
10.2t	Form of Inducement Share Option Agreement under 2014 Share Incentive Plan (incorporated by reference to Exhibit 10.2 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2016 filed with the Securities and Exchange Commission).
10.3t	Form of Share Option Agreement under 2014 Share Incentive Plan (incorporated by reference to Exhibit 10.3 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2016 filed with the Securities and Exchange Commission).
10.4t	Form of Restricted Stock Unit Award under the 2014 Share Incentive (incorporated by reference to Exhibit 10.4 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2017 filed with the Securities and Exchange Commission).
10.5t	Form of Performance Stock Unit Award under the 2014 Share Incentive Plan (incorporated by reference to Exhibit 10.4 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2017 filed with the Securities and Exchange Commission).
10.6t	Employment Agreement dated December 9, 2014 between uniQure, Inc. and Matthew Kapusta (incorporated by reference to Exhibit 10.6 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2016 filed with the Securities and Exchange Commission).
10.7t	Amendment to the Employment Agreement between uniQure, Inc. and Matthew Kapusta, dated March 14, 2017 (incorporated by reference to Exhibit 10.7 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2016 filed with the Securities and Exchange Commission).
10.8t	Amendment to the Employment Agreement between uniQure, Inc. and Matthew Kapusta, dated October 26, 2017 (incorporated by reference to Exhibit 10.1 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on September 31, 2017 filed with the Securities and Exchange Commission).
10.10	Patent License Agreement (L-107-2007), effective as of May 2, 2007, by and between the Company and the National Institutes of Health, as amended on December 31, 2009, May 31, 2013 and November 11, 2013 (incorporated by reference to Exhibit 10.1 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on March 31, 2017 filed with the Securities and Exchange Commission).
10.11	Patent License Agreement (L-116-2011), effective as of August 10, 2011, by and between the Company and National Institutes of Health, as amended on May 31, 2013 and November 11, 2013 (incorporated by reference to Exhibit 10.2 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on March 31, 2017 filed with the Securities and Exchange Commission).
10.15	Warrant Agreement, dated as of September 20, 2013, by and among the Company, uniQure Biopharma B.V. and Hercules Technology Growth Capital, Inc. (incorporated by reference to Exhibit 10.18 of the Company's registration statement on Form F-1 (file no. 333-193158) filed with the Securities and Exchange Commission).
10.18	Lease relating to 113 Hartwell Avenue, Lexington, Massachusetts, dated as of July 24, 2013, by and between the Company and King113 Hartwell LLC (incorporated by reference to Exhibit 10.28 of the Company's registration statement on Form F-1 (file no. 333-193158) filed with the Securities and Exchange Commission).

10.19	Business Acquisition Agreement, dated as of February 16, 2012, by and among Amsterdam Molecular Therapeutics (AMT) Holding N.V., the Company and the other Parties listed therein (incorporated by reference to Exhibit 10.29 of the Company's registration statement on Form F-1 (file no. 333-193158) filed with the Securities and Exchange Commission).
10.20	Deed of Assignment of Certain Assets and Liabilities of Amsterdam Molecular Therapeutics (AMT) Holding N.V., dated as of April 5, 2012, by and among Amsterdam Molecular Therapeutics (AMT) Holding B.V., Amsterdam Molecular Therapeutics (AMT) Holding IP B.V. and Amsterdam Molecular Therapeutics (AMT) Holding N.V. (incorporated by reference to Exhibit 10.30 of the Company's registration statement on Form F-1 (file no. 333-193158) filed with the Securities and Exchange Commission).
10.21	Agreement for Transfer of Certain Assets and Liabilities of Amsterdam Molecular Therapeutics (AMT) Holding N.V., dated as of February 16, 2012, by and among Amsterdam Molecular Therapeutics (AMT) Holding B.V., Amsterdam Molecular Therapeutics (AMT) Holding IP B.V. and Amsterdam Molecular Therapeutics (AMT) Holding N.V. (incorporated by reference to Exhibit 10.31 of the Company's registration statement on Form F-1 (file no. 333-193158) filed with the Securities and Exchange Commission).
10.22†	Collaboration and License Agreement, dated January 17, 2014, by and between uniQure biopharma B.V. and 4D Molecular Therapeutics, LLC (incorporated by reference to Exhibit 10.32 of the Company's registration statement on Form F-1 (file no. 333-193158) filed with the Securities and Exchange Commission).
10.26	Second Amended and Restated Loan and Security Agreement, dated as of May 6, 2016 by and among uniQure Biopharma B.V., uniQure, Inc., uniQure IP B.V., the Company's subsidiaries listed therein, and Hercules Technology Growth Capital, Inc (incorporated by reference to Exhibit 10.30 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2016 filed with the Securities and Exchange Commission.
10.27†	Collaboration and License Agreement by and between uniQure Biopharma B.V. and Bristol-Myers Squibb Company dated April 6, 2015 (incorporated by reference to Exhibit 4.30 of the Company's annual report on Form 20-F (file no. 001-36294) filed with the Securities and Exchange Commission).
10.28†	Share Subscription Agreement by and between uniQure N.V. and Bristol-Myers Squibb Company dated April 6, 2015 (incorporated by reference to Exhibit 4.31 of the Company's annual report on Form 20-F (file no. 001-36294) filed with the Securities and Exchange Commission).
10.29†	Investor Agreement by and between uniQure Biopharma B.V. and Bristol-Myers Squibb Company dated April 6, 2015 (incorporated by reference to Exhibit 4.32 of the Company's annual report on Form 20-F (file no. 001-36294) filed with the Securities and Exchange Commission).
10.30†	Seventh Collaboration Warrant Agreement dated April 6, 2015 issued to Bristol-Myers Squibb Company (incorporated by reference to Exhibit 4.33 of the Company's annual report on Form 20-F (file no. 001-36294) filed with the Securities and Exchange Commission).
10.31†	Tenth Collaboration Warrant Agreement dated April 6, 2015 issued to Bristol-Myers Squibb Company (incorporated by reference to Exhibit 4.34 of the Company's annual report on Form 20-F (file no. 001-36294) filed with the Securities and Exchange Commission).
10.32	Lease relating to Paasheuvelweg 25, dated as of March 7, 2016, by and between 52 IFH GmbH & Co. KG and uniQure biopharma B.V. (incorporated by reference to Exhibit 10.36 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2016 filed with the Securities and Exchange Commission).
10.34t	Employment Agreement dated August 4, 2017 between uniQure biopharma B.V. and Sander van Deventer (incorporated by reference to Exhibit 10.2 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on June 30, 2017 filed with the Securities and Exchange Commission).
10.35t	Employment Agreement dated July 10, 2017 between uniQure, Inc. and Scott McMillan (incorporated by reference to Exhibit 10.3 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on June 30, 2017 filed with the Securities and Exchange Commission).

10.36t	Employment Agreement dated July 15, 2017 between uniQure biopharma B.V. and Christian Klemt (incorporated by reference to Exhibit 10.4 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on June 30, 2017 filed with the Securities and Exchange Commission).
10.37†	Assignment and License Agreement dated April 17, 2017 between Professor Paolo Simioni and uniQure biopharma B.V. (incorporated by reference to Exhibit 10.1 of the Company's periodic report on Form 8-K (file no. 001-36294) filed on October 19, 2017 with the Securities and Exchange Commission).
10.38t	Employment Agreement dated August 20, 2018 by and between uniQure, Inc. and Dr. Robert Gut (incorporated by reference to Exhibit 10.38 of the Company's annual report on Form 10-K for the year ended December 31, 2018 (file no. 0001-36294) filed with the Securities and Exchange commission).
10.39	Amendment No. 1 to Second Amended and Restated Loan and Security Agreement dates as of December 6, 2018 by and among uniQure Biopharma B.V., uniQure, Inc., uniQure IP B.V., the Company, and Hercules Technology Growth Capital, Inc (incorporated by reference to Exhibit 10.1 of the Company's current report on Form 8-K (file no. 001-36294) filed with the Securities and Exchange Commission) filed on December 10, 2018.
10.40	First Amendment Lease relating to 113 Hartwell Avenue, Lexington, Massachusetts, dated as of July 24, 2013, by and between the Company and King113 Hartwell LLC (incorporated by reference to Exhibit 10.1 of the Company's current report on form 8-K (file no. 001-36294) filed with the Securities and Exchange Commission) filed on November 15, 2018.
10.41t	Employee Share Purchase Plan (incorporated by reference to Exhibit 4.2 of the Company's registration statement on Form S-8 (file no. 333-225629) filed with the Securities and Exchange Commission) filed on June 14, 2018.
10.42	Second Amendment Lease relating to 113 Hartwell Avenue, Lexington Massachusetts, dated as of June 17, 2019, by and between the Company and King 113 Hartwell LLC (incorporated by reference to Exhibit 10.42 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on June 30, 2019 filed with the Securities and Exchange Commission).
10.43	Form of Share Option Agreement, effective June 18, 2019, under the 2014 Share Incentive Plan (incorporated by reference to Exhibit 10.43 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on June 30, 2019 filed with the Securities and Exchange Commission).
10.44t	Amended and Restated Employment Agreement, executed September 17, 2019, by and between the Company and Dr. Kuta (incorporated by reference to Exhibit 10.1 of the Company's current report on Form 8-K (file no. 001-36294) filed with the Securities and Exchange Commission) filed on September 20, 2019.
10.45t	Employment Agreement, executed September 17, 2019, by and between the Company and Dr. Sander van Deventer (incorporated by reference to Exhibit 10.2 of the Company's current report on form 8-K (file no. 001-36294) filed with the Securities and Exchange Commission) filed on September 20, 2019.
10.46t	Separation Agreement, executed September 16, 2019, by and between the Company and Dr. Scott McMillan (incorporated by reference to Exhibit 10.3 of the Company's current report on form 8-K (file no. 001-36294) filed with the Securities and Exchange Commission) filed on September 20, 2019.
10.47	Amended and Restated Collaboration and License Agreement by and between 4D Molecular Therapeutics, Inc and uniQure biopharma B.V., dated August 6, 2019 (incorporated by reference to Exhibit 10.4 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on September 30, 2019 filed with the Securities and Exchange Commission).
10.48	Collaboration and License Agreement by and between 4D Molecular Therapeutics, Inc and uniQure biopharma B.V., dates August 6, 2019 (incorporated by reference to Exhibit 10.5 of the Company's quarterly report on Form 10-Q (file no. 001-36294) for the period ending on September 30, 2019 filed with the Securities and Exchange Commission).
10.49*t	Amended and Restated Employment Agreement, executed March 1, 2020 by and between uniQure biopharma B.V. and Christian Klemt.
10.50*t	Amended and Restated Employment Agreement, executed March 1, 2020 by and between uniQure Inc. and Dr. Robert Gut.
10.51*t	Amended and Restated Employment Agreement, executed March 1, 2020 by and between uniQure Inc. and Maria Cantor.

10.52*t	Amended and Restated Employment Agreement, executed March 1, 2020 by and between uniQure Inc. and Jonathan Garen.
14.1	Code of Ethics (incorporated by reference to Exhibit 14.1 of the Company's annual report on Form 10-K (file no. 001-36294) for the period ending December 31, 2016 filed with the Securities and Exchange Commission).
21.1*	Subsidiaries of the Company.
23.1*	Consent of Independent Registered Public Accounting Firm – KPMG Accountants N.V.
23.2*	Consent of Independent Registered Public Accounting Firm – PricewaterhouseCoopers Accountants N.V.
24.1*	Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K).
31.1*	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer.
31.2*	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer.
32.1*	Section 1350 Certification.
101*	The following materials from the Company's Annual Report on Form 10-K for the year ended December 31, 2019, formatted in Inline XBRL (eXtensible Business Reporting Language): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations and Comprehensive Income (Loss), (iii) Consolidated Statements of Shareholders' Equity, (iv) Consolidated Statements of Cash Flows and (v) Notes to Consolidated Financial Statements.
104*	The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2019, has been formatted in Inline XBRL.

† Confidential treatment requested as to certain portions, which portions have been omitted and filed separately with the Securities and Exchange Commission

* Filed herewith

t Indicates a management contract or compensatory plan or arrangement.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

UNIQURE, N.V.

By: /s/ MATTHEW KAPUSTA
Matthew Kapusta
Chief Executive Officer
(Principal Executive and Financial Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Matthew Kapusta and Christian Klemt, jointly and severally, his or her attorney-in-fact, with the power of substitution, for him or her in any and all capacities, to sign any amendments to this Annual Report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signatures	Title	Date
/s/ MATTHEW KAPUSTA Matthew Kapusta	Chief Executive Officer, Chief Financial Officer and Director (Principal Executive and Financial Officer)	March 2, 2020
/s/ ROBERT GUT Robert Gut	Executive Director	March 2, 2020
/s/ CHRISTIAN KLEMT Christian Klemt	Chief Accounting Officer	March 2, 2020
/s/ PHILIP ASTLEY SPARKE Philip Astley Sparke	Director	March 2, 2020
/s/ JACK KAYE Jack Kaye	Director	March 2, 2020
/s/ DAVID SCHAFFER David Schaffer	Director	March 2, 2020
/s/ PAULA SOTEROPOULOS Paula Soteropoulos	Director	March 2, 2020
/s/ MADHAVAN BALACHANDRAN Madhavan Balachandran	Director	March 2, 2020
/s/ JEREMY P. SPRINGHORN Jeremy P. Springhorn	Director	March 2, 2020
/s/ DAVID MEEK David Meek	Director	March 2, 2020

Exhibit 4.1

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The following description sets forth certain material terms and provisions of uniQure N.V.'s ("uniQure N.V.", "we," "us," and "our") securities that are registered under Section 12 of the Securities Exchange Act of 1934, as amended. The description below of our ordinary shares and provisions of our articles of association are summaries and are qualified by reference to our articles of association and the applicable provisions of Dutch law.

DESCRIPTION OF CAPITAL STOCK

The following description of the general terms and provisions of our ordinary shares is a summary only and therefore is not complete and is subject to, and qualified in its entirety by reference to, the terms and provisions of our articles of association. Our articles of association have been filed with the SEC as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.1 is a part and you should read the articles for provisions that may be important to you.

Authorized Ordinary Shares

Our articles of association provide an authorized share capital of 60,000,000 ordinary shares, each with a nominal value per share of €0.05.

Form of Ordinary Shares

We issue our ordinary shares in registered book-entry form and such shares are not certificated.

NASDAQ Global Market Listing

Our ordinary shares are listed on The NASDAQ Global Market under the symbol "QURE."

Comparison of Dutch corporate law and our Articles of Association and Delaware corporate law

The following comparison between Dutch corporate law, which applies to us, and Delaware corporate law, the law under which many publicly listed companies in the United States are incorporated, discusses additional matters not otherwise described in this exhibit. This summary is subject to Dutch law, including Book 2 of the Dutch Civil Code and Delaware corporation law, including the Delaware General Corporation Law.

Corporate governance

Duties of directors

The Netherlands. We have a one tier board structure consisting of our executive directors and non-executive directors. Under the one-tier board structure, both the executive and non-executive directors will be collectively responsible for the management performed by the one-tier board and for the general policy and strategy of a company. The executive directors are responsible for the day-to-day management of a company. The non-executive directors are responsible for supervising the conduct of, and providing advice to, the executive directors and for providing supervision with respect to the company's general state of affairs. Each executive director and non-executive director has a duty to act in the corporate interest of the company. Under Dutch law, the corporate interest extends to the interests of all corporate stakeholders, such as shareholders, creditors, employees, customers and suppliers. The duty to act in the corporate interest of the company also applies in the event of a proposed sale or split-up of a company, whereby the circumstances generally dictate how such duty is to be applied. Any resolution of the board regarding a significant change in the identity or character of a company requires shareholders' approval.

Delaware. The board of directors bears the ultimate responsibility for managing the business and affairs of a corporation. In discharging this function, directors of a Delaware corporation owe fiduciary duties of care and loyalty to the corporation and to its stockholders. Delaware courts have decided that the directors of a Delaware corporation are required to exercise informed business judgment in the performance of their duties. Informed business judgment means that the directors have informed themselves of all material information reasonably available to them. Delaware courts have also imposed a heightened standard of conduct upon directors of a Delaware corporation who take any action designed to defeat a threatened change in control of the corporation. In addition, under Delaware law, when the board of directors of a Delaware corporation approves the sale or break-up of a corporation, the board of directors may, in certain circumstances, have a duty to obtain the highest value reasonably available to the stockholders.

Director terms

The Netherlands. Under Dutch law, executive directors of a listed company are generally appointed for a term of a maximum of four years and reappointed for a term of a maximum of four years at a time. Non-executive directors of a listed company are generally appointed for a term of a maximum of four years and reappointed once for another term of a maximum of four years. Non-executive directors of a listed company may subsequently be reappointed for a term of a maximum of two years, which reappointment may be extended by at most two years. Our executive and non-executive directors are, in principle, appointed by the general meeting of shareholders upon the binding nomination of the non-executive directors.

The general meeting of shareholders is entitled at all times to suspend or dismiss a director. The general meeting of shareholders may only adopt a resolution to suspend or dismiss such director by at least a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital of the company.

Delaware. The Delaware General Corporation Law generally provides for a one-year term for directors, but permits directorships to be divided into up to three classes with up to three-year terms, with the years for each class expiring in different years, if permitted by a company's certificate of incorporation, an initial bylaw or a bylaw adopted by the stockholders. A director elected to serve a term on such a classified board may not be removed by stockholders without cause. There is no limit in the number of terms a director may serve.

Director vacancies

The Netherlands. Under Dutch law, directors are appointed by the general meeting of shareholders. Under our articles of association, directors are, in principle, appointed by the general meeting of shareholders upon the binding nomination by the non-executive directors. However, the general meeting of shareholders may at all times overrule such binding nomination by a resolution adopted by at least a two-thirds majority of the votes cast, provided such majority represents more than half of the issued share capital of our company. If the general meeting of shareholders overrules the binding nomination, the non-executive directors must make a new nomination.

Delaware. The Delaware General Corporation Law provides that vacancies and newly created directorships may be filled by a majority of the directors then in office (even though less than a quorum) unless (1) otherwise provided in the certificate of incorporation or bylaws of the corporation or (2) the certificate of incorporation directs that a particular class of stock is to elect such director, in which case any other directors elected by such class, or a sole remaining director elected by such class, will fill such vacancy.

Conflict-of-interest transactions

The Netherlands. Pursuant to Dutch law and our articles of association, directors may not take part in any discussion or decision-making that involves a subject or transaction in relation to which they have a personal direct or indirect conflict of interest with us. Our articles of association provide that if as a result thereof, the board is unable to act the resolution will be adopted by the general meeting of shareholders.

Delaware. The Delaware General Corporation Law generally permits transactions involving a Delaware corporation and an interested director of that corporation if:

- the material facts as to the director's relationship or interest are disclosed and a majority of disinterested directors consent;
- the material facts are disclosed as to the director's relationship or interest and a majority of shares entitled to vote thereon consent; or
- the transaction is fair to the corporation at the time it is authorized by the board of directors, a committee of the board of directors or the stockholders.

Shareholder rights

Voting rights

The Netherlands. In accordance with Dutch law and our articles of association, each issued ordinary share confers the right to cast one vote at the general meeting of shareholders. Each holder of ordinary shares may cast as many votes as it holds shares. Shares that are held by us or our direct or indirect subsidiaries do not confer the right to vote. Dutch law does not permit cumulative voting for the election of executive directors and non-executive directors.

For each general meeting of shareholders, a record date will be applied with respect to ordinary shares in order to establish which shareholders are entitled to attend and vote at a specific general meeting of shareholders. Such record date is set by the board. The record date and the manner in which shareholders can register and exercise their rights will be set out in the convocation notice of the meeting.

Delaware. Under the Delaware General Corporation Law, each stockholder is entitled to one vote per share of stock, unless the certificate of incorporation provides otherwise. In addition, the certificate of incorporation may provide for cumulative voting at all elections of directors of the corporation, or at elections held under specified circumstances. Either the certificate of incorporation or the bylaws may specify the number of shares and/or the amount of other securities that must be represented at a meeting in order to constitute a quorum, but in no event will a quorum consist of less than one third of the shares entitled to vote at a meeting.

Stockholders as of the record date for the meeting are entitled to vote at the meeting, and the board of directors may fix a record date that is no more than 60 nor less than ten days before the date of the meeting, and if no record date is set then the record date is the close of business on the day next preceding the day on which notice is given, or if notice is waived then the record date is the close of business on the day next preceding the day on which the meeting is held. The determination of the stockholders of record entitled to notice or to vote at a meeting of stockholders shall apply to any adjournment of the meeting, but the board of directors may fix a new record date for the adjourned meeting.

Shareholder proposals

The Netherlands. Pursuant to our articles of association, extraordinary general meetings of shareholders will be convened by the board or by those who are authorized by law or pursuant to our articles of association to do so. Pursuant to Dutch law, one or more shareholders representing at least one-tenth of the issued share capital of the company may request the Dutch courts to order that they be authorized by the court to convene a general meeting of shareholders. The court shall disallow the request if it does not appear that the applicants have previously requested the board to convene a general meeting of shareholders and the board has taken the necessary steps so that the general meeting of shareholders could be held within six weeks after the request.

The agenda for a general meeting of shareholders must include such items requested by one or more shareholders representing at least 3% of the issued share capital of a company or such lower percentage as the articles of association may provide. Our articles of association do not state such lower percentage.

Delaware. Delaware law does not specifically grant stockholders the right to bring business before an annual or special meeting. However, if a Delaware corporation is subject to the SEC's proxy rules, a stockholder who owns at least $2,000 in market value, or 1% of the corporation's securities entitled to vote, may propose a matter for a vote at an annual or special meeting in accordance with those rules.

Action by written consent

The Netherlands. Under Dutch law, the articles of association of a company may provide that shareholders' resolutions may be adopted in writing without holding a general meeting of shareholders, provided that the resolution is adopted unanimously by all shareholders that are entitled to vote. For a listed company, this method of adopting resolutions is not feasible.

Delaware. Although permitted by Delaware law, publicly listed companies do not typically permit stockholders of a corporation to take action by written consent.

Appraisal rights

The Netherlands. The concept of appraisal rights does not exist under Dutch law. However, pursuant to Dutch law a shareholder who for its own account contributes at least 95% of our issued share capital may initiate proceedings against our minority shareholders jointly for the transfer of their shares to it. The proceedings are held before the Enterprise Chamber (*Ondernemingskamer*). The Enterprise Chamber may grant the claim for squeeze-out in relation to all minority shareholders and will determine the price to be paid for the shares, if necessary after appointment of one or three experts who will offer an opinion to the Enterprise Chamber on the value to be paid for the shares of the minority shareholders.

Furthermore, in accordance with Directive 2005/56/EC of the European Parliament and the Council of October 26, 2005 on cross-border mergers of limited liability companies, Dutch law provides that, to the extent the acquiring company in a cross-border merger is organized under the laws of another EU member state, a shareholder of a Dutch disappearing company who has voted against the cross-border merger may file a claim with the Dutch company for compensation. The compensation is to be determined by one or more independent experts.

Delaware. The Delaware General Corporation Law provides for stockholder appraisal rights, or the right to demand payment in cash of the judicially determined fair value of the stockholder's shares, in connection with certain mergers and consolidations.

Shareholder suits

The Netherlands. In the event a third party is liable to a Dutch company, only a company itself can bring a civil action against that third party. An individual shareholder does not have the right to bring an action on behalf of a company. This individual shareholder may, in its own name, have an individual right to take action against such third party in the event that the cause for the liability of that third party also constitutes a tortious act directly against that individual shareholder. The Dutch Civil Code provides for the possibility to initiate such action collectively. A collective action can be instituted by a foundation or an association whose objective is to protect the rights of a group of persons having similar interests. The collective action itself cannot result in an order for payment of monetary damages but may only result in a declaratory judgment (*verklaring voor recht*). In order to obtain compensation for damages, the foundation or association and the defendant may reach—often on the basis of such declaratory judgment—a settlement. A Dutch court may declare the settlement agreement binding upon all the injured parties with an opt-out choice for an individual injured party. An individual injured party may also itself—outside the collective action—institute a civil claim for damages.

Delaware. Under the Delaware General Corporation Law, a stockholder may bring a derivative action on behalf of the corporation to enforce the rights of the corporation. An individual also may commence a class action suit on behalf of himself and other similarly situated stockholders where the requirements for maintaining a class action under Delaware law have been met. A person may institute and maintain such a suit only if that person was a stockholder at the time of the transaction which is the subject of the suit. In addition, under Delaware case law, the plaintiff normally must be a stockholder at the time of the transaction that is the subject of the suit and throughout the duration of the derivative suit. Delaware law also requires that the derivative plaintiff make a demand on the directors of the corporation to assert the corporate claim before the suit may be prosecuted by the derivative plaintiff in court, unless such a demand would be futile.

Repurchase of shares

The Netherlands. Under Dutch law, a company such as ours may not subscribe for newly issued shares in its own share capital. Such company may, however, subject to certain restrictions under Dutch law and its articles of association, acquire shares in its own share capital. We may acquire fully paid-up shares in our own share capital at any time for no valuable consideration. Furthermore, subject to certain provisions of Dutch law and our articles of association, we may repurchase fully paid-up shares in our own share capital if (1) such repurchase would not cause our shareholders' equity to fall below an amount equal to the sum of the paid-up and called-up part of the issued share capital and the reserves we are required to maintain pursuant to applicable law and (2) we would not as a result of such repurchase hold more than 50% of our own issued share capital.

Other than shares acquired for no valuable consideration, ordinary shares may only be acquired following a resolution of our board, acting pursuant to an authorization for the repurchase of shares granted by the general meeting of shareholders. An authorization by the general meeting of shareholders for the repurchase of shares can be granted for a maximum period of 18 months. Such authorization must specify the number of shares that may be acquired, the manner in which these shares may be acquired and the price range within which the shares may be acquired. Our board has been authorized, for a period of 18 months to be calculated from the date of the annual general meeting of shareholders held on June 13, 2018, to cause the repurchase of ordinary shares by us of up to 10% of our issued share capital, for a price per share between the nominal value of the ordinary shares and an amount of 110% of the highest price of the ordinary shares officially quoted on any of the official stock markets we are listed on during any of 30 banking days preceding the date the repurchase is effected or proposed.

No authorization of the general meeting of shareholders is required if fully paid-up ordinary shares are acquired by us with the intention of transferring such ordinary shares to our employees under an applicable employee stock purchase plan, provided such ordinary shares are officially quoted on any of the official stock markets.

Delaware. Under the Delaware General Corporation Law, a corporation may purchase or redeem its own shares unless the capital of the corporation is impaired or the purchase or redemption would cause an impairment of the capital of the corporation. A Delaware corporation may, however, purchase or redeem out of capital any of its preferred shares or, if no preferred shares are outstanding, any of its own shares if such shares will be retired upon acquisition and the capital of the corporation will be reduced in accordance with specified limitations.

Anti-takeover provisions

The Netherlands. Under Dutch law, various protective measures are possible and permissible within the boundaries set by Dutch statutory law and Dutch case law. We have adopted several provisions that may have the effect of making a takeover of our company more difficult or less attractive, including:

- the staggered four-year terms of our directors, as a result of which only approximately one-fourth of our non-executive directors will be subject to election in any one year;
- a provision that our directors may only be removed at the general meeting of shareholders by a two-thirds majority of votes cast representing more than half of our issued share capital; and
- requirements that certain matters, including an amendment of our articles of association, may only be brought to our shareholders for a vote upon a proposal by our board.

Delaware. In addition to other aspects of Delaware law governing fiduciary duties of directors during a potential takeover, the Delaware General Corporation Law also contains a business combination statute that protects Delaware companies from hostile takeovers and from actions following the takeover by prohibiting some transactions once an acquirer has gained a significant holding in the corporation.

- Section 203 of the Delaware General Corporation Law prohibits "business combinations," including mergers, sales and leases of assets, issuances of securities and similar transactions by a corporation or a subsidiary with an interested stockholder that beneficially owns 15% or more of a corporation's voting stock, within three years after the person becomes an interested stockholder, unless: the transaction that will cause the person to become an interested stockholder is approved by the board of directors of the target prior to the transactions;

- after the completion of the transaction in which the person becomes an interested stockholder, the interested stockholder holds at least 85% of the voting stock of the corporation not including shares owned by persons who are directors and representatives of interested stockholders and shares owned by specified employee benefit plans; or

- after the person becomes an interested stockholder, the business combination is approved by the board of directors of the corporation and holders of at least 66.67% of the outstanding voting stock, excluding shares held by the interested stockholder.

A Delaware corporation may elect not to be governed by Section 203 by a provision contained in the original certificate of incorporation of the corporation or an amendment to the original certificate of incorporation or to the bylaws of the company, which amendment must be approved by a majority of the shares entitled to vote and may not be further amended by the board of directors of the corporation. Such an amendment is not effective until twelve months following its adoption.

Inspection of books and records

The Netherlands. Our board provides the shareholders, at the general meeting of shareholders, with all information that the shareholders require for the exercise of their powers, unless doing so would be contrary to an overriding interest of ours. Our board must give reason for electing not to provide such information on the basis of an overriding interest.

Delaware. Under the Delaware General Corporation Law, any stockholder may inspect certain of the corporation's books and records, for any proper purpose, during the corporation's usual hours of business.

Removal of directors

The Netherlands. Under our articles of association, the general meeting of shareholders is at all times entitled to suspend or dismiss a director. The general meeting of shareholders may only adopt a resolution to suspend or dismiss such a member by at least a two-thirds majority of the votes cast, provided such majority represents more than half of the issued share capital of our company.

Delaware. Under the Delaware General Corporation Law, any director or the entire board of directors may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors, except (1) unless the certificate of incorporation provides otherwise, in the case of a corporation whose board is classified, stockholders may effect such removal only for cause, or (2) in the case of a corporation having cumulative voting, if less than the entire board is to be removed, no director may be removed without cause if the votes cast against his removal would be sufficient to elect him if then cumulatively voted at an election of the entire board of directors, or, if there are classes of directors, at an election of the class of directors of which he is a part.

Preemptive rights

The Netherlands. Under Dutch law, in the event of an issuance of ordinary shares, each shareholder will have a pro rata preemptive right in proportion to the aggregate nominal value of the ordinary shares held by such holder (with the exception of ordinary shares to be issued to employees or ordinary shares issued against a contribution other than in cash). Under our articles of association, the preemptive rights in respect of newly issued ordinary shares may be restricted or excluded by a resolution of the general meeting of shareholders upon proposal of our board. The general meeting of shareholders may designate our board to restrict or exclude the preemptive rights in respect of newly issued ordinary shares. Such designation can be granted for a period not exceeding five years. A resolution of the general meeting of shareholders to restrict or exclude the preemptive rights or to designate the board as the authorized body to do so requires a two-thirds majority of the votes cast, if less than one half of our issued share capital is represented at the meeting.

At our annual general meeting of shareholders held on June 13, 2018, the general meeting of shareholders resolved to authorize our board for a period of 18 months with effect from the date of the meeting to restrict or exclude preemptive rights accruing to shareholders in connection with the issue of ordinary shares or rights to subscribe for ordinary shares.

Delaware. Under the Delaware General Corporation Law, stockholders have no preemptive rights to subscribe for additional issues of stock or to any security convertible into such stock unless, and to the extent that, such rights are expressly provided for in the certificate of incorporation.

Dividends

The Netherlands. Dutch law provides that dividends may be distributed after adoption of the annual accounts by the general meeting of shareholders from which it appears that such dividend distribution is allowed. Moreover, dividends may be distributed only to the extent that the shareholders' equity exceeds the amount of the paid-up and called-up part of the issued share capital of the company and the reserves that must be maintained under the law or the articles of association. Interim dividends may be declared as provided in the articles of association and may be distributed to the extent that the shareholders' equity exceeds the amount of the paid-up and called-up part of the issued share capital of the company and the reserves that must be maintained under the law or the articles of association, as apparent from an interim statement of assets and liabilities.

Under our articles of association, any amount of profit may be carried to a reserve as our board determines. After reservation by our board of any profit, the remaining profit will be at the disposal of the shareholders. Our corporate policy is to only make a distribution of dividends to our shareholders after the adoption of our annual accounts demonstrating that such distribution is legally permitted. However, our board is permitted to declare interim dividends without the approval of the general meeting of shareholders.

Dividends will be made payable not later than thirty days after the date they were declared unless the body declaring the dividend determines a different date. Claims to dividends not made within five years and one day from the date that such dividends became payable will lapse and any such amounts will be considered to have been forfeited to us (*verjaring*).

Delaware. Under the Delaware General Corporation Law, a Delaware corporation may pay dividends out of its surplus (the excess of net assets over capital), or in case there is no surplus, out of its net profits for the fiscal year in which the dividend is declared and/or the preceding fiscal year (provided that the amount of the capital of the corporation is not less than the aggregate amount of the capital represented by the issued and outstanding stock of all classes having a preference upon the distribution of assets). In determining the amount of surplus of a Delaware corporation, the assets of the corporation, including stock of subsidiaries owned by the corporation, must be valued at their fair market value as determined by the board of directors, without regard to their historical book value. Dividends may be paid in the form of shares, property or cash.

Shareholder vote on certain reorganizations

The Netherlands. Under Dutch law, the general meeting of shareholders must approve resolutions of the board relating to a significant change in the identity or the character of the company or the business of the company, which includes:

- a transfer of the business or virtually the entire business to a third party;
- the entry into or termination of a long-term cooperation of the company or a subsidiary with another legal entity or company or as a fully liable partner in a limited partnership or general partnership, if such cooperation or termination is of a far-reaching significance for the company; and
- the acquisition or divestment by the company or a subsidiary of a participating interest in the capital of a company having a value of at least one third of the amount of its assets according to its balance sheet and explanatory notes or, if the company prepares a consolidated balance sheet, according to its consolidated balance sheet and explanatory notes, according to the last adopted annual accounts of the company.

Delaware. Under the Delaware General Corporation Law, the vote of a majority of the outstanding shares of capital stock entitled to vote thereon generally is necessary to approve a merger or consolidation or the sale of all or substantially all of the assets of a corporation. The Delaware General Corporation Law permits a corporation to include in its certificate of incorporation a provision requiring for any corporate action the vote of a larger portion of the stock or of any class or series of stock than would otherwise be required.

Under the Delaware General Corporation Law, no vote of the stockholders of a surviving corporation to a merger is needed, however, unless required by the certificate of incorporation, if (1) the agreement of merger does not amend in any respect the certificate of incorporation of the surviving corporation, (2) the shares of stock of the surviving corporation are not changed in the merger and (3) the number of shares of common stock of the surviving corporation into which any other shares, securities or obligations to be issued in the merger may be converted does not exceed 20% of the surviving corporation's common stock outstanding immediately prior to the effective date of the merger. In addition, stockholders may not be entitled to vote in certain mergers with other corporations that own 90% or more of the outstanding shares of each class of stock of such corporation, but the stockholders will be entitled to appraisal rights.

Remuneration of directors

The Netherlands. Under Dutch law and our articles of association, we must adopt a remuneration policy for our directors. Such remuneration policy shall be adopted by the general meeting of shareholders upon the proposal of our non-executive directors. The remuneration of our executive directors will be determined by our non-executive directors with due observance of our remuneration policy; the remuneration of our non-executive directors will be determined by the board with due observance of our remuneration policy.

Delaware. Under the Delaware General Corporation Law, the stockholders do not generally have the right to approve the compensation policy for directors or the senior management of the corporation, although certain aspects of executive compensation may be subject to binding or advisory stockholder votes due to the provisions of U.S. federal securities and tax law, as well as stock exchange requirements.

Transfer Agent and Registrar

Computershare Trust Company, N.A. serves as transfer agent and registrar for our ordinary shares.

uniQure

EMPLOYMENT AGREEMENT PURSUANT TO SECTION 7:610 (et seq.) of the Dutch Civil Code (DCC)

March 1, 2020

Employment agreement between

(1) **uniQure biopharma B.V.,** a company with limited liability (*besloten vennootschap met beperkte aansprakelijkheid)*, with registered office at Amsterdam and principal place of business at Paasheuvelweg 25a, (1105 BP) Amsterdam (the **Employer**); and

(2) **Christian Klemt** ; (the **Employee**);

each "a Party", collectively, "the Parties".

The Parties agree as follows:

1 Commencement date Agreement and position

1.1 On March 1, 2020 (the "Effective Date"), this employment agreement (the "Agreement") will become effective and Employee shall continue his employment with Employer in the same role with the Employer, i.e., the position of Chief Accounting Officer. Employee undertakes to perform all the activities as set out in Exhibit A (Job Description) and that can reasonably be assigned to him by or on behalf of the Employer and which are related to the Employer's business. To the best of his ability in doing so, the Employee will comply with the instructions given to him by or on behalf of the Employer.

1.2 This Agreement replaces and supersedes the prior Employment Agreement dated August 7, 2017, which is contemporaneously terminated as of the Effective Date of this Agreement.

1.3 The Employer shall be entitled to assign other duties than the usual activities of the Employee, or to alter the position of the Employee if in the reasonable opinion of the Employer the business circumstances so require.

1.4 The Employee shall not be engaged in any business activity which, in the judgment of the Employer, conflicts with Employee's ability to carry out his duties for the Employer.

1.5 The work will be performed at the office of the Employer at Paasheuvelweg 25a (1105 BP) in Amsterdam provided, however, that the Employee shall be required to travel from time to time for business purposes. The Employer reserves the right to change the location where the work is performed after consultation with the Employee.

1.6 The normal working hours for a full-time, 1.0 FTE position are 40 hours per week. The working hours are normally 8.5 hours a day with a thirty (30) minute lunch break.

2 Term and termination Agreement

2.1 The Agreement has been entered into for an indefinite period of time.

2.2 The Agreement will in any event, without notice being required, terminate as of the first day of the month following the date the Employee reaches the State pension age (AOW-gerechtigde leeftijd).

2.3 The Agreement can be terminated by each of the Parties with due observance of the statutory notice period of 4 months for the Employer and 2 months for the Employee.

2.4 **Severance Payments**.

2.4.1 If the Agreement is terminated on the initiative of Employer, other than in the case of summary dismissal as referred to in article 7:677 of the Dutch Civil Code, long-term illness (article 7:669 section 3 under b Dutch Civil Code) or severely culpable acts or omissions by Employee as referred to in article 7:669 section 3 under the Dutch Civil Code, Employer shall grant the Employee severance pay equal to 100% of (i) the annual prorated base salary, plus (ii) the amount of the Target Bonus (*i.e.*, Thirty-Five percent (35%) of the annual Pro-rata Base Salary (as defined in Clause 3)), (hereinafter: 'Severance Pay') subject to deductions that are authorized by Employee and/or required by applicable laws and regulations.

2.4.2 If the Agreement is terminated on the initiative of Employer within the period beginning ninety (90) days before and continuing until twelve (12) months after a Change of Control (as defined below), long-term illness (article 7:669 section 3 under b Dutch Civil Code) or severely culpable acts or omissions by Employee as referred to in article 7:669 section 3 under the Dutch Civil Code, clause 2.4.1 shall not apply and, instead, Employer shall grant the Employee severance pay equal to 150% of (i) the annual prorated base salary, plus (ii) the amount of the Target Bonus (*i.e.*, Thirty-Five percent (35%) of the annual Pro-rata Base Salary), (hereinafter: 'Severance Pay on a Change of Control') subject to deductions that are authorized by Employee and/or required by applicable laws and regulations. Employer shall not owe any payments or partial payments of any kind under both clauses 2.4.1 and 2.4.2, which are mutually exclusive.

2.4.3 If Severance Pay under clause 2.4.1 or Severance Pay on a Change of Control under clause 2.4.2 is owed to the Employee, then the Employer shall grant the Employee additional severance pay equal to a prorated Target Bonus amount for the year of termination as provided in this clause (the “Pro-rata Bonus”). The Pro-rata Bonus shall be the product of the formula B x D/365 where B represents the Target Bonus (*i.e.*, Thirty-Five percent (35%) of the annual Pro-rata Base Salary)), and D represents the number of days elapsed in the calendar year through the date of the separation of Executive’s employment from the Employer.

2.4.4 If and insofar as Employee is entitled to the transition payment as referred to in article 7:673 of the Dutch Civil Code, this transition payment shall be deemed to be factored into the Severance pay, the Severance pay on a Change of Control, and the Pro-Rata Bonus.

2.4.5 In the event of a termination under this clause 2.4, the Employer shall provide 4 months' notice to the Employee. The Employer, in its sole discretion subject to applicable law, may choose to put the Employee on garden leave at any time during the notice period. Garden leave will be considered equal to continuation of full-time employment, but the Employee will be released from his working duties. In the event that the Employee is placed on garden leave, the amount of the severance pay under this clause 2.4 will be reduced by an amount equivalent to the salary during the Employee's garden leave, and the effective date of the

garden leave shall be the date of the separation of Executive's employment from the Employer for purposes of calculating the Pro-rata Bonus of clause 2.4.3.

2.4.6 In the event of a Change of Control as defined below, the vesting conditions that may apply to any stock options, restricted shares, restricted stock units, performance stock units or other grants of equity held by Executive pursuant to this Agreement and the Company's Amended and Restated 2014 Share Incentive Plan will be automatically waived and shall be deemed fully vested immediately prior to the Change of Control event. All Stock Options will be deemed to be fully exercisable commencing on the date of and immediately prior to the Change of Control and ending on the eighteen (18) month anniversary of the Change of Control or, if earlier, the expiration of the term of such Stock Options.

2.4.7 For purposes of this Agreement, "Change of Control" shall mean the date on which any of the following events occurs:

2.4.7.1 any "person," as such term is used in Sections 13(d) and 14(d) of the United States Securities Exchange Act of 1934, as amended (the "Act") (other than uniQure N.V. (the "Company"), any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing forty (40) percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Board ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company); or

2.4.7.2 a majority of the members of the Board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board before the date of the appointment or election; or

2.4.7.3 the consummation of (i) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty (50) percent of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), or (ii) any sale or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company.

3 Salary, bonus, equity and holiday allowance

3.1 The Employee's annual salary will be EUR Two Hundred Forty Thousand (€ 240,000) gross (the "Pro-rata Base Salary"), including an 8% holiday allowance on the basis of full-time employment. The salary, including the holiday allowance, shall be paid in 12 equal, monthly instalments ultimately by the end of each calendar month. The Employee will work on a fulltime basis, 1,0 FTE and, therefore, the actual monthly salary is EUR Twenty Thousand (€ 20,000). In case of part time employment, all earnings will be pro-rated.

3.2 The Employee shall be eligible for a bonus payment amounting to a target amount of Thirty-Five percent (35%) of his Pro-rata Base Salary (the "Target Bonus"). The Employee's eligibility for a Target Bonus or any other bonus payment shall be dependent on the Employer guidelines and is at the full discretion of the Board.

3.3 Except as provided in clause 2.4, bonus payments, if any, will not be taken into account for the calculation of any possible severance payment upon termination of the Agreement. To be eligible for any bonus pursuant to this Agreement or otherwise pursuant to Employee's employment with Employer, Employee must be in service of Employer on the date any bonus is paid.

4 Overtime

The Employee undertakes to work overtime at the request of the Employer. The Employer does not pay any compensation for overtime.

5 Expenses

5.1 The costs for travelling from home to office shall be compensated in accordance with the Employer policy.

5.2 To the extent that the Employer has given prior approval for business travels, the Employer shall reimburse reasonable travel and accommodation expenses relating to such business travel incurred by the Employee in the performance of his duties upon submission of all the relevant invoices and vouchers within 30 days following completion of the business travel.

6 Holidays

6.1 The Employee is entitled to 30 business days holiday per year or a pro rata portion thereof if the Agreement commences and/or terminates during the calendar year and/or the Employee works part-time.

6.2 The statutory holiday days (20 days of the 30 per year on full time employment) shall be forfeited after 6 months after the end of the year in which the holiday days were accrued.

6.3 The Employer shall determine the commencement and the end of the holiday in consultation with the Employee. The Employee shall take his holidays in the period that the activities best allow this.

7 Illness

In the event of illness in the sense of section 7:629 Dutch Civil Code, the Employee must report sick to the Employer as soon as possible, but no later than 9 a.m. on the first day of illness. The Employee undertakes to comply with the rules related to reporting and inspection in the case of illness, as adopted from time to time by the Employer.

8 Insurance

The Employer will comply with the obligations under the Dutch Health Care Insurance Act.

9 Pension

The Employee shall be entitled to participate in the pension scheme of the Employer following Employer guidelines.

10 Confidentiality obligation

10.1 Both during the term of the Agreement and after the Agreement has been terminated for any reason whatsoever, the Employee shall not make any statements in any way whatsoever to anyone whomsoever (including other personnel of the Employer, unless these should be informed of anything in connection with the work they perform for the Employer), regarding matters, activities and interests of a confidential nature related to the business of the Employer and/or the Employer's affiliates, of which the Employee became aware within the scope of his work for the Employer and the confidential nature of which he is or should be aware ("Confidential Information"). The Confidential Information includes, *inter alia*, information about the Employer's products, processes and services, including but not limited to, information relating to research, development, inventions, manufacture, purchasing, engineering, marketing, merchandising and selling.

10.2 For all oral and written publications by the Employee, which can or could harm the interests of the Employer, prior approval from the Employer has to be obtained. This approval shall only be refused on sincere grounds based on those interests.

10.3 All information exchanged via the Employer's email system is considered to be Employer's proprietary information and should be taken care of accordingly.

10.4 The Employee agrees that the confidentiality obligations set forth in this clause 10 supersede the Employee's obligations to any other company, fund or other organization with which the Employee may have a relationship ("Affiliated Entities") and that any Confidential Information that Employee receives will only be used within the scope of his employment under this Agreement or any successor agreement with Employer and will not be used during the course of his relationship, or communicated through by any means to, any Affiliated Entity.

11 Documents

The Employee is prohibited from in any way having documents and/or correspondence and/or other information carriers and/or copies thereof in his possession that belong to the Employer and/or to the Employer's affiliates, with the exception of the extent to which and as long as required for the performance of his activities for the Employer. In any event, the Employee is required, even without any request being made to that end, to return such documents and/or correspondence and/or other information carriers and/or copies thereof to the Employer immediately upon the end of the Agreement, or in the event the Employee is on non-active duty for any reason whatsoever.

12 Ban on ancillary jobs

During the term of the Agreement, without the prior written consent of the Employer, the Employee shall not accept any paid work or time-consuming unpaid work at or for third parties and will refrain from doing business for his own account.

13 Non-competition and business relationship clause

13.1 Both during the term of the Agreement and for a period of one year after the Agreement has been terminated for any reason whatsoever, without the prior written consent of the Employer, the Employee shall not be engaged or involved or have any share in any manner whatsoever, directly or indirectly, whether on his own behalf or for third parties, in any enterprise which conducts activities in a field similar to or otherwise competing with that of the Employer and/or the Employer's affiliates, nor act, in any manner whatsoever, directly or indirectly, whether on his own behalf or for third parties, as an intermediary in relation to such activities.

13.2 Both during the term of the Agreement and for a period of one year after the Agreement has been terminated for any reason whatsoever, without the prior written consent of the Employer, the Employee shall not perform or have performed professional services in connection with any product or research or development or commercialization that competes with products, or research or development or commercialization of Employer, directly or indirectly, whether on his own behalf or for third parties, nor enter into contacts, in that respect, directly or indirectly, whether on his own behalf or for third parties, with clients and/or relations of the Employer and/or the Employer's affiliates and/or purchasers of products and/or services of the Employer and/or the Employer's affiliates.

13.3 Clients and/or relations of the Employer and/or the Employer's affiliates such as set out in article 13.2 of this Agreement shall in all events mean relations of the Employer and/or the Employer's affiliates with which the Employer has or has had (business) contact in any manner whatsoever throughout the course of, or otherwise prior to the termination of, the Agreement.

13.4 Both during the term of the Agreement and for a period of one year after the Agreement has been terminated for any reason whatsoever, without the prior written consent of the Employer, the Employee shall refrain from becoming engaged or involved in any manner whatsoever, directly or indirectly, whether on his own behalf or for third parties, in actively enticing away, taking (or causing to have taken) into employment, nor make use of, in any manner whatsoever, directly or indirectly, whether on his own behalf or for third parties, the type of work of employees or persons who in a period of one year prior to the termination of the Agreement of the Employee are or have been in the employment of the Employer and/or the Employer's affiliates.

13.5 Employee acknowledges and agrees to adhere to this clause as the Employer has a serious business interest in binding the Employee to the non-competition and business relationship clause, due to the fact that (i) within the organization of the Employer competition-sensitive information as well as confidential information related to the Employer and its clients and relations, such as but not limited to products, or research or development or commercialization of Employer ("Sensitive Business Information") are available and (ii) in the position of **Chief Accounting Officer** the Employee has access to this Sensitive Business Information and/or will become aware of this Sensitive Business Information and/or will maintain (commercial) contacts with clients, suppliers, competitors etc. Given the aforesaid considerations (i) and (ii) in this clause, combined with the education and capacities of the Employee, the Employer has a well-founded fear that its business interest will be harmed substantially if the Employee performs competing activities as set forth in clauses 13.1 up to and including 13.5 of the Agreement within a period of 12 months after termination of the Agreement.

13.6 13.1. to 13.5 shall not apply in the case of summary dismissal as referred to in article 7:677 of the Dutch Civil Code.

14 Intellectual and industrial property

14.1 The Employer is or will be considered to be, to the fullest extent allowed by law, the maker/producer/designer/breeder of all that which is made, created, improved, produced, designed, invented or discovered by the Employee during his activities performed for the Employer (the **Works**).

14.2 The Employee is obliged to fully and comprehensibly disclose all Works to the Employer in writing immediately after they are created or after the creation becomes known to the Employee, and in any case at the request of the Employer.

14.3 The Employee hereby transfers and assigns all his rights to and in connection with the Works to the Employer in advance.

14.4 The Employee is obliged, at first request of the Employer, to transfer and assign to the Employer all rights to and in connection with the Works that do not belong to the Employer by operation of law (*van rechtswege*), and that are not transferred to the Employer pursuant to article 14.3 of this Agreement. This concerns all rights, anywhere in the world, to and arising from or in connection with the Works. This obligation of the Employee remains in force even after the end of this Agreement.

14.5 The Employee agrees to perform, to the extent necessary and/or at the request of the Employer, such further acts as may be necessary or desirable to apply for, obtain and/or maintain protection for the Works, *inter alia* by means of the establishment of intellectual and industrial property rights. The Employee hereby grants permission and power of attorney to the Employer to the extent necessary to carry out every required act on behalf of the Employee to obtain protection for the Works, or to transfer the Works and any rights relating thereto, to the Employer. The Employer will compensate the reasonable costs made in respect hereof, in so far as the payment that the Employee receives pursuant to article 3.1 of this Agreement cannot be considered as compensation for such costs. This obligation of the Employee remains in force even after the end of the Agreement.

14.6 The Employee acknowledges that the payment ex article 3.1 of this Agreement includes a reasonable compensation for any possible deprivation of any intellectual and industrial property rights. To the extent legally possible, the Employee hereby waives his right to any additional compensation with respect to the Works.

15 Gifts

In connection with the performance of his duties, the Employee is prohibited from accepting or stipulating, either directly or indirectly, any commission, reimbursement or payment, in whatever form, or gifts from third parties. The foregoing does not apply to standard promotional gifts having little monetary value.

16 Penalty clause

In the event the Employee acts in violation of any of the obligations under the articles 10 through 15 of this Agreement, the Employee shall, contrary to section 7:650 paragraphs 3, 4

and 5 Dutch Civil Code, without notice of default being required, forfeit to the Employer for each such violation, a penalty in the amount of EUR 10.000,00 as well as a penalty of EUR 1.000,00 for each day such violation has taken place and continues. Alternatively, the Employer will be entitled to claim full damages.

17 Transfer of an undertaking

The Employee shall remain under the obligation to adhere the set out in the articles 10 through 16 of this Agreement vis-à-vis the Employer, if the enterprise of the Employer or a part thereof is transferred to a third party within the meaning of section 7:662 and onwards Dutch Civil Code and this Agreement terminates before or at the time of such transfer, whereas in the event of continuation of the Agreement the Employee would have entered the employment of the acquirer by operation of law.

18 Other arrangements

Subject to the provisions in this Agreement, the arrangements related to employment conditions adopted by the Employer from time to time, as laid down in the Employee Handbook are applicable. A copy of these arrangements has been provided to the Employee. By signing this agreement, the Employee acknowledges to have received and understood the Employee Handbook and the Insider Trading Policy.

19 Employment costs regulation

The conditions of employment costs regulation determined by the Employer apply. In this context, the Employer reserves the right at its sole discretion to modify certain fringe benefits, without any compensation in return.

20 Amendment clause

20.1 The Employer reserves the right to unilaterally amend the Agreement and the arrangements referred to in article 18 of this Agreement if it has such a serious interest in that respect entailing that the interests of the Employee must yield to that in accordance with standards of reasonableness and fairness.

20.2 The Employer reserves the right to unilaterally amend the Agreement and the arrangements referred to in article 18 of this Agreement in the event of a relevant amendment of the law.

21 Applicable law, no collective labour agreement

21.1 This Agreement is governed by Dutch law.

21.2 The Agreement is not subject to any collective labour agreement.

THIS AGREEMENT has been entered into on the date stated at the beginning of this Agreement

uniQure biopharma B.V.

/s/ Lilly Burggraaf
By: Lilly Burggraaf
Title: VP, Global Human Resources

Employee

/s/ Christian Klemt
By: Christian Klemt

Paasheuvelweg 25a
P.O. Box 22506
1100 DA Amsterdam, NL

T: +31 20 240 6000
F: +31 20 240 6020

Chamber of Commerce:
34275365
legal entity: uniQure biopharma B.V.

www.uniQure.com
info@uniQure.com

uniQure

Exhibit A

Job description Chief Accounting Officer

Position and Duties. During the Term, Executive shall serve the Company as its Chief Accounting Officer ("CAO"), reporting directly to the uniQure Chief Executive Officer (the "CEO"). Executive's duties will include but not be limited to:

- Lead, design and staff the global financial accounting, reporting, financial planning and analysis, corporate tax, treasury and information technology functions;
- Serve as the principal strategic accounting and tax advisor related to financial transactions and structure as well as in relation to licensing, joint venture or other collaboration transactions to the Company, the CEO, and Senior Management Team;
- Present quarterly financial updates to the Board of directors and the audit committee;
- Review corporate transaction agreements and a wide-range of business agreements, including joint ventures, mergers and acquisitions, debt/equity financings, and other special projects requiring the advice of the Company's CAO;
- Responsible for annual reports and other securities law filings under the Securities Exchange Act of 1934 and the Securities Act of 1933 as well as other filings of financial reports required by laws and regulations;
- Serve as in substance Principal Financial Officer in terms of designing and implementing internal controls over financial reporting as well as leading the annual evaluation of the effectiveness of disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934;
- Manage the foreign exchange exposure of the Company;
- Manage relationship with existing lenders, compliance of debt covenants as well as the renewal of existing debt financings;
- Responsible for stock plan administration, including Section 16 filings;
- Responsible to develop, design and implement tax strategies;
- Responsible for transfer pricing;
- Responsible for cash management and funding of group entities;
- Coordinate and lead the directors' and officers insurance process;
- Participate in the definition and development of corporate policies, procedures and programs and provide continuing advice and guidance on financial, tax, accounting and information technology matters;

Any other duties as may from time to time be assigned to you by the CEO and which are consistent with Executive's status as a senior executive and the Company's CAOs.

EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EMPLOYMENT AGREEMENT (this "Agreement") is made and entered into as of March 1, 2020 (the "Effective Date"), by and between uniQure, Inc., 113 Hartwell Avenue, Lexington, MA 02421 (together with any and all of its affiliates, the "Company") and Dr. Robert Gut (the "Executive").

WITNESSETH:

WHEREAS, the Company wishes to continue to employ Executive as Chief Medical Officer.

WHEREAS, Executive wishes to continue to be employed by the Company and to serve in such capacity under the terms and conditions set forth in this Agreement.

WHEREAS, the Company and Executive are party to that certain Employment Agreement (the "Prior Employment Agreement") dated August 20, 2018 as subsequently amended.

WHEREAS, the Company and Executive desire to terminate the Prior Employment Agreement and contemporaneously replace the Prior Employment Agreement with this Agreement without any overlap, gap or discontinuity in the employment of the Executive.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and intending to be legally bound hereby, the Company and Executive agree as follows.

1. Employment. The Company hereby agrees to continue to employ Executive, and Executive hereby accepts such continued employment by the Company, as a full-time employee for the period and upon the terms and conditions contained in this Agreement. The Prior Employment Agreement is hereby terminated as of the Effective Date.

2. Term. Executive's term of employment with the Company under this Agreement shall begin on the Effective Date and shall continue in force and effect from year to year unless terminated earlier in accordance with Section 19 (the "Term").

3. Position and Duties. During the Term, Executive shall serve the Company as its Chief Medical Officer, reporting directly to the uniQure Chief Executive Officer (the "CEO"). Executive's duties will include but not be limited to:

- Responsible for leading the strategy and development of the medical function consisting of Clinical Operations, Medical Affairs, Global Drug Safety, Global Quality Management, Medical Information and External Medical Relations.
- Ensuring that uniQure is equipped to develop and market pharmaceutical products according to all applicable medical scientific, regulatory, ethical and legal standards

- Support uniQure's value proposition of marketing and pipeline products to design of the clinical and regulatory strategy in the context of the corporate strategy. Portfolio selection is conducted together with management.
- Develop and recommend the clinical development strategy for new drug candidates from research to regulatory approval and beyond taking into account the constraints of a small and creative biotechnology firm
- Provide leadership in being the key uniQure spokesperson to external and internal bodies on medical and scientific issues related to uniQure's products
- Manage the Global Drug Safety according to all local and international requirements
- Ensure GCP compliance of all clinical trials
- Responsible for scientific publication strategy
- Actively partner with the commercial organization to promote the scientific and medical value of uniQure's products
- Develop budget plans for all functions under the CMO and ensure program expenses in line with approved budget.
- Communicate effectively all medical objectives and activities with the company's management and other functional areas.
- Any other duties as may from time to time be reasonably assigned to you by the Company.

Executive will perform other duties consistent with the job description previously provided and as may be customarily provided by a person in such position.

4. During the Term, Executive shall devote full business time, best efforts, skill, knowledge, attention and energies to the advancement of the Company's business and interests and to the performance of Executive's duties and responsibilities as an employee of the Company. Executive shall abide by the rules, regulations, instructions, personnel practices and policies of the Company and any changes therein that may be adopted from time to time by the Company.

This Agreement will not affect Executive's existing role as a Director of the Company, except that Executive understands that he likely will be considered a non-independent, executive-director and that he will not receive separate compensation as a member of the Board of Directors of the Company (the "Board"). Executive agrees to at all times abide by the policies and decisions of the Board with respect to this Agreement, any conflicts of interest, determinations of independence, compositions of committees of the Board, compensation as a member of the Board, and any other issues related to his role as a member of the Board, and Executive agrees to take any reasonable and appropriate actions required to resolve such issues.

5. During the Term, Executive shall not be engaged in any business activity which, in the judgment of the Company, conflicts with Executive's duties hereunder, whether or not such activity is pursued for pecuniary advantage. Should Executive wish to provide any services to any other person or entity other than the Company or to serve on the board of directors of any other entity or organization, Executive shall submit a written request to the Company for consideration and approval by the Company, which approval shall not unreasonably be withheld. If the Company later makes a reasonable, good faith determination that Executive's continued service on another entity's board would be detrimental to the Company, it will give Executive thirty (30) days' written

notice that it is revoking the original approval, and Executive will resign from the applicable board within thirty (30) days after receipt of such notice. Notwithstanding the foregoing, Executive may engage in civic and charitable organizations and manage his personal and business affairs during normal business hours provided such activities do not, individually or collectively, interfere with the performance of his duties hereunder.

6. Location. Executive shall perform the services hereunder from the Company's USA headquarters at 113 Hartwell Avenue, Lexington MA, USA; provided, however, that Executive shall be required to travel from time to time for business purposes, including, without limitation, to the Company's facilities in Amsterdam, Netherlands.

7. Compensation and Benefits.

(a) *Base Salary.* For all services rendered by Executive under this Agreement, the Company will pay Executive a base salary at the annual rate of Four Hundred Forty-Two Thousand Five Hundred Thirty-Five dollars ($442,535), which shall be reviewed annually by the CEO for adjustment (the base salary in effect at any time, the "Base Salary"). Executive's Base Salary shall be paid in bi-weekly installments, less withholdings as required by law and deductions authorized by Executive, and payable pursuant to the Company's regular payroll practices in effect at the time and as may be changed from time to time, subject to the terms of this agreement.

(b) *Discretionary Bonus.* Following the end of each calendar year and subject to the approval of the Company, Executive shall be eligible for a target retention and performance bonus of Forty percent (40%) of the annual Base Salary based on performance and the Company's performance and financial condition during the applicable calendar year, as determined by the Company in its sole discretion (a "Bonus"). In any event, Executive must be an active employee of the Company as of the 1st of October of the relevant calendar year and on the date the Bonus is distributed in order to be eligible for and to earn any Bonus, as it also serves as an incentive to remain employed by the Company.

(c) *Expenses Related to Relocation.* The Company will reimburse executive for the expenses associated with Executive's relocation of himself and his family to the Boston area ("Relocation Expenses") to a maximum net amount (i.e., grossed-up to be net of taxes) of One Hundred Twenty-Five Thousand Dollars and No Cents (US $125,000.00) (the "Total Relocation Amount"). The Total Relocation Amount consists of a first relocation amount of Seventy-Five Thousand Dollars ($75,000) (the "***Initial Relocation Amount***") that is available as of Executive's original Start Date, i.e., August 20, 2018 and a second relocation amount of Fifty Thousand Dollars ($50,000) that is available as of November 1, 2019 (the "***Supplemental Relocation Amount***"). The Relocation Expenses include the following:

a) monthly local temporary housing costs (which may include furnished housing and/or rental furniture/housewares), for a maximum of 12 months, if required;

c) the expenses associated with Executive's (and his partner) 'house hunting' visits to the Boston area;

d) travel and lodging expenses incurred in Executive's weekly commutes to his current residence;

e) moving expenses;

f) other expenses associated with Executive's and his family's move to the Boston area that are not expressly set forth above, provided that for any expense greater than $1,000 Executive shall obtain written approval from SVP Human Resources prior to incurring the expense.

(c) *Reimbursement of the Supplemental Relocation Amount*. Executive agrees that he shall forfeit and be obligated to re-pay the full amount of the Relocation Expenses paid pursuant to the Supplemental Relocation Amount if, prior to November 1, 2020: (a) Executive resigns without Good Reason as defined in Section 19 (f); or (b) Executive is terminated for Cause as defined in Section 19(c). If Executive's employment terminates between the one-year anniversary of the Amendment Effective Date and 180 days after the one-year anniversary of the Amendment Effective Date, Executive's obligation to re-pay the Relocation Expenses paid pursuant to the Supplemental Relocation Amount shall be pro-rated according to the following formula: repayment obligation = RE x (1 – D/180) (RE represents the full amount of Relocation Expenses Executive received pursuant to the Supplemental Relocation Amount; D represents the number of days elapsed after the one-year anniversary of the Amendment Effective Date). Executive expressly authorizes the Company to deduct this amount from any wages or other accrued compensation or other amounts that the Company pays to Executive if his employment terminates pursuant to subsection (a) above or if his termination under subsection (b) above is undisputed. Executive may be reimbursed pursuant to the Supplemental Relocation Amount for Relocation Expenses that were incurred prior to the Amendment Effective Date, provided that such reimbursement otherwise complies with the terms of this Agreement.

8. Equity. Executive will be eligible for future equity grants pursuant to the Company's policies and procedures. All such equity grants shall be subject to the express terms and conditions of this Employment Agreement.

9. Retirement and Welfare Benefits. Executive is eligible to participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided that Executive is eligible under (and subject to all provisions of) the plan

documents that govern those programs. These include medical, dental and disability insurances. Benefits are subject to change at any time in the Company's sole discretion.

10. Paid Time Off and Holidays. Executive is eligible for 4 weeks of paid vacation per calendar year (prorated for any partial year during the term) to be taken at such times as may be approved in advance by the Company. Executive is also entitled to all paid holidays observed by the Company in the United States. Executive shall have all rights and be subject to all obligations and responsibilities with respect to paid time off and holidays as are set forth in the Company's employee manual or other applicable policies and procedures, which may provide for benefits greater than but not less than those provided in this Agreement.

11. Expense Reimbursement. During the Term, Executive shall be reimbursed by the Company for all necessary and reasonable expenses incurred by Executive in connection with the performance of Executive's duties hereunder (including business trips to the uniQure Amsterdam headquarters). Executive shall keep an itemized account of such expenses, together with vouchers and/or receipts verifying the same, and submit for reimbursement on a monthly basis. Any such expense reimbursement will be made in accordance with the Company's travel and expense policies governing reimbursement of expenses as are in effect from time to time.

12. Withholding. All amounts set forth in this Agreement are on a gross, pre-tax basis and shall be subject to all applicable federal, state, local and foreign withholding, payroll and other taxes, and the Company may withhold from any amounts payable to Executive (including any amounts payable pursuant to this Agreement) in order to comply with such withholding obligations.

13. IP and Restrictive Covenants. The Company's agreement to enter into this Agreement is contingent upon Executive's execution of the Company's Confidentiality, Developments, and Restrictive Covenants Agreement, attached as Exhibit A to this Agreement. Nothing in this Agreement or the Confidentiality, Developments, and Restrictive Covenants Agreement shall prohibit or restrict Executive from initiating communications directly with, responding to any inquiry from, providing testimony before, providing confidential information to, reporting possible violations of law or regulation to, or filing a claim or assisting with an investigation directly with a self-regulatory authority or a government agency or entity, including the Equal Employment Opportunity Commission, the Department of Labor, the National Labor Relations Board, the Department of Justice, the Securities and Exchange Commission, Congress, any agency Inspector General or any other federal, state or local regulatory authority (collectively, the "Regulators"), or from making other disclosures that are protected under the whistleblower provisions of state or federal law or regulation. Executive does not need the prior authorization of the Company to engage in conduct protected by this subsection, and Executive does not need to notify the Company that Executive has engaged in such conduct. Please take notice that federal law provides criminal and civil immunity to federal and state claims for trade secret misappropriation to individuals who disclose trade secrets to their attorneys, courts, or government officials in certain, confidential circumstances that are set forth at 18 U.S.C. §§ 1833(b)(1) and 1833(b)(2), related to the reporting or investigation of a suspected violation of the law, or in connection with a lawsuit for retaliation for reporting a suspected violation of the law.

14. At-Will Employment. This Agreement shall not be construed as an agreement, either express or implied, to employ Executive for any stated term, and shall in no way alter the Company's policy of employment at-will, under which both the Company and Executive remain free to end the employment relationship for any reason, at any time, with or without Cause or notice. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay Executive any compensation or grant Executive any benefit beyond the end of employment with the Company.

15. Conflicting Agreements. Executive acknowledges and represents that by executing this Agreement and performing Executive's obligations under it, Executive will not breach or be in conflict with any other agreement to which Executive is a party or is bound, and that Executive is not subject to any covenants against competition or similar covenants that would affect the performance of Executive's obligations for the Company.

16. No Prior Representations. This Agreement and its exhibits constitute all the terms of Executive's hire and supersedes all prior representations or understandings, whether written or oral, relating to the terms and conditions of Executive's employment.

17. Change of Control. In the event of a Change of Control as defined below, the vesting conditions that may apply to any options, restricted shares, restricted stock units, performance stock units or other grants of equity held by Executive pursuant to this Agreement and the Company's Amended and Restated 2014 Share Incentive Plan will be automatically waived, and all the Stock Options will be deemed to be fully exercisable commencing on the date of the Change of Control and ending on the eighteen (18) month anniversary of the Change of Control or, if earlier, the expiration of the term of such Stock Options. For purposes of this Agreement, "Change of Control" shall mean the date on which any of the following events occurs:

(a) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing forty (40) percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Board ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company); or

(b) a majority of the members of the Board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board before the date of the appointment or election; or

(c) the consummation of (i) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty (50) percent of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), or (ii) any sale or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company.

18. RESERVED.

19. Termination. The Term shall continue until the termination of Executive's employment with the Company as provided below.

(a) *Events of Termination.* Executive's employment, Base Salary and any and all other rights of Executive under this Agreement or otherwise as an employee of the Company will terminate:

(i) upon the death of Executive;

(ii) upon the Disability of Executive (immediately upon notice from either party to the other). For purposes hereof, the term "Disability" shall mean an incapacity by accident, illness or other circumstances which renders Executive mentally or physically incapable of performing the duties and services required of Executive hereunder on a full-time basis for a period of at least 120 consecutive days.

(iii) upon termination of Executive for Cause;

(iv) upon the resignation of employment by Executive without Good Reason (upon sixty (60) days' prior written notice);

(v) upon termination by the Company for any reason other than those set forth in Sections 19(a)(i) through 19(a)(iv) above;

(vi) upon voluntary resignation of employment by Executive for Good Reason as described in Section 19(f), below;

(vii) upon a Change of Control Termination as described in Section 19(g), below.

(b) In the event Executive's termination occurs pursuant to Sections 19(a)(i) - (iv) above, Executive will be entitled only to the Accrued Benefits through the termination date. The Company will have no further obligation to pay any compensation of any kind (including, without limitation, any Bonus or

portion of a Bonus that otherwise may have become due and payable to Executive with respect to the year in which such termination date occurs), or severance payment of any kind, unless otherwise provided herein. For purposes of this Agreement, Accrued Benefits shall mean (i) payment of Base Salary through the termination date, (ii) payment of any Bonus for performance periods completed prior to the termination date, (iii) any payments or benefits under the Company's benefit plans that are vested, earned or accrued prior to the termination date (including, without limitation, earned but unused vacation); and (iv) payment of unreimbursed business expenses incurred by Executive.

(c) For purposes of this Agreement, "Cause" shall mean the good faith determination by the Company after written notice from the Company to Executive that one or more of the following events has occurred and stating with reasonable specificity the actions that constitute Cause and the specific reasonable cure (related to subsections (i) and (viii) below):

(i) Executive has willfully or repeatedly failed to perform Executive's material duties and such failure has not been cured after a period of thirty (30) days' written notice;

(ii) any reckless or grossly negligent act by Executive having the foreseeable effect of injuring the interest, business or reputation of the Company, or any of its parents, subsidiaries or affiliates in any material respect;

(iii) Executive's evidenced use of any illegal drug, or illegal narcotic, or excessive amounts of alcohol (as determined by the Company in its reasonable discretion) on Company property or at a function where Executive is working on behalf of the Company;

(iv) the indictment on charges or conviction for (or the procedural equivalent of conviction for), or entering of a guilty plea or plea of no contest with respect to a felony;

(v) the conviction for (or the procedural equivalent of conviction for), or entering of a guilty plea or plea of no contest with respect to a misdemeanor which, in the Company's reasonable judgment, involves moral turpitude deceit, dishonesty or fraud; except that, in the event that Executive is indicted on charges for a misdemeanor set forth in this subsection 19(c)(v), the Company may elect, in its sole discretion, to place Executive on administrative garden leave with or without continuation of full compensation and benefits under this Agreement during the pendency of the proceedings;

(vi) conduct by or at the direction of Executive constituting misappropriation or embezzlement of the property of the

Company, or any of its parents or affiliates (other than the occasional, customary and *de minimis* use of Company property for personal purposes);

(vii) a breach by Executive of a fiduciary duty owing to the Company, including the misappropriation of (or attempted misappropriation of) a corporate opportunity or undisclosed self-dealing;

(viii) a material breach by Executive of any material provision of this Agreement, any of the Company's written employment policies or Executive's fiduciary duties to the Company, which breach, if curable, remains uncured for a period of thirty (30) days after receipt by Executive of written notice of such breach from the Company, which notice shall contain a reasonably specific description of such breach and the specific reasonable cure requested by the Supervisory Board; and

(ix) any breach of Executive's Confidentiality, Developments, and Restrictive Covenants Agreement.

(d) The definition of Cause set forth in this Agreement shall govern for purposes of Executive's equity compensation and any other compensation containing such a concept.

(e) *Notice Period for Termination Under Section 19(a)(iv).* Upon a termination of Executive under Section 19(a)(iv), during the notice period the Company may, in its sole discretion, relieve Executive of all of Executive's duties, responsibilities, and authority, may restrict Executive's access to Company property, and may take other appropriate measures deemed necessary under the circumstances.

(f) *Termination by Executive for Good Reason.* During the Term, Executive may terminate this Agreement at any time upon thirty (30) days' written notice to the Company for Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the Good Reason Process (hereinafter defined) following the occurrence of any of the following actions undertaken by the Company without Executive's express prior written consent: (i) the material diminution in Executive's responsibilities, authority and function; (ii) a material reduction in Executive's Base Salary, provided, however, that Good Reason shall not be deemed to have occurred in the event of a reduction in Executive's Base Salary which is pursuant to a salary reduction program affecting the CEO and all or substantially all other senior management employees of the Company and that does not adversely affect Executive to a greater extent than other similarly situated employees; provided, however that such reduction may not exceed twenty (20%) percent; (iii) a material change in the geographic location at which Executive provides services to

the Company (i.e., outside a radius of fifty (50) miles from Lexington, Massachusetts); or (iv) a material breach by the Company of this Agreement or any other material agreement between Executive and the Company concerning the terms and conditions of Executive's employment, benefits or Executive's compensation (each a "Good Reason Condition").

"Good Reason Process" shall mean that: (i) Executive has reasonably determined in good faith that a Good Reason Condition has occurred; (ii) Executive has notified the Company in writing of the first occurrence of the Good Reason Condition within 60 days of the first occurrence of such condition; (iii) Executive has cooperated in good faith with the Company's efforts, for a period not less than thirty (30) days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason Condition continues to exist; and (v) Executive terminates employment within sixty (60) days after the end of the Cure Period. If the Company cures to Executive's satisfaction (not unreasonably withheld) the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(g) *Termination As A Result of A Change Of Control.* For purposes of this Agreement, "Change of Control Termination" shall mean any of the following:

(i) Any termination by the Company of Executive's employment, other than for Cause (as defined in Section 19(c), above), that occurs within the period beginning ninety (90) days before and continuing until twelve (12) months after the Change of Control; or

(ii) Any resignation by Executive for Good Reason (as defined in Section 19(f), above), that occurs within twelve (12) months after the Change of Control.

(iii) For purposes of this Section 19(g), "Change of Control" shall have the same meaning as defined above in Section 17.

(h) *Separation Benefits.* Should Executive experience a termination of employment during the Term pursuant to Section 19(a)(v), (vi) or (vii) above, in addition to the Accrued Benefits Executive shall also be entitled to:

(i) *Lump Sum Severance Payment*:

a. In the case of a termination of employment during the Term pursuant to Section 19(a)(v) or (vi) above: a lump sum severance payment equal to 100% of the sum of (A) Executive's annual Base Salary and (B) Executive's target Bonus amount pursuant to

Section 7(b) hereof (*i.e.*, Forty percent (40%) of Executive's annual Base Salary);

(ii) In the case of a termination of employment during the Term pursuant to Section 19(a)(vii) above: a lump sum severance payment equal to 150% of the sum of (A) Executive's annual Base Salary and (B) Executive's target Bonus amount pursuant to Section 7(b) hereof (*i.e.*, Forty percent (40%) of Executive's annual Base Salary);

(iii) a Pro-rata Bonus paid at the target bonus amount for the year of termination, as set forth in and subject to Section 7(b); as used in this Agreement, the term "Pro-rata Bonus" shall mean the product of the formula B x D/365 where B represents the target Bonus (*i.e.,* Forty percent (40%) of Executive's annual Base Salary), and D represents the number of days elapsed in the calendar year through the date of the separation of Executive's employment from the Company.

(iv) Provided that Executive and Executive's eligible dependents, if any, are participating in the Company's group health, dental and vision plans on the termination date and elect on a timely basis to continue that participation in some or all of the offered plans through the federal law commonly known as "COBRA," the Company will pay or reimburse Executive for Executive's full COBRA premiums (i.e., employer and employee portion) until the earlier to occur of: (a) the expiration of the COBRA Payment Term (as defined below), (b) the date Executive becomes eligible to enroll in the health, dental and/or vision plans of another employer, (c) the date Executive (and/or Executive's eligible dependents, as applicable) is no longer eligible for COBRA coverage, or (d) the Company in good faith determines that payments under this paragraph would result in a discriminatory health plan pursuant to the Patient Protection and Affordable Care Act of 2010, as amended, and any guidance or regulations promulgated thereunder (collectively, "PPACA"). Executive agrees to notify the Company promptly if Executive becomes eligible to enroll in the plans of another employer or if Executive or any of Executive's dependents cease to be eligible to continue participation in the Company's plans through COBRA. "COBRA Payment Term" mean (x) in the case of a termination of employment during the Term pursuant to Section 19(a)(v) or (vi) above, the twelve (12) month anniversary of Executive's termination date, and (y) in the case of a termination of employment during the Term pursuant to Section 19(a)(vii) above, the eighteen (18) month anniversary of Executive's termination date.

To avoid duplication of severance payments, any amount paid under this subsection shall be offset against any severance amounts that may be owed by the Company to Executive pursuant to any of Company's Change of Control guidelines as may be adopted or amended.

20. General Release of Claims. Notwithstanding any provision of this agreement, all severance payments and benefits described in Section 19 of this Agreement (except for payment of the Accrued Benefits) are conditioned upon the execution, delivery to the Company, and expiration of any applicable revocation period without a notice of revocation having been given by Executive, all by the 30th day following the termination date of a General Release of Claims by and between Executive (or Executive's estate) and the Company in the form attached as Exhibit B to this Agreement. (In the event of Executive's death or incapacity due to Disability, the release will be revised for signature accordingly.) Provided any applicable timing requirements set forth above have been met, the payments and benefits will be paid or provided to Executive as soon as administratively practicable (but not later than forty-five (45) days) following the date Executive signs and delivers the General Release to the Company and any applicable revocation period has expired without a notice of revocation having been given. Any severance or termination pay will be the sole and exclusive remedy, compensation or benefit due to Executive or Executive's estate upon any termination of Executive's employment (without limiting Executive's tights under any disability, life insurance, or deferred compensation arrangement in which Executive participates or at the time of such termination of employment or any Option Agreements or any other equity agreements to which Executive is a party). If such 45-day period spans two calendar years, payment will be paid after such 45-day period and revocation period have expired.

21. Certain Company Remedies. Executive acknowledges that Executive's promised services and covenants are of a special and unique character, which give them peculiar value, the loss of which cannot be reasonably or adequately compensated for in an action at law, and that, in the event there is a breach hereof by Executive, the Company will suffer irreparable harm, the amount of which will be impossible to ascertain. Accordingly, the Company shall be entitled, if it so elects, to institute and prosecute proceedings in any court of competent jurisdiction, either at law or in equity, to obtain damages for any breach of this Agreement, or to enjoin Executive from committing any act in breach of this Agreement. The remedies granted to the Company in this Agreement are cumulative and are in addition to remedies otherwise available to the Company at law or in equity.

22. Indemnification.

(a) The Company agrees that Executive shall be entitled to indemnification to the fullest extent permitted by Delaware law and under the Company's articles of incorporation, bylaws and any other corporate-related plan, program or policy. In addition, for a period of at least three (3) years after Executive's termination of employment, the Company shall maintain a directors and officers liability insurance policy under which Executive shall be included as a "Covered Person."

(b) In addition, and for the sake of clarity, the Company hereby specifically agrees that (i) if Executive is made a party, or is threatened to be made a party, to any "Proceeding" (defined as any threatened or actual action, suit or proceeding whether civil, criminal, administrative, investigative, appellate or other) by reason of the fact that (1) Executive is or was an employee, officer, director, agent, consultant or representative of the Company, or (2) is or was serving at the request of the Company as employee, officer, director, agent, consultant or representative of another person, or (ii) if any "Claim" (defined as any claim, demand, request, investigation, dispute, controversy, threat, discovery request or request for testimony or information) is made, or threatened to be made, that arises out of or relates to Executive's service in any of the foregoing capacity or to the Company, then Executive shall be indemnified and held harmless by the Company to the fullest extent permitted by applicable law, against any and all costs, expenses, liabilities and losses (including, without limitation, attorney's fees, judgments, interest, expenses of investigation, penalties, fines, taxes or penalties and amounts paid or to be paid in settlement) incurred or suffered by Executive in connection therewith, except with respect to any costs, expenses, liabilities or losses (A) that were incurred of suffered as a result of Executive's willful misconduct, gross negligence or knowing violation of any written agreement between Executive and the Company, (B) that a court of competent jurisdiction determines to have resulted from Executive's knowing and fraudulent acts; provided, however, that the Company shall provide such indemnification only if (I) notice of any such Proceeding is given promptly to the Company, by Executive; (II) the Company is permitted to participate in and assume the defense of any such Proceeding; (III) such cost, expense, liability or loss results from the final judgment of a court of competent jurisdiction or as a result of a settlement entered into with the prior written consent of the Company; and (IV) in the case of any such Proceeding (or part thereof) initiated by Executive, such Proceeding (or part thereof) was authorized in advance in writing by the Company. Such indemnification shall continue even if Executive has ceased to be an employee, officer, director, agent, consultant or representative of the Company until all applicable statute of limitations have expired, and shall inure to the benefit of Executive's heirs, executors and administrators. The Company shall pay directly or advance to Executive all costs and expenses incurred by Executive in connection with any such Proceeding or Claim (except for Proceedings brought by the Company against Executive for claims other than shareholder derivative actions) within 30 days after receiving written notice requesting such an advance. Such notice shall include, to the extent required by applicable law, an undertaking by Executive to repay the amount advanced if Executive was ultimately determined not to be entitled to indemnification against such costs and expenses

23. Miscellaneous.

(a) *Right to Offset.* The Company may offset any undisputed amounts Executive owes the Company at the time of Executive's termination of employment (including any payment of Accrued Benefits or separation

pay), except for secured or unsecured loans, against any amounts the Company owes Executive hereunder, subject in all cases to the requirements of Section 409A of the Code.

(b) *Cooperation.* Executive agrees that, during and after Executive's employment with the Company, subject to reimbursement of Executive's reasonable expenses, Executive will cooperate fully with the Company and its counsel with respect to any matter (including, without limitation, litigation, investigations, or governmental proceedings) in which Executive was in any way involved during Executive's employment with the Company. Executive shall render such cooperation in a timely manner on reasonable notice from the Company, and at such times and places as reasonably acceptable to Executive and the Company. The Company, following Executive's termination of employment, exercises commercially reasonable efforts to schedule and limit its need for Executive's cooperation under this paragraph so as not to interfere with Executive's other personal and professional commitments.

(c) *Company Documents and Property.* Upon termination of Executive's employment with the Company, or at any other time upon the request of Company, Executive shall forthwith deliver to Company any and all documents, notes, notebooks, letters, manuals, prints, drawings, block diagrams, photocopies of documents, devices, equipment, keys, security passes, credit cards, hardware, data, databases, source code, object code, and data or computer programming code stored on an optical or electronic medium, and any copies thereof, in the possession of or under the control of Executive that embodies any confidential information of the Company. Executive agrees to refrain from purging or deleting data from any Company-owned equipment, including email systems, in connection with Executive's termination. To the extent that Executive possesses any data belonging to Company on any storage media owned by Executive (for example, a home computer's hard disk drive, portable data storage device, etc.), Executive agrees that Executive will work cooperatively with the Company to return such data and ensure it is removed from Executive's devices in a manner that does not adversely impact any personal data. Executive agrees not to take any steps to delete any Company data from any device without first obtaining Company's written approval. Executive agrees to cooperate with Company if Company requests written or other positive confirmation of the return or destruction of such data from any personal storage media. Nothing herein shall be deemed to prohibit Executive from retaining (and making copies of): Executive's personal non-business-related correspondence files; or (ii) documents relating to Executive's personal compensation, benefits, and obligations, and documents reasonably necessary to prepare personal income tax returns.

(d) *Waivers.* No waiver of any provision will be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement does

not prevent subsequent enforcement of that term or obligation. The waiver by any party of any breach of this Agreement does not waive any subsequent breach.

(e) *Section 409A.* This Agreement is intended to comply with Section 409A of the Code, and its corresponding regulations, or an exemption thereto, and payments may only be made under this Agreement upon an event and in a manner permitted by Section 409A of the Code, to the extent applicable. Severance benefits under this Agreement are intended to be exempt from Section 409A of the Code under the "short-term deferral" exception, to the maximum extent applicable, and then under the "separation pay" exception, to the maximum extent applicable. Notwithstanding anything in this Agreement to the contrary, if required by Section 409A of the Code, if Executive is considered a "specified employee" for purposes of Section 409A of the Code and if payment of any amounts under this Agreement is required to be delayed for a period of six months after separation from service pursuant to Section 409A of the Code, payment of such amounts shall be delayed as required by Section 409A of the Code, and the accumulated amounts shall be paid in a lump-sum payment within 10 days after the end of the six-month period. If Executive dies during the postponement period prior to the payment of benefits, the amounts withheld on account of Section 409A of the Code shall be paid to the personal representative of Executive's estate within 60 days after the date of Executive's death. All payments to be made upon a termination of employment under this Agreement may only be made upon a "separation from service" under Section 409A of the Code. For purposes of Section 409A of the Code, each payment hereunder shall be treated as a separate payment, and the right to a series of installment payments under this Agreement shall be treated as a right to a series of separate payments. In no event may Executive, directly or indirectly, designate the fiscal year of a payment. Notwithstanding any provision of this Agreement to the contrary, in no event shall the timing of Executive's execution of the General Release, directly or indirectly, result in Executive's designating the fiscal year of payment of any amounts of deferred compensation subject to Section 409A of the Code, and if a payment that is subject to execution of the General Release could be made in more than one taxable year, payment shall be made in the later taxable year. All reimbursements and in-kind benefits provided under this Agreement shall be made or provided in accordance with the requirements of Section 409A of the Code, including, where applicable, the requirement that (i) any reimbursement be for expenses incurred during the period specified in this Agreement, (ii) the amount of expenses eligible for reimbursement, or in-kind benefits provided, during a fiscal year not affect the expenses eligible for reimbursement, or in-kind benefits to be provided, in any other fiscal year, (iii) the reimbursement of an eligible expense be made no later than the last day of the fiscal year following the year in which the expense is

incurred, and (iv) the right to reimbursement or in-kind benefits not be subject to liquidation or exchange for another benefit.

(f) *Governing Law; Consent to Exclusive Jurisdiction and Venue.* This Agreement and all questions relating to its validity, interpretation, performance and enforcement (including, without limitation, provisions concerning limitations of actions), shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts (notwithstanding any conflict-of-laws doctrines of such state or other jurisdiction to the contrary), and without the aid of any canon, custom or rule of law requiring construction against the draftsman. The parties hereby consent and submit to the exclusive jurisdiction of the federal and state courts in the Commonwealth of Massachusetts, and to exclusive venue in any Massachusetts federal court and/or Massachusetts state court located in Suffolk County, for any dispute arising from this Agreement.

(g) *Notices.* Any notices, requests, demands, and other communications described in this Agreement are sufficient if in writing and delivered in person or sent postage prepaid, by certified or registered U.S. mail or by FedEx/UPS **to** Executive at Executive's last known home address and a copy by e-mail to Executive, or in the case of the Company, to the attention of the CFO or SVP HR, copy to the CEO at the main office of uniQure, N.V. Any notice sent by U.S. mail shall be deemed given for all purposes 72 hours from its deposit in the U.S. mail, or the next day if sent by overnight delivery.

(h) *Successors and Assigns.* Executive may not assign this Agreement, by operation of law or otherwise, without the Company's prior written consent. Without the Company's consent, any attempted transfer or assignment will be void and of no effect. The Company may assign its rights under this Agreement if the Company consolidates with or merges into any other entity, or transfers substantially all of its properties or assets to any other entity, provided that such entity expressly agrees to be bound by the provisions hereof. This Agreement will inure to the benefit of and be binding upon the Company and Executive, their respective successors, executors, administrators, heirs, and permitted assigns.

(i) *Counterparts; Facsimile.* This Agreement may be executed in two or more counterparts, each of which shall be an original and all of which together shall constitute one and the same instrument. This Agreement may be executed by facsimile transmission, PDF, electronic signature or other similar electronic means with the same force and effect as if such signature page were an original thereof.

(j) *Severability.* The provisions of this Agreement are independent of and separable from each other, and no provision shall be affected or rendered invalid or unenforceable by virtue of the fact that for any reason any other

provision or provisions may be invalid or unenforceable in whole or in part.

(k) *Enforceability.* If any portion or provision of the Agreement is declared illegal or unenforceable by a court of competent jurisdiction, the remainder of the Agreement will not be affected, and each remaining portion and provision of this Agreement will be valid and enforceable to the fullest extent permitted by law.

(l) *Survival.* Sections 13, 20, 21, and the Company's Confidentiality, Developments, and Restrictive Covenants Agreement (Exhibit A) and all other provisions necessary to give effect thereto, shall survive the termination of Executive's employment for any reason.

(m) *Recoupment and Other Policies.* All payments under this Agreement shall be subject to any applicable clawback and recoupment policies and other policies that may be implemented by the Board from time to time, including, without limitation, the Company's right to recover amounts in the event of a financial restatement due in whole or in part to fraud or misconduct by one or more of the Company's executives or in the event Executive violates any applicable restrictive covenants in favor of the Company to which Executive is subject.

(n) *Entire Agreement; Amendment.* This Agreement contains the entire understanding among the parties hereto with respect to the subject matter hereof, and supersedes all prior and contemporaneous agreements and understandings, inducements or conditions, express or implied, oral or written, between the parties hereto (including without limitation any prior employment agreements between the parties hereto); provided, however, that any agreements referenced in this Agreement or executed herewith are not superseded. The express terms hereof control and supersede any course of performance and/or usage of the trade inconsistent with any of the terms hereof. This Agreement may be amended or modified only by a written instrument signed by Executive and by a duly authorized representative of the Company.

(o) *Section Headings.* The section headings in this Agreement are for convenience only, form no part of this Agreement and shall not affect its interpretation.

[This space intentionally left blank.]

IN WITNESS WHEREOF, the parties have executed and delivered this Agreement as of the date first above written.

uniQure, Inc.

By: /s/ Matthew Kapusta
Name: Matthew Kapusta
Title: Chief Executive Officer

EXECUTIVE

/s/ Robert Gut
Dr. Robert Gut
Title: Chief Medical Officer

EXHIBIT A
UNIQURE, INC.
CONFIDENTIALITY, INVENTIONS, AND
RESTRICTIVE COVENANTS AGREEMENT

This Confidentiality, Inventions, and Restrictive Covenants Agreement (the "Agreement") is made between uniQure, Inc. ("uniQure"), and Robert Gut (the "Employee") (collectively, the "Parties") in conjunction with an Employment Agreement providing additional severance and other benefits dated March 1, 2020.

In exchange for uniQure's agreement to employ Employee in a capacity of high trust and confidence and/or in which Employee will develop or receive highly sensitive Confidential Information and in which Employee may develop customer or supplier Goodwill, and for other good and valuable consideration, including the compensation and benefits referred to herein and/or provided for in Employee's offer letter or employment agreement, the receipt and sufficiency of which are hereby acknowledged, Employee hereby agrees as follows:

1. **Employment At Will.** Employee agrees that Employee remains an "at will" employee of uniQure and that Employee may terminate Employee's employment at any time. Employee further agrees that uniQure may similarly terminate Employee's employment at any time as per the Employment Agreement between the Parties. This agreement does not create a contract for employment for any specified duration, either expressly or by implication.

2. **Subsequent Material Changes in Employment.** Even though the nature of Employee's relationship with uniQure is as an "at will" employee, the Parties have entered into this Agreement with the understanding that it is possible that Employee's position, title, duties and responsibilities could increase, decrease, develop, evolve, or otherwise change in a material way in the future and, in light of that understanding, the Parties nevertheless intend that this Agreement shall follow Employee throughout the entire course of Employee's or her employment with uniQure and that any such subsequent material change shall not affect either the enforceability or the validity of this Agreement.

3. **Non-disclosure of Confidential Information**. Employee acknowledges that, for Employee to perform Employee's duties properly, Employee will have access to and uniQure must necessarily entrust Employee with certain proprietary and confidential business information (the "Confidential Information"). Employee agrees that, during the term of Employee's employment with uniQure and at all times thereafter, regardless of the reason for termination of employment, Employee will not disclose any Confidential Information or use it in any way, except with prior written authorization and on behalf of uniQure, whether or not such Confidential Information is produced by Employee's own efforts.

a. For purposes of this Agreement, "Confidential Information" means all original and copies of all material, data, documents, and information in any format (including without limitation all hardcopy, softcopy, electronic, web, and computer-based information, documents, data files, records, videos, pictures, and recordings) which constitutes confidential and/or trade secret information as further defined in this Agreement

and/or Massachusetts law. Examples of Confidential Information include, but are not limited to:

- § All such information and knowledge about uniQure and the products, services, standards, specifications, procedures, business methods and techniques which are not in the public domain or generally known in the industry;
- § business development plans and activities, including the identity and characteristics of uniQure's current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § information concerning pending and prospective mergers, acquisitions, or other types of transactions;
- § the prices, terms and conditions of uniQure's contracts or agreements with its current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § the identities, needs and requirements of uniQure's current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § cost and pricing policies and data, including the costs of uniQure's business and all results of its business operations;
- § financial information, including but not limited to results from operations, results relating to various brands, profit/loss and revenue figures, transaction data, account information;
- § facility and data security-related information, including door access codes, computer access codes, security system PINs, computer system user identification information, passwords and remote access codes;
- § personnel information; and
- § intellectual property, including any patents, trademarks or servicemarks, of uniQure.

b. Employee further acknowledges that the development or acquisition of such Confidential Information is the result of great effort and expense by uniQure, that the Confidential Information is critical to the survival and success of uniQure, and that the unauthorized disclosure or use of the Confidential Information would cause uniQure irreparable harm.

4. **Inventions and Developments:**

a. **Disclosure:** Employee shall promptly and fully disclose to uniQure any and all writings, inventions, products, ideas, discoveries, developments, methods, techniques, technical data, processes, formulas, improvements, know-how, biological or chemical materials, compositions and scientific or business innovations (whether or not reduced to practice and whether or not protectable under state, federal or foreign patent, copyright, trade secret or similar laws) (collectively the "Inventions") that Employee makes, conceives, devises, invents, creates, develops or writes, either solely or jointly with others, either within or without uniQure, during the period of Employee's employment with uniQure.

b. **Further Assurances:** Upon and/or following disclosure of each Invention to uniQure, Employee will, during Employee's employment and at any time thereafter, at

the request and cost of uniQure, sign, execute, make and do all such deeds, instruments, documents, acts and things as uniQure and its duly authorized agents may reasonably require to apply for, obtain and vest in the name of uniQure alone (unless uniQure otherwise directs) letters patent, copyrights or other analogous protection in any country throughout the world, including all right, title and interest in the Inventions, and when so obtained or vested to renew and restore the same; and to defend any opposition proceedings in respect of such applications and any opposition proceedings or petitions or applications for revocation of such letters patent, copyright or other analogous protection.

c. **Works Made For Hire:** Employee acknowledges that all written or computer coded materials manifested in documents, systems design, disks, tapes, drawings, reports, specifications, data, memoranda or otherwise prepared in whole or in part by Employee, jointly or singly, in the course of Employee's employment, whether on uniQure's time or on Employee's own time, including without limitation all Inventions, shall be "works made for hire" under the Copyright Act of 1976 (the "Copyright Act"), and shall be the sole property of uniQure and uniQure shall be the sole author of such works within the meaning of the Copyright Act. All such works (the "Work Product"), as well as all copies of such works in whatever medium, shall be owned exclusively by uniQure and Employee hereby expressly disclaims any and all interests in such works. If the copyright to any such work shall not be the property of uniQure by operation of law, Employee hereby and without further consideration, irrevocably assigns to uniQure all right, title and interest in such work, including all so-called "moral rights," and will assist uniQure and its nominees in every proper way, at uniQure's expense, to secure, maintain and defend for uniQure's own benefit copyrights and any extensions and renewals thereof on such work, including translations thereof in any and all countries, such work to be and to remain the property of uniQure whether copyrighted or not. If the foregoing moral rights cannot be so assigned under the applicable laws of the countries in which such rights exist, Employee hereby waives such moral rights and consents to any action of uniQure that would violate such rights in the absence of such consent. Employee warrants that no Work Product shall contain any material owned by any third party, except as disclosed to uniQure pursuant to subsection (b), and that as to any such material, Employee shall have all rights necessary to provide to uniQure the full, unrestricted benefits to such material as incorporated into the Work Product.

d. **Assignment:** Without in any way limiting the foregoing, Employee hereby assigns to uniQure all right, title and interest to all Inventions, including but not limited to patent rights and copyrights.

e. **Power of Attorney:** In the event uniQure is unable, after reasonable effort, to secure Employee's signature on any letters patent, copyright or other analogous protection relating to an Invention, whether because of Employee's physical or mental incapacity or for any other reason whatsoever, Employee hereby irrevocably designates and appoints uniQure and its duly authorized officers and agents as Employee's agent and attorney-in-fact, to act for and in Employee's behalf and stead to execute and file any such application or applications and to do all other lawfully permitted acts to further the prosecution thereon with the same legal force and effect as if executed by Employee.

f. **Employee Developments:** Employee represents that all developments, inventions, works of authorship or other intellectual property rights to which Employee claims ownership as of the date of this Agreement (the "Employee Developments"), and which the parties agree are excluded from this Agreement, are listed in Exhibit A attached hereto. If no such Employee Developments are listed on Exhibit A, Employee represents that there are no such Employee Developments at the time of signing this Agreement.

g. After the date hereof, Employee will promptly disclose to uniQure and uniQure agrees to receive all disclosures in confidence, any improvements, discoveries, software, designs or writing of Employee that exist, regardless of the state of completion, to determine if they shall be deemed Inventions.

5. **Restrictive Covenants:**

a. For the purposes of this Section:

"Competing Products and Services" means any product, process, therapy or service of any person or organization other than uniQure that is in development or has been commercialized and that involves a gene therapy or the manufacture of a gene therapy: (i) for the treatment of any disease for which uniQure has a product or therapy on the market or in any phase of development during the term of Employee's employment with uniQure, including, without limitation, any such products in the field of cardiovascular, central nervous system, liver or metabolic disease, or (ii) using an adeno-associated virus serotype (AAV); or (iii) that otherwise is directly competitive (or, for any products, processes, therapies or services in the development stage, would be directly competitive, if marketed or sold) with any uniQure product or therapy on the market or in any phase of development during the term of Employee's employment with uniQure.

"Competing Organization" means any legal entity, including, without limitation, any company, corporation, partnership, sole proprietorship, bureau, ministry or agency, that develops, makes, uses, sells, imports, distributes, sells Competing Products and Services or otherwise consults or assists with such activities.

"Prohibited Activities" means any specific types of services performed by the Employee for uniQure or its affiliates at any time during the two (2) years preceding the termination of employment.

b. **Non-Solicitation and Non-Acceptance:** Employee agrees that during Employee's employment and for a period of eighteen (18) months after the termination of employment for any reason, Employee shall not directly or indirectly:

i. recruit, solicit, or hire any employee, consultant, independent contractor who performed services for uniQure, or induce or attempt to induce any such employee, consultant, or independent contractor, to reduce or discontinue Employee's employment, contractual, or other affiliation with uniQure;

ii. contact or accept business from any individual or entity that was an actual or prospective customer or business relationship of uniQure and that Employee serviced, had contact with, or learned Confidential Information about during employment at uniQure, for the purpose of soliciting the sale of or selling Competing Products and Services to such individual or entity and/or to divert any portion of that individual's or entity's business away from uniQure.

c. **Non-competition:** Employee agrees that during Employee's employment and for a period of twelve (12) months after the termination of employment (the "Non-Competition Period"), except in the case where Employee is terminated by uniQure without cause, Employee shall not directly or indirectly, perform Prohibited Activities (whether as an employee, consultant, independent contractor, member of a board of directors, or in any other capacity) to a Competing Organization within the Geographic Area assigned to Employee in Employee's position(s) with uniQure, or where Employee provided services or had a material presence or influence, during any time within the last two (2) years of employment with uniQure. Notwithstanding the foregoing, nothing herein shall prevent Employee from becoming employed by or otherwise rendering services to a Competing Organization whose business is diversified, if the scope of Employee's services to such Competing Organization is limited to identifiable parts, segments, entities or business units of such business that, are not engaged in providing or producing Competing Services. Employee agrees that if Employee seeks to become employed or otherwise renders services to such a Competing Organization during the restricted period, prior to Employee's employment or rendering such services, (i) Employee shall provide uniQure with written assurance from such Competing Organization and from Employee that Employee will not render services directly or indirectly in connection with any Competing Services, and (ii) Employee receives written approval of Employee's intended employment or rendering such services (such approval shall not be unreasonably withheld and shall be provided by uniQure within ten (10) days from receipt of the written assurances set forth in subsection (i)). uniQure may, in its sole discretion, waive all or a portion of the Non-Competition Period. uniQure and Employee mutually agree that the following consideration offered to Employee in Employee's employment agreement supports Employee's promises, undertakings, and obligations under this Section 5(c) regarding post-employment non-competition: the equity grants associated with Employees Employment Agreement, bonus payments and additional severance benefits, which consideration Employee acknowledges and agree is adequate, fair, reasonable, and mutually agreed upon. The "Geographic Area" assigned to Employee is worldwide.

d. Nothing contained herein shall preclude Employee from participating, directly or indirectly, as a passive investor in the securities of any publicly-traded corporation.

e. **Disclosure of Agreement to Subsequent Employers:** During the eighteen (18) month period following Employee's termination of employment from uniQure for any reason, Employee agrees to disclose this Agreement to every subsequent employer by which Employee may subsequently be employed or otherwise engaged in exchange for compensation

f. **Disclosure of Future Employment to uniQure**. For a period of one (1) year after the termination of employment with the Company for any reason, Employee shall promptly notify the Company of any change of address, and of any subsequent employment (stating the name and address of the employer and the title and duties of the position) or other business activity. In the event Employee fails to comply with this paragraph the non-solicitations, non-acceptance and noncompete periods set forth in paragraphs 5(a)-(c) shall be tolled, and shall commence with the date of the entry of a preliminary injunction

g. **Reasonableness of Temporal Scope:** Employee agrees that the temporal restrictions set forth in this Section are fair and are reasonably required for the protection of uniQure's legitimate business interests in light of Employee's substantial role as an employee of uniQure.

h. **Reasonableness of Geographic Scope:** Employee agrees that the geographic scope on Employee's obligations set forth in this Section is both appropriate and reasonable.

i. **Tolling of Post-Employment Obligations:** If it is later determined by a court of competent jurisdiction that injunctive relief is warranted to prevent Employee from engaging in certain post-employment conduct, then the restrictive periods shall be tolled for the lesser of the period of time that Employee is determined by a court of competent jurisdiction to have had already been engaging in the prohibited conduct prior to the injunction and the maximum period allowed by law. The Parties intend that uniQure shall be entitled to full restrictive periods of post-employment conduct that does not breach or threaten to breach this Agreement.

6. **Specific Performance.** Employee acknowledges that a breach of this Agreement will cause irreparable injury to uniQure, that uniQure's remedies at law will be inadequate in case of any such breach or threatened breach, and that uniQure will be entitled to preliminary injunctive relief, without bond, and other injunctive relief in case of any such breach or threatened breach.

7. **Waivers.** The waiver by uniQure or Employee of any action, right or condition in this Agreement, or of any breach of a provision of this Agreement, shall not constitute a waiver of any other occurrences of the same event.

8. **Survival, Binding Effect.** This Agreement shall survive the termination of Employee's employment with uniQure regardless of the manner of such termination and shall be binding upon Employee and Employee's heirs, executors and administrators.

9. **Assignability by uniQure.** This Agreement is assignable by uniQure and inures to the benefit of uniQure, its subsidiaries, affiliated corporations, successors and assignees. This Agreement, being personal, is not assignable by Employee.

10. **Severability**. The covenants of this Agreement are intended to be separable, and the expressions used therein are intended to refer to divisible entities. Accordingly, the invalidity of all or any part of any section of this Agreement shall not render invalid the remainder of this Agreement or of such section. If, in any judicial proceeding, any provision of this Agreement is

found to be so broad as to be unenforceable, it is hereby agreed that such provision shall be interpreted to be only so broad as to be enforceable.

11. **Notice of Immunity Rights.** You shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of confidential information or a trade secret that is made in confidence to a Federal, State, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law. You shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of confidential information or a trade secret that is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the confidential information or trade secret to the attorney of the individual and use the confidential/trade secret information in the court proceeding, provided that the individual files any document containing the confidential information or trade secret under seal and does not disclose the confidential information or trade secret, except pursuant to court order.

12. **Protected Rights.** Nothing contained in this Agreement limits your ability to file a charge or complaint with the Equal Employment Opportunity Commission, the National Labor Relations Board, the Occupational Safety and Health Administration, the Securities and Exchange Commission or any other federal, state or local governmental agency or commission ("Government Agencies"). You further recognize that this Agreement does not limit your ability to communicate with any Government Agencies or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, including providing documents or other information, without notice to uniQure. This Agreement does not limit your right to receive an award for information provided to any Government Agencies.

13. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts, but not the Commonwealth's laws concerning conflict of laws, and shall be deemed to have been made in Massachusetts.

14. **Consent To Exclusive Jurisdiction/Venue**. The Parties hereby consent and submit to the exclusive jurisdiction of the federal and state courts in the Commonwealth of Massachusetts, and to exclusive venue in any Massachusetts federal court and/or Massachusetts state court located in Suffolk County, for any dispute arising from this Agreement.

15. **Covenant Not To Sue Outside Of Massachusetts.** Employee hereby agrees that Employee will not commence, prosecute, or assist in any way another person or entity to commence or prosecute, any legal action or other proceeding (including but not limited to a declaratory judgment action) against uniQure concerning a dispute arising from or relating to this Agreement in any forum or jurisdiction other than the state and federal courts in the state of Massachusetts.

16. **Breach/Right to Consult Legal Counsel.** In addition to uniQure's other rights and remedies, in the event that a court of law finally determines that Employee has breached Employee's obligations under this Agreement, to the fullest extent permitted by law, Employee will be liable for reasonable costs and attorneys' fees incurred by uniQure in connection with the enforcement of its rights under this Agreement. Employee acknowledges that Employee has been

advised of Employee's right to consult with legal counsel prior to signing this Agreement, and that Employee has had a full and adequate opportunity to do so.

17. **Waiver of Right to Jury Trial and Punitive Damages.** EACH PARTY WAIVES ANY RIGHT TO SEEK A JURY TRIAL AND TO CLAIM FOR OR RECOVER ANY PUNITIVE DAMAGES IN ANY PROCEEDING REGARDING ANY DISPUTE THAT MAY ARISE BETWEEN THEM.

18. **Entire Agreement, Amendments.** This Agreement constitutes the entire understanding of the parties with respect to its subject matter, supersedes any prior communication or understanding with respect thereto, and no modification or waiver of any provision hereof shall be valid unless made in writing and signed by all of the parties hereto.

19. **Return of uniQure Property and Confidential Information/Non-Deletion of Data.** Upon termination of Employee's engagement by uniQure, or at any other time upon the request of uniQure, Employee shall forthwith deliver to uniQure any and all documents, devices, equipment, keys, security passes, credit cards, hardware, data, databases, source code, object code, and data or computer programming code stored on an optical or electronic medium, and any copies thereof, relating to uniQure's business and affairs, including all materials that are in the possession of or under the control of Employee and that incorporate any Confidential Information or any reference thereto. Employee agrees to refrain from purging or deleting data from any uniQure-owned equipment, including email systems, in connection with Employee's termination. To the extent that Employee possesses any data belonging to uniQure on any storage media owned by Employee (for example, a home computer's hard disk drive, portable data storage device, etc.), Employee agrees that Employee will work cooperatively with uniQure to return such data and ensure it is removed from Employee's devices in a manner that does not adversely impact any personal data. Employee agrees not to take any steps to delete any uniQure data from any device without first obtaining uniQure's written approval. Employee agrees to cooperate with uniQure if uniQure requests written or other positive confirmation of the return or destruction of such data from any personal storage media.

20. **EMPLOYEE ACKNOWLEDGES AND AGREES THAT THE CONSIDERATION PROVIDED TO EMPLOYEE AT THE COMMENCEMENT OF EMPLOYMENT BEYOND THE EMPLOYEES BASE SALARY (INCLUDING, WITHOUT LIMITATION, ANY PROMISE OF STOCK OR OPTION GRANTS, SIGNING BONUS, OR OTHER BONUS) CONSTITUTE SUFFICIENT CONSIDERATION FOR EMPLOYEE'S AGREEMENT TO ABIDE BY THE TERMS OF THIS AGREEMENT**.

21. This Agreement may be executed in multiple counterparts, each of which shall be treated as an original. Facsimile signatures shall be valid and effective for all purposes.

[REMAINDER OF PAGE IS BLANK]

EMPLOYEE

By: /s/ Robert Gut
Name: Robert Gut

Date: February 28, 2020

uniQure, Inc.

By : /s/ Matthew Kapusta
Name: Matthew Kapusta

Date: February 28, 2020

EXHIBIT A

LIST OF EMPLOYEE DEVELOPMENTS
(*if none, please write the word "none" and sign below*)

None

Signature

/s/ Robert Gut
Robert Gut

Date: _____, _____

EXHIBIT B

GENERAL RELEASE OF CLAIMS

In exchange for the promises and benefits set forth in Section 19 of the Employment Agreement between uniQure, Inc. and **Robert Gut** made as of **March 1, 2020,** and to be provided to me following the Effective Date of this General Release, I, **Robert Gut,** on behalf of myself, my heirs, executors and assigns, hereby acknowledge, understand and agree as follows:

1. On behalf of myself and my family, heirs, executors, administrators, personal representatives, agents, employees, assigns, legal representatives, accountants, affiliates and for any partnerships, corporations, sole proprietorships, or other entities owned or controlled by me, I fully release, acquit, and forever discharge uniQure, Inc., its past, present and future officers, directors, shareholders, agents, representatives, insurers, employees, attorneys, subsidiaries, affiliated corporations, parents, and assigns (collectively, the "Releasees"), from any and all charges, actions, causes of action, claims, grievances, damages, obligations, suits, agreements, costs, expenses, attorneys' fees, or any other liability of any kind whatsoever, suspected or unsuspected, known or unknown, which have or could have arisen out of my employment with or services performed for Releasees and/or termination of my employment with or termination of my services performed for Releasees (collectively, "Claims"), including:

a. Claims arising under Title VII of the Civil Rights Act of 1964 (as amended); the Civil Rights Acts of 1866 and 1991; the Americans With Disabilities Act; the Family and Medical Leave Act; the Employee Retirement Income Security Act; the Occupational Health and Safety Act; the Sarbanes-Oxley Act; the Massachusetts Law Against Discrimination (M.G.L. c. 151B, et seq., and/or any other laws of the Commonwealth of Massachusetts related to employment or the separation from employment;

b. Claims for age discrimination arising under the Age Discrimination in Employment Act of 1967 (as amended) ("ADEA") and the Older Workers Benefits Protection Act, except ADEA claims that may arise after the execution of this General Release;

c. Claims arising out of any other federal, state, local or municipal statute, law, constitution, ordinance or regulation; and/or

d. Any other employment related claim whatsoever, whether in contract, tort or any other legal theory, arising out of or relating to my employment with the Company and/or my separation of employment from the Releasees.

e. Excluded from this General Release are any claims that cannot be released or waived by law. This includes, but is not limited to, my right to file a charge with or participate in an investigation conducted by certain government agencies, such as the EEOC or NLRB. I acknowledge and agree, however, that I am releasing and waiving my right

to any monetary recovery should any government agency pursue any claims on my behalf that arose prior to the effective date of this General Release.

f. I waive all rights to re-employment with the Releasees. If I do apply for employment with the Releasees, the Releasees and I agree that the Releasees need not employ me, and that if the Releasees declines to employ me for any reason, it shall not be liable to me for any cause of action or damages whatsoever.

2. Release of Other Claims. I fully release, acquit, and forever discharge the Releasees from any and all other charges, actions, causes of action, claims, grievances, damages, obligations, suits, agreements, costs, expenses, attorneys' fees or any other liability of any kind whatsoever related to my employment, my employment agreement, my termination or the business of uniQure of which I have knowledge as of the time I sign this General Release.

3. I further acknowledge that I have received payment, salary and wages in full for all services rendered in conjunction with my employment with uniQure, Inc., including payment for all wages, bonuses, and accrued, unused paid time off, and that no other compensation is owed to me except as provided herein. I specifically understand that this general release of claims includes, without limitation, a release of claims for alleged wages due, overtime or other compensation or payment including any claim for treble damages, attorneys' fees and costs pursuant to the Massachusetts Wage Act and State Overtime Law M.G.L. c. 149, §§148, 150 *et seq.* and M.G.L. c. 151, §IA *et seq.* and I further acknowledge that I are unaware of any facts that would support a claim against the Released Parties for violation of the Fair Labor Standards Act or the Massachusetts Wage Act.

4. Notwithstanding anything to the contrary herein, nothing in this General Release shall be deemed to release any of the Releasees for: (i) any claim for the payment of compensation due under the Employment Agreement; (ii) any claim for any of the Accrued Benefits under the Employment Agreement; (iii) any claim for any separation benefit under Section 19 of the Employment Agreement including, without limitation, separation pay and accelerated vesting of stock options (as applicable and as defined in the Employment Agreement); or (iv) any rights to indemnification or coverage under a directors and officers liability insurance policy.

5. Restrictive Covenants. I acknowledge and agree that all of my obligations under the restrictive covenants in my Confidentiality, Developments, and Restrictive Covenants Agreement remain in full force and effect and shall survive the termination of my employment with the Releasees and the execution of this General Release.

6. Consultation with Attorney. I am advised and encouraged to consult with an attorney prior to executing this General Release. I acknowledge that if I have executed this General Release without consulting an attorney, I have done so knowingly and voluntarily.

7. Period for Review. I acknowledge that I have been given at least 21 days from the date I first received this General Release (or at least 45 days from the date I first received this General Release if my termination is part of a group reduction in force) during which to consider signing it.

8. Revocation of General Release. I acknowledge and agree that I have the right to revoke my acceptance of this General Release if I notify the Releasees in writing within 7 calendar days following the date I sign it. Any revocation, to be effective, must be in writing, signed by me, and either: a) postmarked within 7 calendar days of the date I signed it and addressed to the then current address of uniQure, Inc.'s headquarters (to the attention of the CEO); orb) hand delivered within 7 days of execution of this General Release to the uniQure, Inc.'s CEO. This General Release will become effective on the 8th day after I sign it (the "Effective Date"); provided that I have not timely revoked it.

I ACKNOWLEDGE AND AGREE THAT I HAVE BEEN ADVISED THAT THE GENERAL RELEASE IS A LEGAL DOCUMENT, AND I HAVE BEEN ADVISED TO CONSULT WITH AN ATTORNEY CONCERNING THIS GENERAL RELEASE. I ACKNOWLEDGE AND AGREE THAT I HAVE CAREFULLY READ AND FULLY UNDERSTAND ALL PROVISIONS OF THIS GENERAL RELEASE AND I AM VOLUNTARILY AND KNOWINGLY SIGNING IT.

IN, WITNESS WHEREOF, I have duly executed this Agreement under seal as of the _____ [day] of _____ [month],_____ [year]

Robert Gut

EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EMPLOYMENT AGREEMENT (this "Agreement") is made and entered into as of March 1, 2020 (the "Effective Date"), by and between uniQure, Inc., 113 Hartwell Avenue, Lexington, MA 02421 (together with any and all of its affiliates, the "Company") and Maria E. Cantor (the "Executive").

WITNESSETH:

WHEREAS, the Company wishes to continue to employ Executive as Senior Vice President Investor Relations & Communications.

WHEREAS, Executive wishes to continue to be employed by the Company and to serve in such capacity under the terms and conditions set forth in this Agreement.

WHEREAS, the Company and Executive are party to that certain Employment Agreement (the "Prior Employment Agreement") dated May 26, 2016.

WHEREAS, the Company and Executive desire to terminate the Prior Employment Agreement and contemporaneously replace the Prior Employment Agreement with this Agreement without any overlap, gap or discontinuity in the employment of the Executive.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and intending to be legally bound hereby, the Company and Executive agree as follows.

1. Employment. The Company hereby agrees to continue to employ Executive, and Executive hereby accepts such continued employment by the Company, as a full-time employee for the period and upon the terms and conditions contained in this Agreement. The Prior Employment Agreement is hereby terminated as of the Effective Date.

2. Term. Executive's term of employment with the Company under this Agreement shall begin on the Effective Date and shall continue in force and effect from year to year unless terminated earlier in accordance with Section 19 (the "Term").

3. Position and Duties. During the Term, Executive shall serve the Company as its Senior Vice President Investor Relations & Communications, reporting directly to the uniQure Chief Executive Officer (the "CEO"). Executive's duties will include but not be limited to:

- Managing the highly strategic functions of investor relations, public relations and internal employee communications.
- Leading the development, implementation and management of a comprehensive, strategic investor relations program.
- Serving as a liaison and channel of communication between the company and investors and other important stakeholders and influencers in the investment community as well as the media Developing and maintaining consistent internal communication channels (corporate presentations, www.uniqure.com, SharePoint intranet, etc.).

§ Any other duties as may from time to time be reasonably assigned to you by the Company.

Executive will perform other duties consistent with the job description previously provided and as may be customarily provided by a person in such position.

4. During the Term, Executive shall devote full business time, best efforts, skill, knowledge, attention and energies to the advancement of the Company's business and interests and to the performance of Executive's duties and responsibilities as an employee of the Company. Executive shall abide by the rules, regulations, instructions, personnel practices and policies of the Company and any changes therein that may be adopted from time to time by the Company.

5. During the Term, Executive shall not be engaged in any business activity which, in the judgment of the Company, conflicts with Executive's duties hereunder, whether or not such activity is pursued for pecuniary advantage. Should Executive wish to provide any services to any other person or entity other than the Company or to serve on the board of directors of any other entity or organization, Executive shall submit a written request to the Company for consideration and approval by the Company, which approval shall not unreasonably be withheld. If the Company later makes a reasonable, good faith determination that Executive's continued service on another entity's board would be detrimental to the Company, it will give Executive thirty (30) days' written notice that it is revoking the original approval, and Executive will resign from the applicable board within thirty (30) days after receipt of such notice. Notwithstanding the foregoing, Executive may engage in civic and charitable organizations and manage his personal and business affairs during normal business hours provided such activities do not, individually or collectively, interfere with the performance of his duties hereunder.

6. Location. Executive shall perform the services hereunder from the Company's USA headquarters at 113 Hartwell Avenue, Lexington MA, USA; provided, however, that Executive shall be required to travel from time to time for business purposes, including, without limitation, to the Company's facilities in Amsterdam, Netherlands.

7. Compensation and Benefits.

(a) *Base Salary.* For all services rendered by Executive under this Agreement, the Company will pay Executive a base salary at the annual rate of Three Hundred Thirty-Two Thousand Six Hundred Eight dollars ($332,608), which shall be reviewed annually by the CEO for adjustment (the base salary in effect at any time, the "Base Salary"). Executive's Base Salary shall be paid in bi-weekly installments, less withholdings as required by law and deductions authorized by Executive, and payable pursuant to the Company's regular payroll practices in effect at the time and as may be changed from time to time, subject to the terms of this agreement.

(b) *Discretionary Bonus.* Following the end of each calendar year and subject to the approval of the Company, Executive shall be eligible for a target

retention and performance bonus of Thirty-Five percent (35%) of the annual Base Salary based on performance and the Company's performance and financial condition during the applicable calendar year, as determined by the Company in its sole discretion (a "Bonus"). In any event, Executive must be an active employee of the Company as of the 1st of October of the relevant calendar year and on the date the Bonus is distributed in order to be eligible for and to earn any Bonus, as it also serves as an incentive to remain employed by the Company.

8. Equity. Executive will be eligible for future equity grants pursuant to the Company's policies and procedures. All such equity grants shall be subject to the express terms and conditions of this Employment Agreement.

9. Retirement and Welfare Benefits. Executive is eligible to participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided that Executive is eligible under (and subject to all provisions of) the plan documents that govern those programs. These include medical, dental and disability insurances. Benefits are subject to change at any time in the Company's sole discretion.

10. Paid Time Off and Holidays. Executive is eligible for 4 weeks of paid vacation per calendar year (prorated for any partial year during the term) to be taken at such times as may be approved in advance by the Company. Executive is also entitled to all paid holidays observed by the Company in the United States. Executive shall have all rights and be subject to all obligations and responsibilities with respect to paid time off and holidays as are set forth in the Company's employee manual or other applicable policies and procedures, which may provide for benefits greater than but not less than those provided in this Agreement.

11. Expense Reimbursement. During the Term, Executive shall be reimbursed by the Company for all necessary and reasonable expenses incurred by Executive in connection with the performance of Executive's duties hereunder (including business trips to the uniQure Amsterdam headquarters). Executive shall keep an itemized account of such expenses, together with vouchers and/or receipts verifying the same and submit for reimbursement on a monthly basis. Any such expense reimbursement will be made in accordance with the Company's travel and expense policies governing reimbursement of expenses as are in effect from time to time.

12. Withholding. All amounts set forth in this Agreement are on a gross, pre-tax basis and shall be subject to all applicable federal, state, local and foreign withholding, payroll and other taxes, and the Company may withhold from any amounts payable to Executive (including any amounts payable pursuant to this Agreement) in order to comply with such withholding obligations.

13. IP and Restrictive Covenants. The Company's agreement to enter into this Agreement is contingent upon Executive's execution of the Company's Confidentiality, Developments, and Restrictive Covenants Agreement, attached as Exhibit A to this Agreement. Nothing in this Agreement or the Confidentiality, Developments, and Restrictive Covenants Agreement shall prohibit or restrict Executive from initiating communications directly with,

responding to any inquiry from, providing testimony before, providing confidential information to, reporting possible violations of law or regulation to, or filing a claim or assisting with an investigation directly with a self-regulatory authority or a government agency or entity, including the Equal Employment Opportunity Commission, the Department of Labor, the National Labor Relations Board, the Department of Justice, the Securities and Exchange Commission, Congress, any agency Inspector General or any other federal, state or local regulatory authority (collectively, the "Regulators"), or from making other disclosures that are protected under the whistleblower provisions of state or federal law or regulation. Executive does not need the prior authorization of the Company to engage in conduct protected by this subsection, and Executive does not need to notify the Company that Executive has engaged in such conduct. Please take notice that federal law provides criminal and civil immunity to federal and state claims for trade secret misappropriation to individuals who disclose trade secrets to their attorneys, courts, or government officials in certain, confidential circumstances that are set forth at 18 U.S.C. §§ 1833(b)(1) and 1833(b)(2), related to the reporting or investigation of a suspected violation of the law, or in connection with a lawsuit for retaliation for reporting a suspected violation of the law.

14. At-Will Employment. This Agreement shall not be construed as an agreement, either express or implied, to employ Executive for any stated term, and shall in no way alter the Company's policy of employment at-will, under which both the Company and Executive remain free to end the employment relationship for any reason, at any time, with or without Cause or notice. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay Executive any compensation or grant Executive any benefit beyond the end of employment with the Company.

15. Conflicting Agreements. Executive acknowledges and represents that by executing this Agreement and performing Executive's obligations under it, Executive will not breach or be in conflict with any other agreement to which Executive is a party or is bound, and that Executive is not subject to any covenants against competition or similar covenants that would affect the performance of Executive's obligations for the Company.

16. No Prior Representations. This Agreement and its exhibits constitute all the terms of Executive's hire and supersedes all prior representations or understandings, whether written or oral, relating to the terms and conditions of Executive's employment.

17. Change of Control. In the event of a Change of Control as defined below, the vesting conditions that may apply to any options, restricted shares, restricted stock units, performance stock units or other grants of equity held by Executive pursuant to this Agreement and the Company's Amended and Restated 2014 Share Incentive Plan will be automatically waived, and all the Stock Options will be deemed to be fully exercisable commencing on the date of the Change of Control and ending on the eighteen (18) month anniversary of the Change of Control or, if earlier, the expiration of the term of such Stock Options. For purposes of this Agreement, "Change of Control" shall mean the date on which any of the following events occurs:

(a) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the

Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing forty (40) percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Board ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company); or

(b) a majority of the members of the Board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board before the date of the appointment or election; or

(c) the consummation of (i) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty (50) percent of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), or (ii) any sale or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company.

18. RESERVED.

19. Termination. The Term shall continue until the termination of Executive's employment with the Company as provided below.

(a) *Events of Termination.* Executive's employment, Base Salary and any and all other rights of Executive under this Agreement or otherwise as an employee of the Company will terminate:

(i) upon the death of Executive;

(ii) upon the Disability of Executive (immediately upon notice from either party to the other). For purposes hereof, the term "Disability" shall mean an incapacity by accident, illness or other circumstances which renders Executive mentally or physically incapable of performing the duties and services required of Executive hereunder on a full-time basis for a period of at least 120 consecutive days.

(iii) upon termination of Executive for Cause;

(iv) upon the resignation of employment by Executive without Good Reason (upon sixty (60) days' prior written notice);

(v) upon termination by the Company for any reason other than those set forth in Sections 19(a)(i) through 19(a)(iv) above;

(vi) upon voluntary resignation of employment by Executive for Good Reason as described in Section 19(f), below;

(vii) upon a Change of Control Termination as described in Section 19(g), below.

(b) In the event Executive's termination occurs pursuant to Sections 19(a)(i) - (iv) above, Executive will be entitled only to the Accrued Benefits through the termination date. The Company will have no further obligation to pay any compensation of any kind (including, without limitation, any Bonus or portion of a Bonus that otherwise may have become due and payable to Executive with respect to the year in which such termination date occurs), or severance payment of any kind, unless otherwise provided herein. For purposes of this Agreement, Accrued Benefits shall mean (i) payment of Base Salary through the termination date, (ii) payment of any Bonus for performance periods completed prior to the termination date, (iii) any payments or benefits under the Company's benefit plans that are vested, earned or accrued prior to the termination date (including, without limitation, earned but unused vacation); and (iv) payment of unreimbursed business expenses incurred by Executive.

(c) For purposes of this Agreement, "Cause" shall mean the good faith determination by the Company after written notice from the Company to Executive that one or more of the following events has occurred and stating with reasonable specificity the actions that constitute Cause and the specific reasonable cure (related to subsections (i) and (viii) below):

(i) Executive has willfully or repeatedly failed to perform Executive's material duties and such failure has not been cured after a period of thirty (30) days' written notice;

(ii) any reckless or grossly negligent act by Executive having the foreseeable effect of injuring the interest, business or reputation of the Company, or any of its parents, subsidiaries or affiliates in any material respect;

(iii) Executive's evidenced use of any illegal drug, or illegal narcotic, or excessive amounts of alcohol (as determined by the Company in

its reasonable discretion) on Company property or at a function where Executive is working on behalf of the Company;

(iv) the indictment on charges or conviction for (or the procedural equivalent of conviction for), or entering of a guilty plea or plea of no contest with respect to a felony;

(v) the conviction for (or the procedural equivalent of conviction for), or entering of a guilty plea or plea of no contest with respect to a misdemeanor which, in the Company's reasonable judgment, involves moral turpitude deceit, dishonesty or fraud; except that, in the event that Executive is indicted on charges for a misdemeanor set forth in this subsection 19(c)(v), the Company may elect, in its sole discretion, to place Executive on administrative garden leave with or without continuation of full compensation and benefits under this Agreement during the pendency of the proceedings;

(vi) conduct by or at the direction of Executive constituting misappropriation or embezzlement of the property of the Company, or any of its parents or affiliates (other than the occasional, customary and *de minimis* use of Company property for personal purposes);

(vii) a breach by Executive of a fiduciary duty owing to the Company, including the misappropriation of (or attempted misappropriation of) a corporate opportunity or undisclosed self-dealing;

(viii) a material breach by Executive of any material provision of this Agreement, any of the Company's written employment policies or Executive's fiduciary duties to the Company, which breach, if curable, remains uncured for a period of thirty (30) days after receipt by Executive of written notice of such breach from the Company, which notice shall contain a reasonably specific description of such breach and the specific reasonable cure requested by the Supervisory Board; and

(ix) any breach of Executive's Confidentiality, Developments, and Restrictive Covenants Agreement.

(d) The definition of Cause set forth in this Agreement shall govern for purposes of Executive's equity compensation and any other compensation containing such a concept.

(e) *Notice Period for Termination Under Section 19(a)(iv).* Upon a termination of Executive under Section 19(a)(iv), during the notice period the Company may, in its sole discretion, relieve Executive of all of

Executive's duties, responsibilities, and authority, may restrict Executive's access to Company property, and may take other appropriate measures deemed necessary under the circumstances.

(f) *Termination by Executive for Good Reason.* During the Term, Executive may terminate this Agreement at any time upon thirty (30) days' written notice to the Company for Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the Good Reason Process (hereinafter defined) following the occurrence of any of the following actions undertaken by the Company without Executive's express prior written consent: (i) the material diminution in Executive's responsibilities, authority and function; (ii) a material reduction in Executive's Base Salary, provided, however, that Good Reason shall not be deemed to have occurred in the event of a reduction in Executive's Base Salary which is pursuant to a salary reduction program affecting the CEO and all or substantially all other senior management employees of the Company and that does not adversely affect Executive to a greater extent than other similarly situated employees; provided, however that such reduction may not exceed twenty (20%) percent; (iii) a material change in the geographic location at which Executive provides services to the Company (i.e., outside a radius of fifty (50) miles from Lexington, Massachusetts); or (iv) a material breach by the Company of this Agreement or any other material agreement between Executive and the Company concerning the terms and conditions of Executive's employment, benefits or Executive's compensation (each a "Good Reason Condition").

"Good Reason Process" shall mean that: (i) Executive has reasonably determined in good faith that a Good Reason Condition has occurred; (ii) Executive has notified the Company in writing of the first occurrence of the Good Reason Condition within 60 days of the first occurrence of such condition; (iii) Executive has cooperated in good faith with the Company's efforts, for a period not less than thirty (30) days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason Condition continues to exist; and (v) Executive terminates employment within sixty (60) days after the end of the Cure Period. If the Company cures to Executive's satisfaction (not unreasonably withheld) the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(g) *Termination As A Result of a Change Of Control.* For purposes of this Agreement, "Change of Control Termination" shall mean any of the following:

(i) Any termination by the Company of Executive's employment, other than for Cause (as defined in Section 19(c), above), that

occurs within the period beginning ninety (90) days before and continuing until twelve (12) months after the Change of Control; or

(ii) Any resignation by Executive for Good Reason (as defined in Section 19(f), above), that occurs within twelve (12) months after the Change of Control.

(iii) For purposes of this Section 19(g), "Change of Control" shall have the same meaning as defined above in Section 17.

(h) *Separation Benefits.* Should Executive experience a termination of employment during the Term pursuant to Section 19(a)(v), (vi) or (vii) above, in addition to the Accrued Benefits Executive shall also be entitled to:

(i) *Lump Sum Severance Payment*:

a. In the case of a termination of employment during the Term pursuant to Section 19(a)(v) or (vi) above: a lump sum severance payment equal to 100% of the sum of (A) Executive's annual Base Salary and (B) Executive's target Bonus amount pursuant to Section 7(b) hereof (*i.e.*, Thirty-Five percent (35%) of Executive's annual Base Salary);

(ii) In the case of a termination of employment during the Term pursuant to Section 19(a)(vii) above: a lump sum severance payment equal to 150% of the sum of (A) Executive's annual Base Salary and (B) Executive's target Bonus amount pursuant to Section 7(b) hereof (*i.e.*, Thirty-Five percent (35%) of Executive's annual Base Salary);

(iii) a Pro-rata Bonus paid at the target bonus amount for the year of termination, as set forth in and subject to Section 7(b); as used in this Agreement, the term "Pro-rata Bonus" shall mean the product of the formula B x D/365 where B represents the target Bonus (*i.e.*, Thirty-Five percent (35%) of Executive's annual Base Salary), and D represents the number of days elapsed in the calendar year through the date of the separation of Executive's employment from the Company.

(iv) Provided that Executive and Executive's eligible dependents, if any, are participating in the Company's group health, dental and vision plans on the termination date and elect on a timely basis to continue that participation in some or all of the offered plans through the federal law commonly known as "COBRA," the Company will pay or reimburse Executive for Executive's full

COBRA premiums (i.e., employer and employee portion) until the earlier to occur of: (a) the expiration of the COBRA Payment Term (as defined below), (b) the date Executive becomes eligible to enroll in the health, dental and/or vision plans of another employer, (c) the date Executive (and/or Executive's eligible dependents, as applicable) is no longer eligible for COBRA coverage, or (d) the Company in good faith determines that payments under this paragraph would result in a discriminatory health plan pursuant to the Patient Protection and Affordable Care Act of 2010, as amended, and any guidance or regulations promulgated thereunder (collectively, "PPACA"). Executive agrees to notify the Company promptly if Executive becomes eligible to enroll in the plans of another employer or if Executive or any of Executive's dependents cease to be eligible to continue participation in the Company's plans through COBRA. "COBRA Payment Term" mean (x) in the case of a termination of employment during the Term pursuant to Section 19(a)(v) or (vi) above, the twelve (12) month anniversary of Executive's termination date, and (y) in the case of a termination of employment during the Term pursuant to Section 19(a)(vii) above, the eighteen (18) month anniversary of Executive's termination date.

To avoid duplication of severance payments, any amount paid under this subsection shall be offset against any severance amounts that may be owed by the Company to Executive pursuant to any of Company's Change of Control guidelines as may be adopted or amended.

20. General Release of Claims. Notwithstanding any provision of this agreement, all severance payments and benefits described in Section 19 of this Agreement (except for payment of the Accrued Benefits) are conditioned upon the execution, delivery to the Company, and expiration of any applicable revocation period without a notice of revocation having been given by Executive, all by the 30th day following the termination date of a General Release of Claims by and between Executive (or Executive's estate) and the Company in the form attached as Exhibit B to this Agreement. (In the event of Executive's death or incapacity due to Disability, the release will be revised for signature accordingly.) Provided any applicable timing requirements set forth above have been met, the payments and benefits will be paid or provided to Executive as soon as administratively practicable (but not later than forty-five (45) days) following the date Executive signs and delivers the General Release to the Company and any applicable revocation period has expired without a notice of revocation having been given. Any severance or termination pay will be the sole and exclusive remedy, compensation or benefit due to Executive or Executive's estate upon any termination of Executive's employment (without limiting Executive's tights under any disability, life insurance, or deferred compensation arrangement in which Executive participates or at the time of such termination of employment or any Option Agreements or any other equity agreements to which Executive is a party). If such

45-day period spans two calendar years, payment will be paid after such 45-day period and revocation period have expired.

21. Certain Company Remedies. Executive acknowledges that Executive's promised services and covenants are of a special and unique character, which give them peculiar value, the loss of which cannot be reasonably or adequately compensated for in an action at law, and that, in the event there is a breach hereof by Executive, the Company will suffer irreparable harm, the amount of which will be impossible to ascertain. Accordingly, the Company shall be entitled, if it so elects, to institute and prosecute proceedings in any court of competent jurisdiction, either at law or in equity, to obtain damages for any breach of this Agreement, or to enjoin Executive from committing any act in breach of this Agreement. The remedies granted to the Company in this Agreement are cumulative and are in addition to remedies otherwise available to the Company at law or in equity.

22. Indemnification.

(a) The Company agrees that Executive shall be entitled to indemnification to the fullest extent permitted by Delaware law and under the Company's articles of incorporation, bylaws and any other corporate-related plan, program or policy. In addition, for a period of at least three (3) years after Executive's termination of employment, the Company shall maintain a directors and officers liability insurance policy under which Executive shall be included as a "Covered Person."

(b) In addition, and for the sake of clarity, the Company hereby specifically agrees that (i) if Executive is made a party, or is threatened to be made a party, to any "Proceeding" (defined as any threatened or actual action, suit or proceeding whether civil, criminal, administrative, investigative, appellate or other) by reason of the fact that (1) Executive is or was an employee, officer, director, agent, consultant or representative of the Company, or (2) is or was serving at the request of the Company as employee, officer, director, agent, consultant or representative of another person, or (ii) if any "Claim" (defined as any claim, demand, request, investigation, dispute, controversy, threat, discovery request or request for testimony or information) is made, or threatened to be made, that arises out of or relates to Executive's service in any of the foregoing capacity or to the Company, then Executive shall be indemnified and held harmless by the Company to the fullest extent permitted by applicable law, against any and all costs, expenses, liabilities and losses (including, without limitation, attorney's fees, judgments, interest, expenses of investigation, penalties, fines, taxes or penalties and amounts paid or to be paid in settlement) incurred or suffered by Executive in connection therewith, except with respect to any costs, expenses, liabilities or losses (A) that were incurred of suffered as a result of Executive's willful misconduct, gross negligence or knowing violation of any written agreement between Executive and the Company, (B) that a court of competent jurisdiction determines to have resulted from Executive's knowing and fraudulent acts; provided, however, that the Company shall provide such

indemnification only if (I) notice of any such Proceeding is given promptly to the Company, by Executive; (II) the Company is permitted to participate in and assume the defense of any such Proceeding; (III) such cost, expense, liability or loss results from the final judgment of a court of competent jurisdiction or as a result of a settlement entered into with the prior written consent of the Company; and (IV) in the case of any such Proceeding (or part thereof) initiated by Executive, such Proceeding (or part thereof) was authorized in advance in writing by the Company. Such indemnification shall continue even if Executive has ceased to be an employee, officer, director, agent, consultant or representative of the Company until all applicable statute of limitations have expired, and shall inure to the benefit of Executive's heirs, executors and administrators. The Company shall pay directly or advance to Executive all costs and expenses incurred by Executive in connection with any such Proceeding or Claim (except for Proceedings brought by the Company against Executive for claims other than shareholder derivative actions) within 30 days after receiving written notice requesting such an advance. Such notice shall include, to the extent required by applicable law, an undertaking by Executive to repay the amount advanced if Executive was ultimately determined not to be entitled to indemnification against such costs and expenses

23. Miscellaneous.

(a) *Right to Offset.* The Company may offset any undisputed amounts Executive owes the Company at the time of Executive's termination of employment (including any payment of Accrued Benefits or separation pay), except for secured or unsecured loans, against any amounts the Company owes Executive hereunder, subject in all cases to the requirements of Section 409A of the Code.

(b) *Cooperation.* Executive agrees that, during and after Executive's employment with the Company, subject to reimbursement of Executive's reasonable expenses, Executive will cooperate fully with the Company and its counsel with respect to any matter (including, without limitation, litigation, investigations, or governmental proceedings) in which Executive was in any way involved during Executive's employment with the Company. Executive shall render such cooperation in a timely manner on reasonable notice from the Company, and at such times and places as reasonably acceptable to Executive and the Company. The Company, following Executive's termination of employment, exercises commercially reasonable efforts to schedule and limit its need for Executive's cooperation under this paragraph so as not to interfere with Executive's other personal and professional commitments.

(c) *Company Documents and Property.* Upon termination of Executive's employment with the Company, or at any other time upon the request of Company, Executive shall forthwith deliver to Company any and all documents, notes, notebooks, letters, manuals, prints, drawings, block

diagrams, photocopies of documents, devices, equipment, keys, security passes, credit cards, hardware, data, databases, source code, object code, and data or computer programming code stored on an optical or electronic medium, and any copies thereof, in the possession of or under the control of Executive that embodies any confidential information of the Company. Executive agrees to refrain from purging or deleting data from any Company-owned equipment, including email systems, in connection with Executive's termination. To the extent that Executive possesses any data belonging to Company on any storage media owned by Executive (for example, a home computer's hard disk drive, portable data storage device, etc.), Executive agrees that Executive will work cooperatively with the Company to return such data and ensure it is removed from Executive's devices in a manner that does not adversely impact any personal data. Executive agrees not to take any steps to delete any Company data from any device without first obtaining Company's written approval. Executive agrees to cooperate with Company if Company requests written or other positive confirmation of the return or destruction of such data from any personal storage media. Nothing herein shall be deemed to prohibit Executive from retaining (and making copies of): Executive's personal non-business-related correspondence files; or (ii) documents relating to Executive's personal compensation, benefits, and obligations, and documents reasonably necessary to prepare personal income tax returns.

(d) *Waivers.* No waiver of any provision will be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement does not prevent subsequent enforcement of that term or obligation. The waiver by any party of any breach of this Agreement does not waive any subsequent breach.

(e) *Section 409A.* This Agreement is intended to comply with Section 409A of the Code, and its corresponding regulations, or an exemption thereto, and payments may only be made under this Agreement upon an event and in a manner permitted by Section 409A of the Code, to the extent applicable. Severance benefits under this Agreement are intended to be exempt from Section 409A of the Code under the "short-term deferral" exception, to the maximum extent applicable, and then under the "separation pay" exception, to the maximum extent applicable. Notwithstanding anything in this Agreement to the contrary, if required by Section 409A of the Code, if Executive is considered a "specified employee" for purposes of Section 409A of the Code and if payment of any amounts under this Agreement is required to be delayed for a period of six months after separation from service pursuant to Section 409A of the Code, payment of such amounts shall be delayed as required by Section 409A of the Code, and the accumulated amounts shall be paid in a lump-sum payment within 10 days after the end of the six-month period. If Executive dies during the

postponement period prior to the payment of benefits, the amounts withheld on account of Section 409A of the Code shall be paid to the personal representative of Executive's estate within 60 days after the date of Executive's death. All payments to be made upon a termination of employment under this Agreement may only be made upon a "separation from service" under Section 409A of the Code. For purposes of Section 409A of the Code, each payment hereunder shall be treated as a separate payment, and the right to a series of installment payments under this Agreement shall be treated as a right to a series of separate payments. In no event may Executive, directly or indirectly, designate the fiscal year of a payment. Notwithstanding any provision of this Agreement to the contrary, in no event shall the timing of Executive's execution of the General Release, directly or indirectly, result in Executive's designating the fiscal year of payment of any amounts of deferred compensation subject to Section 409A of the Code, and if a payment that is subject to execution of the General Release could be made in more than one taxable year, payment shall be made in the later taxable year. All reimbursements and in-kind benefits provided under this Agreement shall be made or provided in accordance with the requirements of Section 409A of the Code, including, where applicable, the requirement that (i) any reimbursement be for expenses incurred during the period specified in this Agreement, (ii) the amount of expenses eligible for reimbursement, or in-kind benefits provided, during a fiscal year not affect the expenses eligible for reimbursement, or in-kind benefits to be provided, in any other fiscal year, (iii) the reimbursement of an eligible expense be made no later than the last day of the fiscal year following the year in which the expense is incurred, and (iv) the right to reimbursement or in-kind benefits not be subject to liquidation or exchange for another benefit.

(f) *Governing Law; Consent to Exclusive Jurisdiction and Venue.* This Agreement and all questions relating to its validity, interpretation, performance and enforcement (including, without limitation, provisions concerning limitations of actions), shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts (notwithstanding any conflict-of-laws doctrines of such state or other jurisdiction to the contrary), and without the aid of any canon, custom or rule of law requiring construction against the draftsman. The parties hereby consent and submit to the exclusive jurisdiction of the federal and state courts in the Commonwealth of Massachusetts, and to exclusive venue in any Massachusetts federal court and/or Massachusetts state court located in Suffolk County, for any dispute arising from this Agreement.

(g) *Notices.* Any notices, requests, demands, and other communications described in this Agreement are sufficient if in writing and delivered in person or sent postage prepaid, by certified or registered U.S. mail or by

FedEx/UPS **to** Executive at Executive's last known home address and a copy by e-mail to Executive, or in the case of the Company, to the attention of the CFO or SVP HR, copy to the CEO at the main office of uniQure, N.V. Any notice sent by U.S. mail shall be deemed given for all purposes 72 hours from its deposit in the U.S. mail, or the next day if sent by overnight delivery.

(h) *Successors and Assigns.* Executive may not assign this Agreement, by operation of law or otherwise, without the Company's prior written consent. Without the Company's consent, any attempted transfer or assignment will be void and of no effect. The Company may assign its rights under this Agreement if the Company consolidates with or merges into any other entity, or transfers substantially all of its properties or assets to any other entity, provided that such entity expressly agrees to be bound by the provisions hereof. This Agreement will inure to the benefit of and be binding upon the Company and Executive, their respective successors, executors, administrators, heirs, and permitted assigns.

(i) *Counterparts; Facsimile.* This Agreement may be executed in two or more counterparts, each of which shall be an original and all of which together shall constitute one and the same instrument. This Agreement may be executed by facsimile transmission, PDF, electronic signature or other similar electronic means with the same force and effect as if such signature page were an original thereof.

(j) *Severability.* The provisions of this Agreement are independent of and separable from each other, and no provision shall be affected or rendered invalid or unenforceable by virtue of the fact that for any reason any other provision or provisions may be invalid or unenforceable in whole or in part.

(k) *Enforceability.* If any portion or provision of the Agreement is declared illegal or unenforceable by a court of competent jurisdiction, the remainder of the Agreement will not be affected, and each remaining portion and provision of this Agreement will be valid and enforceable to the fullest extent permitted by law.

(l) *Survival.* Sections 13, 20, 21, and the Company's Confidentiality, Developments, and Restrictive Covenants Agreement (Exhibit A) and all other provisions necessary to give effect thereto, shall survive the termination of Executive's employment for any reason.

(m) *Recoupment and Other Policies.* All payments under this Agreement shall be subject to any applicable clawback and recoupment policies and other policies that may be implemented by the Board from time to time, including, without limitation, the Company's right to recover amounts in

the event of a financial restatement due in whole or in part to fraud or misconduct by one or more of the Company's executives or in the event Executive violates any applicable restrictive covenants in favor of the Company to which Executive is subject.

(n) *Entire Agreement; Amendment.* This Agreement contains the entire understanding among the parties hereto with respect to the subject matter hereof, and supersedes all prior and contemporaneous agreements and understandings, inducements or conditions, express or implied, oral or written, between the parties hereto (including without limitation any prior employment agreements between the parties hereto); provided, however, that any agreements referenced in this Agreement or executed herewith are not superseded. The express terms hereof control and supersede any course of performance and/or usage of the trade inconsistent with any of the terms hereof. This Agreement may be amended or modified only by a written instrument signed by Executive and by a duly authorized representative of the Company.

(o) *Section Headings.* The section headings in this Agreement are for convenience only, form no part of this Agreement and shall not affect its interpretation.

[This space intentionally left blank.]

IN WITNESS WHEREOF, the parties have executed and delivered this Agreement as of the date first above written.

uniQure, Inc.

By: /s/ Matthew Kapusta
Name: Matthew Kapusta
Title: Chief Executive Officer

EXECUTIVE

/s/ Maria Cantor
Maria Cantor

EXHIBIT A
UNIQURE, INC.
CONFIDENTIALITY, INVENTIONS, AND
RESTRICTIVE COVENANTS AGREEMENT

This Confidentiality, Inventions, and Restrictive Covenants Agreement (the "Agreement") is made between uniQure, Inc. ("uniQure"), and Maria Cantor (the "Employee") (collectively, the "Parties") in conjunction with an Employment Agreement providing additional severance and other benefits dated March 1, 2020.

In exchange for uniQure's agreement to employ Employee in a capacity of high trust and confidence and/or in which Employee will develop or receive highly sensitive Confidential Information and in which Employee may develop customer or supplier Goodwill, and for other good and valuable consideration, including the compensation and benefits referred to herein and/or provided for in Employee's offer letter or employment agreement, the receipt and sufficiency of which are hereby acknowledged, Employee hereby agrees as follows:

1. **Employment At Will.** Employee agrees that Employee remains an "at will" employee of uniQure and that Employee may terminate Employee's employment at any time. Employee further agrees that uniQure may similarly terminate Employee's employment at any time as per the Employment Agreement between the Parties. This agreement does not create a contract for employment for any specified duration, either expressly or by implication.

2. **Subsequent Material Changes in Employment.** Even though the nature of Employee's relationship with uniQure is as an "at will" employee, the Parties have entered into this Agreement with the understanding that it is possible that Employee's position, title, duties and responsibilities could increase, decrease, develop, evolve, or otherwise change in a material way in the future and, in light of that understanding, the Parties nevertheless intend that this Agreement shall follow Employee throughout the entire course of Employee's or her employment with uniQure and that any such subsequent material change shall not affect either the enforceability or the validity of this Agreement.

3. **Non-disclosure of Confidential Information**. Employee acknowledges that, for Employee to perform Employee's duties properly, Employee will have access to and uniQure must necessarily entrust Employee with certain proprietary and confidential business information (the "Confidential Information"). Employee agrees that, during the term of Employee's employment with uniQure and at all times thereafter, regardless of the reason for termination of employment, Employee will not disclose any Confidential Information or use it in any way, except with prior written authorization and on behalf of uniQure, whether or not such Confidential Information is produced by Employee's own efforts.

a. For purposes of this Agreement, "Confidential Information" means all original and copies of all material, data, documents, and information in any format (including without limitation all hardcopy, softcopy, electronic, web, and computer-based information, documents, data files, records, videos, pictures,

and recordings) which constitutes confidential and/or trade secret information as further defined in this Agreement and/or Massachusetts law. Examples of Confidential Information include, but are not limited to:

- § All such information and knowledge about uniQure and the products, services, standards, specifications, procedures, business methods and techniques which are not in the public domain or generally known in the industry;
- § business development plans and activities, including the identity and characteristics of uniQure's current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § information concerning pending and prospective mergers, acquisitions, or other types of transactions;
- § the prices, terms and conditions of uniQure's contracts or agreements with its current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § the identities, needs and requirements of uniQure's current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § cost and pricing policies and data, including the costs of uniQure's business and all results of its business operations;
- § financial information, including but not limited to results from operations, results relating to various brands, profit/loss and revenue figures, transaction data, account information;
- § facility and data security-related information, including door access codes, computer access codes, security system PINs, computer system user identification information, passwords and remote access codes;
- § personnel information; and
- § intellectual property, including any patents, trademarks or servicemarks, of uniQure.

b. Employee further acknowledges that the development or acquisition of such Confidential Information is the result of great effort and expense by uniQure, that the Confidential Information is critical to the survival and success of uniQure, and that the unauthorized disclosure or use of the Confidential Information would cause uniQure irreparable harm.

4. **Inventions and Developments:**

a. **Disclosure:** Employee shall promptly and fully disclose to uniQure any and all writings, inventions, products, ideas, discoveries, developments, methods, techniques, technical data, processes, formulas, improvements, know-how, biological or chemical materials, compositions and scientific or business innovations (whether or not reduced to practice and whether or not protectable under state, federal or foreign patent, copyright, trade secret or similar laws) (collectively the "Inventions") that Employee makes, conceives, devises, invents, creates, develops or writes, either solely or jointly with others, either within or without uniQure, during the period of Employee's employment with uniQure.

b. **Further Assurances:** Upon and/or following disclosure of each Invention to uniQure, Employee will, during Employee's employment and at any time thereafter, at the request and cost of uniQure, sign, execute, make and do all such deeds, instruments, documents, acts and things as uniQure and its duly authorized agents may reasonably require to apply for, obtain and vest in the name of uniQure alone (unless uniQure otherwise directs) letters patent, copyrights or other analogous protection in any country throughout the world, including all right, title and interest in the Inventions, and when so obtained or vested to renew and restore the same; and to defend any opposition proceedings in respect of such applications and any opposition proceedings or petitions or applications for revocation of such letters patent, copyright or other analogous protection.

c. **Works Made For Hire:** Employee acknowledges that all written or computer coded materials manifested in documents, systems design, disks, tapes, drawings, reports, specifications, data, memoranda or otherwise prepared in whole or in part by Employee, jointly or singly, in the course of Employee's employment, whether on uniQure's time or on Employee's own time, including without limitation all Inventions, shall be "works made for hire" under the Copyright Act of 1976 (the "Copyright Act"), and shall be the sole property of uniQure and uniQure shall be the sole author of such works within the meaning of the Copyright Act. All such works (the "Work Product"), as well as all copies of such works in whatever medium, shall be owned exclusively by uniQure and Employee hereby expressly disclaims any and all interests in such works. If the copyright to any such work shall not be the property of uniQure by operation of law, Employee hereby and without further consideration, irrevocably assigns to uniQure all right, title and interest in such work, including all so-called "moral rights," and will assist uniQure and its nominees in every proper way, at uniQure's expense, to secure, maintain and defend for uniQure's own benefit copyrights and any extensions and renewals thereof on such work, including translations thereof in any and all countries, such work to be and to remain the property of uniQure whether copyrighted or not. If the foregoing moral rights cannot be so assigned under the applicable laws of the countries in which such rights exist, Employee hereby waives such moral rights and consents to any action of uniQure that would violate such rights in the absence of such consent. Employee warrants that no Work Product shall contain any material owned by any third party, except as disclosed to uniQure pursuant to subsection (b), and that as to any such material, Employee shall have all rights necessary to provide to uniQure the full, unrestricted benefits to such material as incorporated into the Work Product.

d. **Assignment:** Without in any way limiting the foregoing, Employee hereby assigns to uniQure all right, title and interest to all Inventions, including but not limited to patent rights and copyrights.

e. **Power of Attorney:** In the event uniQure is unable, after reasonable effort, to secure Employee's signature on any letters patent, copyright or other analogous protection relating to an Invention, whether because of Employee's physical or mental incapacity or for any other reason whatsoever, Employee hereby irrevocably designates and appoints uniQure and its duly authorized officers and agents as Employee's agent and attorney-in-fact, to act for and in Employee's behalf and stead to execute and file any such application

or applications and to do all other lawfully permitted acts to further the prosecution thereon with the same legal force and effect as if executed by Employee.

f. **Employee Developments:** Employee represents that all developments, inventions, works of authorship or other intellectual property rights to which Employee claims ownership as of the date of this Agreement (the "Employee Developments"), and which the parties agree are excluded from this Agreement, are listed in Exhibit A attached hereto. If no such Employee Developments are listed on Exhibit A, Employee represents that there are no such Employee Developments at the time of signing this Agreement.

g. After the date hereof, Employee will promptly disclose to uniQure and uniQure agrees to receive all disclosures in confidence, any improvements, discoveries, software, designs or writing of Employee that exist, regardless of the state of completion, to determine if they shall be deemed Inventions.

5. **Restrictive Covenants:**

a. For the purposes of this Section:

"Competing Products and Services" means any product, process, therapy or service of any person or organization other than uniQure that is in development or has been commercialized and that involves a gene therapy or the manufacture of a gene therapy: (i) for the treatment of any disease for which uniQure has a product or therapy on the market or in any phase of development during the term of Employee's employment with uniQure, including, without limitation, any such products in the field of cardiovascular, central nervous system, liver or metabolic disease, or (ii) using an adeno-associated virus serotype (AAV); or (iii) that otherwise is directly competitive (or, for any products, processes, therapies or services in the development stage, would be directly competitive, if marketed or sold) with any uniQure product or therapy on the market or in any phase of development during the term of Employee's employment with uniQure.

"Competing Organization" means any legal entity, including, without limitation, any company, corporation, partnership, sole proprietorship, bureau, ministry or agency, that develops, makes, uses, sells, imports, distributes, sells Competing Products and Services or otherwise consults or assists with such activities.

"Prohibited Activities" means any specific types of services performed by the Employee for uniQure or its affiliates at any time during the two (2) years preceding the termination of employment.

b. **Non-Solicitation and Non-Acceptance:** Employee agrees that during Employee's employment and for a period of eighteen (18) months after the termination of employment for any reason, Employee shall not directly or indirectly:

i. recruit, solicit, or hire any employee, consultant, independent contractor who performed services for uniQure, or induce or attempt to induce any such

employee, consultant, or independent contractor, to reduce or discontinue Employee's employment, contractual, or other affiliation with uniQure;

ii. contact or accept business from any individual or entity that was an actual or prospective customer or business relationship of uniQure and that Employee serviced, had contact with, or learned Confidential Information about during employment at uniQure, for the purpose of soliciting the sale of or selling Competing Products and Services to such individual or entity and/or to divert any portion of that individual's or entity's business away from uniQure.

c. **Non-competition:** Employee agrees that during Employee's employment and for a period of twelve (12) months after the termination of employment (the "Non-Competition Period"), except in the case where Employee is terminated by uniQure without cause, Employee shall not directly or indirectly, perform Prohibited Activities (whether as an employee, consultant, independent contractor, member of a board of directors, or in any other capacity) to a Competing Organization within the Geographic Area assigned to Employee in Employee's position(s) with uniQure, or where Employee provided services or had a material presence or influence, during any time within the last two (2) years of employment with uniQure. Notwithstanding the foregoing, nothing herein shall prevent Employee from becoming employed by or otherwise rendering services to a Competing Organization whose business is diversified, if the scope of Employee's services to such Competing Organization is limited to identifiable parts, segments, entities or business units of such business that, are not engaged in providing or producing Competing Services. Employee agrees that if Employee seeks to become employed or otherwise renders services to such a Competing Organization during the restricted period, prior to Employee's employment or rendering such services, (i) Employee shall provide uniQure with written assurance from such Competing Organization and from Employee that Employee will not render services directly or indirectly in connection with any Competing Services, and (ii) Employee receives written approval of Employee's intended employment or rendering such services (such approval shall not be unreasonably withheld and shall be provided by uniQure within ten (10) days from receipt of the written assurances set forth in subsection (i)). uniQure may, in its sole discretion, waive all or a portion of the Non-Competition Period. uniQure and Employee mutually agree that the following consideration offered to Employee in Employee's employment agreement supports Employee's promises, undertakings, and obligations under this Section 5(c) regarding post-employment non-competition: the equity grants associated with Employees Employment Agreement, bonus payments and additional severance benefits, which consideration Employee acknowledges and agree is adequate, fair, reasonable, and mutually agreed upon. The "Geographic Area" assigned to Employee is worldwide.

d. Nothing contained herein shall preclude Employee from participating, directly or indirectly, as a passive investor in the securities of any publicly-traded corporation.

e. **Disclosure of Agreement to Subsequent Employers:** During the eighteen (18) month period following Employee's termination of employment from uniQure for any reason, Employee agrees to disclose this Agreement to every subsequent employer by

which Employee may subsequently be employed or otherwise engaged in exchange for compensation

f. **Disclosure of Future Employment to uniQure**. For a period of one (1) year after the termination of employment with the Company for any reason, Employee shall promptly notify the Company of any change of address, and of any subsequent employment (stating the name and address of the employer and the title and duties of the position) or other business activity. In the event Employee fails to comply with this paragraph the non-solicitations, non-acceptance and noncompete periods set forth in paragraphs 5(a)-(c) shall be tolled, and shall commence with the date of the entry of a preliminary injunction

g. **Reasonableness of Temporal Scope:** Employee agrees that the temporal restrictions set forth in this Section are fair and are reasonably required for the protection of uniQure's legitimate business interests in light of Employee's substantial role as an employee of uniQure.

h. **Reasonableness of Geographic Scope:** Employee agrees that the geographic scope on Employee's obligations set forth in this Section is both appropriate and reasonable.

i. **Tolling of Post-Employment Obligations:** If it is later determined by a court of competent jurisdiction that injunctive relief is warranted to prevent Employee from engaging in certain post-employment conduct, then the restrictive periods shall be tolled for the lesser of the period of time that Employee is determined by a court of competent jurisdiction to have had already been engaging in the prohibited conduct prior to the injunction and the maximum period allowed by law. The Parties intend that uniQure shall be entitled to full restrictive periods of post-employment conduct that does not breach or threaten to breach this Agreement.

6. **Specific Performance.** Employee acknowledges that a breach of this Agreement will cause irreparable injury to uniQure, that uniQure's remedies at law will be inadequate in case of any such breach or threatened breach, and that uniQure will be entitled to preliminary injunctive relief, without bond, and other injunctive relief in case of any such breach or threatened breach.

7. **Waivers.** The waiver by uniQure or Employee of any action, right or condition in this Agreement, or of any breach of a provision of this Agreement, shall not constitute a waiver of any other occurrences of the same event.

8. **Survival, Binding Effect.** This Agreement shall survive the termination of Employee's employment with uniQure regardless of the manner of such termination and shall be binding upon Employee and Employee's heirs, executors and administrators.

9. **Assignability by uniQure.** This Agreement is assignable by uniQure and inures to the benefit of uniQure, its subsidiaries, affiliated corporations, successors and assignees. This Agreement, being personal, is not assignable by Employee.

10. **Severability**. The covenants of this Agreement are intended to be separable, and the expressions used therein are intended to refer to divisible entities. Accordingly, the invalidity

of all or any part of any section of this Agreement shall not render invalid the remainder of this Agreement or of such section. If, in any judicial proceeding, any provision of this Agreement is found to be so broad as to be unenforceable, it is hereby agreed that such provision shall be interpreted to be only so broad as to be enforceable.

11. **Notice of Immunity Rights.** You shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of confidential information or a trade secret that is made in confidence to a Federal, State, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law. You shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of confidential information or a trade secret that is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the confidential information or trade secret to the attorney of the individual and use the confidential/trade secret information in the court proceeding, provided that the individual files any document containing the confidential information or trade secret under seal and does not disclose the confidential information or trade secret, except pursuant to court order.

12. **Protected Rights.** Nothing contained in this Agreement limits your ability to file a charge or complaint with the Equal Employment Opportunity Commission, the National Labor Relations Board, the Occupational Safety and Health Administration, the Securities and Exchange Commission or any other federal, state or local governmental agency or commission ("Government Agencies"). You further recognize that this Agreement does not limit your ability to communicate with any Government Agencies or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, including providing documents or other information, without notice to uniQure. This Agreement does not limit your right to receive an award for information provided to any Government Agencies.

13. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts, but not the Commonwealth's laws concerning conflict of laws, and shall be deemed to have been made in Massachusetts.

14. **Consent To Exclusive Jurisdiction/Venue**. The Parties hereby consent and submit to the exclusive jurisdiction of the federal and state courts in the Commonwealth of Massachusetts, and to exclusive venue in any Massachusetts federal court and/or Massachusetts state court located in Suffolk County, for any dispute arising from this Agreement.

15. **Covenant Not To Sue Outside Of Massachusetts.** Employee hereby agrees that Employee will not commence, prosecute, or assist in any way another person or entity to commence or prosecute, any legal action or other proceeding (including but not limited to a declaratory judgment action) against uniQure concerning a dispute arising from or relating to this Agreement in any forum or jurisdiction other than the state and federal courts in the state of Massachusetts.

16. **Breach/Right to Consult Legal Counsel.** In addition to uniQure's other rights and remedies, in the event that a court of law finally determines that Employee has breached Employee's obligations under this Agreement, to the fullest extent permitted by law, Employee will be liable for reasonable costs and attorneys' fees incurred by uniQure in connection with the

enforcement of its rights under this Agreement. Employee acknowledges that Employee has been advised of Employee's right to consult with legal counsel prior to signing this Agreement, and that Employee has had a full and adequate opportunity to do so.

17. **Waiver of Right to Jury Trial and Punitive Damages.** EACH PARTY WAIVES ANY RIGHT TO SEEK A JURY TRIAL AND TO CLAIM FOR OR RECOVER ANY PUNITIVE DAMAGES IN ANY PROCEEDING REGARDING ANY DISPUTE THAT MAY ARISE BETWEEN THEM.

18. **Entire Agreement, Amendments.** This Agreement constitutes the entire understanding of the parties with respect to its subject matter, supersedes any prior communication or understanding with respect thereto, and no modification or waiver of any provision hereof shall be valid unless made in writing and signed by all of the parties hereto.

19. **Return of uniQure Property and Confidential Information/Non-Deletion of Data.** Upon termination of Employee's engagement by uniQure, or at any other time upon the request of uniQure, Employee shall forthwith deliver to uniQure any and all documents, devices, equipment, keys, security passes, credit cards, hardware, data, databases, source code, object code, and data or computer programming code stored on an optical or electronic medium, and any copies thereof, relating to uniQure's business and affairs, including all materials that are in the possession of or under the control of Employee and that incorporate any Confidential Information or any reference thereto. Employee agrees to refrain from purging or deleting data from any uniQure-owned equipment, including email systems, in connection with Employee's termination. To the extent that Employee possesses any data belonging to uniQure on any storage media owned by Employee (for example, a home computer's hard disk drive, portable data storage device, etc.), Employee agrees that Employee will work cooperatively with uniQure to return such data and ensure it is removed from Employee's devices in a manner that does not adversely impact any personal data. Employee agrees not to take any steps to delete any uniQure data from any device without first obtaining uniQure's written approval. Employee agrees to cooperate with uniQure if uniQure requests written or other positive confirmation of the return or destruction of such data from any personal storage media.

20. **EMPLOYEE ACKNOWLEDGES AND AGREES THAT THE CONSIDERATION PROVIDED TO EMPLOYEE AT THE COMMENCEMENT OF EMPLOYMENT BEYOND THE EMPLOYEES BASE SALARY (INCLUDING, WITHOUT LIMITATION, ANY PROMISE OF STOCK OR OPTION GRANTS, SIGNING BONUS, OR OTHER BONUS) CONSTITUTE SUFFICIENT CONSIDERATION FOR EMPLOYEE'S AGREEMENT TO ABIDE BY THE TERMS OF THIS AGREEMENT**.

21. This Agreement may be executed in multiple counterparts, each of which shall be treated as an original. Facsimile signatures shall be valid and effective for all purposes.

[REMAINDER OF PAGE IS BLANK]

EMPLOYEE

By: /s/ Maria Cantor
Name: Maria Cantor

Date: February 28, 2020

uniQure, Inc.

By : /s/ Matthew Kapusta
Name: Matthew Kapusta

Date: February 28, 2020

EXHIBIT A

LIST OF EMPLOYEE DEVELOPMENTS
(*if none, please write the word "none" and sign below*)

None

Signature

/s/ Maria Cantor
Maria Cantor

Date: February 28, 2020

EXHIBIT B

GENERAL RELEASE OF CLAIMS

In exchange for the promises and benefits set forth in Section 19 of the Employment Agreement between uniQure, Inc. and **Maria E. Cantor** made as of **March 1, 2020,** and to be provided to me following the Effective Date of this General Release, I, **Maria E. Cantor,** on behalf of myself, my heirs, executors and assigns, hereby acknowledge, understand and agree as follows:

1. On behalf of myself and my family, heirs, executors, administrators, personal representatives, agents, employees, assigns, legal representatives, accountants, affiliates and for any partnerships, corporations, sole proprietorships, or other entities owned or controlled by me, I fully release, acquit, and forever discharge uniQure, Inc., its past, present and future officers, directors, shareholders, agents, representatives, insurers, employees, attorneys, subsidiaries, affiliated corporations, parents, and assigns (collectively, the "Releasees"), from any and all charges, actions, causes of action, claims, grievances, damages, obligations, suits, agreements, costs, expenses, attorneys' fees, or any other liability of any kind whatsoever, suspected or unsuspected, known or unknown, which have or could have arisen out of my employment with or services performed for Releasees and/or termination of my employment with or termination of my services performed for Releasees (collectively, "Claims"), including:

a. Claims arising under Title VII of the Civil Rights Act of 1964 (as amended); the Civil Rights Acts of 1866 and 1991; the Americans With Disabilities Act; the Family and Medical Leave Act; the Employee Retirement Income Security Act; the Occupational Health and Safety Act; the Sarbanes-Oxley Act; the Massachusetts Law Against Discrimination (M.G.L. c. 151B, et seq., and/or any other laws of the Commonwealth of Massachusetts related to employment or the separation from employment;

b. Claims for age discrimination arising under the Age Discrimination in Employment Act of 1967 (as amended) ("ADEA") and the Older Workers Benefits Protection Act, except ADEA claims that may arise after the execution of this General Release;

c. Claims arising out of any other federal, state, local or municipal statute, law, constitution, ordinance or regulation; and/or

d. Any other employment related claim whatsoever, whether in contract, tort or any other legal theory, arising out of or relating to my employment with the Company and/or my separation of employment from the Releasees.

e. Excluded from this General Release are any claims that cannot be released or waived by law. This includes, but is not limited to, my right to file a charge with or participate in an investigation conducted by certain government agencies, such as the EEOC or NLRB. I acknowledge and agree, however, that I am releasing and waiving my right

to any monetary recovery should any government agency pursue any claims on my behalf that arose prior to the effective date of this General Release.

f. I waive all rights to re-employment with the Releasees. If I do apply for employment with the Releasees, the Releasees and I agree that the Releasees need not employ me, and that if the Releasees declines to employ me for any reason, it shall not be liable to me for any cause of action or damages whatsoever.

2. Release of Other Claims. I fully release, acquit, and forever discharge the Releasees from any and all other charges, actions, causes of action, claims, grievances, damages, obligations, suits, agreements, costs, expenses, attorneys' fees or any other liability of any kind whatsoever related to my employment, my employment agreement, my termination or the business of uniQure of which I have knowledge as of the time I sign this General Release.

3. I further acknowledge that I have received payment, salary and wages in full for all services rendered in conjunction with my employment with uniQure, Inc., including payment for all wages, bonuses, and accrued, unused paid time off, and that no other compensation is owed to me except as provided herein. I specifically understand that this general release of claims includes, without limitation, a release of claims for alleged wages due, overtime or other compensation or payment including any claim for treble damages, attorneys' fees and costs pursuant to the Massachusetts Wage Act and State Overtime Law M.G.L. c. 149, §§148, 150 *et seq.* and M.G.L. c. 151, §IA *et seq.* and I further acknowledge that I are unaware of any facts that would support a claim against the Released Parties for violation of the Fair Labor Standards Act or the Massachusetts Wage Act.

4. Notwithstanding anything to the contrary herein, nothing in this General Release shall be deemed to release any of the Releasees for: (i) any claim for the payment of compensation due under the Employment Agreement; (ii) any claim for any of the Accrued Benefits under the Employment Agreement; (iii) any claim for any separation benefit under Section 19 of the Employment Agreement including, without limitation, separation pay and accelerated vesting of stock options (as applicable and as defined in the Employment Agreement); or (iv) any rights to indemnification or coverage under a directors and officers liability insurance policy.

5. Restrictive Covenants. I acknowledge and agree that all of my obligations under the restrictive covenants in my Confidentiality, Developments, and Restrictive Covenants Agreement remain in full force and effect and shall survive the termination of my employment with the Releasees and the execution of this General Release.

6. Consultation with Attorney. I am advised and encouraged to consult with an attorney prior to executing this General Release. I acknowledge that if I have executed this General Release without consulting an attorney, I have done so knowingly and voluntarily.

7. Period for Review. I acknowledge that I have been given at least 21 days from the date I first received this General Release (or at least 45 days from the date I first received this General Release if my termination is part of a group reduction in force) during which to consider signing it.

8. Revocation of General Release. I acknowledge and agree that I have the right to revoke my acceptance of this General Release if I notify the Releasees in writing within 7 calendar days following the date I sign it. Any revocation, to be effective, must be in writing, signed by me, and either: a) postmarked within 7 calendar days of the date I signed it and addressed to the then current address of uniQure, Inc.'s headquarters (to the attention of the CEO); orb) hand delivered within 7 days of execution of this General Release to the uniQure, Inc.'s CEO. This General Release will become effective on the 8th day after I sign it (the "Effective Date"); provided that I have not timely revoked it.

I ACKNOWLEDGE AND AGREE THAT I HAVE BEEN ADVISED THAT THE GENERAL RELEASE IS A LEGAL DOCUMENT, AND I HAVE BEEN ADVISED TO CONSULT WITH AN ATTORNEY CONCERNING THIS GENERAL RELEASE. I ACKNOWLEDGE AND AGREE THAT I HAVE CAREFULLY READ AND FULLY UNDERSTAND ALL PROVISIONS OF THIS GENERAL RELEASE AND I AM VOLUNTARILY AND KNOWINGLY SIGNING IT.

IN, WITNESS WHEREOF, I have duly executed this Agreement under seal as of the _____ [day] of _____ [month],_____ [year]

Maria E. Cantor

EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EMPLOYMENT AGREEMENT (this "Agreement") is made and entered into as of March 1, 2020 (the "Effective Date"), by and between uniQure, Inc., 113 Hartwell Avenue, Lexington, MA 02421 (together with any and all of its affiliates, the "Company") and Jonathan Garen (the "Executive").

WITNESSETH:

WHEREAS, the Company wishes to continue to employ Executive as Chief Business Officer.

WHEREAS, Executive wishes to continue to be employed by the Company and to serve in such capacity under the terms and conditions set forth in this Agreement.

WHEREAS, the Company and Executive are party to that certain Employment Agreement (the "Prior Employment Agreement") dated June 15, 2016 as subsequently amended.

WHEREAS, the Company and Executive desire to terminate the Prior Employment Agreement and contemporaneously replace the Prior Employment Agreement with this Agreement without any overlap, gap or discontinuity in the employment of the Executive.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and intending to be legally bound hereby, the Company and Executive agree as follows.

1. Employment. The Company hereby agrees to continue to employ Executive, and Executive hereby accepts such continued employment by the Company, as a full-time employee for the period and upon the terms and conditions contained in this Agreement. The Prior Employment Agreement is hereby terminated as of the Effective Date.

2. Term. Executive's term of employment with the Company under this Agreement shall begin on the Effective Date and shall continue in force and effect from year to year unless terminated earlier in accordance with Section 19 (the "Term").

3. Position and Duties. During the Term, Executive shall serve the Company as its Chief Business Officer, reporting directly to the uniQure Chief Executive Officer (the "CEO"). Executive's duties will include but not be limited to:

- The Chief Business Officer (CBO) will be responsible for the strategic leadership and direction of the company. He will hold management accountability for business development & licensing (BD&L), corporate development, and alliance management;
- The CBO will be a key member of the senior management team and an advisor to the CEO with respect to the Company's overall strategy. He will be accountable for making decisions for the Company with respect to all commercial and market access-related activities, pipeline strategy, business

development, strategic collaborations and alliances, including cultivating external relationships, partnership selection, deal architecture and negotiation, resource planning and allocation, and business and financial planning for strategic business relationships. The focus is to drive future growth and success of the Company;

- § As a key executive, the CBO will work with members of the senior management team and the Board of Directors to establish goals and metrics and drive the Company overall business performance; and

- § Any other duties as may from time to time be reasonably assigned to you by the Company.

Executive will perform other duties consistent with the job description previously provided and as may be customarily provided by a person in such position.

4. During the Term, Executive shall devote full business time, best efforts, skill, knowledge, attention and energies to the advancement of the Company's business and interests and to the performance of Executive's duties and responsibilities as an employee of the Company. Executive shall abide by the rules, regulations, instructions, personnel practices and policies of the Company and any changes therein that may be adopted from time to time by the Company.

5. During the Term, Executive shall not be engaged in any business activity which, in the judgment of the Company, conflicts with Executive's duties hereunder, whether or not such activity is pursued for pecuniary advantage. Should Executive wish to provide any services to any other person or entity other than the Company or to serve on the board of directors of any other entity or organization, Executive shall submit a written request to the Company for consideration and approval by the Company, which approval shall not unreasonably be withheld. If the Company later makes a reasonable, good faith determination that Executive's continued service on another entity's board would be detrimental to the Company, it will give Executive thirty (30) days' written notice that it is revoking the original approval, and Executive will resign from the applicable board within thirty (30) days after receipt of such notice. Notwithstanding the foregoing, Executive may engage in civic and charitable organizations and manage his personal and business affairs during normal business hours provided such activities do not, individually or collectively, interfere with the performance of his duties hereunder.

6. Location. Executive shall perform the services hereunder from the Company's USA headquarters at 113 Hartwell Avenue, Lexington MA, USA; provided, however, that Executive shall be required to travel from time to time for business purposes, including, without limitation, to the Company's facilities in Amsterdam, Netherlands.

7. Compensation and Benefits.

(a) *Base Salary.* For all services rendered by Executive under this Agreement, the Company will pay Executive a base salary at the annual rate of Four Hundred Ten Thousand dollars ($ 410,000), which shall be reviewed annually by the CEO for adjustment (the base salary in effect at any time,

the "Base Salary"). Executive's Base Salary shall be paid in bi-weekly installments, less withholdings as required by law and deductions authorized by Executive, and payable pursuant to the Company's regular payroll practices in effect at the time and as may be changed from time to time, subject to the terms of this agreement.

(b) *Discretionary Bonus.* Following the end of each calendar year and subject to the approval of the Company, Executive shall be eligible for a target retention and performance bonus of Thirty-Five percent (35%) of the annual Base Salary based on performance and the Company's performance and financial condition during the applicable calendar year, as determined by the Company in its sole discretion (a "Bonus"). In any event, Executive must be an active employee of the Company as of the 1st of October of the relevant calendar year and on the date the Bonus is distributed in order to be eligible for and to earn any Bonus, as it also serves as an incentive to remain employed by the Company.

8. Equity. Executive will be eligible for future equity grants pursuant to the Company's policies and procedures. All such equity grants shall be subject to the express terms and conditions of this Employment Agreement.

9. Retirement and Welfare Benefits. Executive is eligible to participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided that Executive is eligible under (and subject to all provisions of) the plan documents that govern those programs. These include medical, dental and disability insurances. Benefits are subject to change at any time in the Company's sole discretion.

10. Paid Time Off and Holidays. Executive is eligible for 4 weeks of paid vacation per calendar year (prorated for any partial year during the term) to be taken at such times as may be approved in advance by the Company. Executive is also entitled to all paid holidays observed by the Company in the United States. Executive shall have all rights and be subject to all obligations and responsibilities with respect to paid time off and holidays as are set forth in the Company's employee manual or other applicable policies and procedures, which may provide for benefits greater than but not less than those provided in this Agreement.

11. Expense Reimbursement. During the Term, Executive shall be reimbursed by the Company for all necessary and reasonable expenses incurred by Executive in connection with the performance of Executive's duties hereunder (including business trips to the uniQure Amsterdam headquarters). Executive shall keep an itemized account of such expenses, together with vouchers and/or receipts verifying the same, and submit for reimbursement on a monthly basis. Any such expense reimbursement will be made in accordance with the Company's travel and expense policies governing reimbursement of expenses as are in effect from time to time.

12. Withholding. All amounts set forth in this Agreement are on a gross, pre-tax basis and shall be subject to all applicable federal, state, local and foreign withholding, payroll and other taxes, and the Company may withhold from any amounts payable to Executive

(including any amounts payable pursuant to this Agreement) in order to comply with such withholding obligations.

13. IP and Restrictive Covenants. The Company's agreement to enter into this Agreement is contingent upon Executive's execution of the Company's Confidentiality, Developments, and Restrictive Covenants Agreement, attached as Exhibit A to this Agreement. Nothing in this Agreement or the Confidentiality, Developments, and Restrictive Covenants Agreement shall prohibit or restrict Executive from initiating communications directly with, responding to any inquiry from, providing testimony before, providing confidential information to, reporting possible violations of law or regulation to, or filing a claim or assisting with an investigation directly with a self-regulatory authority or a government agency or entity, including the Equal Employment Opportunity Commission, the Department of Labor, the National Labor Relations Board, the Department of Justice, the Securities and Exchange Commission, Congress, any agency Inspector General or any other federal, state or local regulatory authority (collectively, the "Regulators"), or from making other disclosures that are protected under the whistleblower provisions of state or federal law or regulation. Executive does not need the prior authorization of the Company to engage in conduct protected by this subsection, and Executive does not need to notify the Company that Executive has engaged in such conduct. Please take notice that federal law provides criminal and civil immunity to federal and state claims for trade secret misappropriation to individuals who disclose trade secrets to their attorneys, courts, or government officials in certain, confidential circumstances that are set forth at 18 U.S.C. §§ 1833(b)(1) and 1833(b)(2), related to the reporting or investigation of a suspected violation of the law, or in connection with a lawsuit for retaliation for reporting a suspected violation of the law.

14. At-Will Employment. This Agreement shall not be construed as an agreement, either express or implied, to employ Executive for any stated term, and shall in no way alter the Company's policy of employment at-will, under which both the Company and Executive remain free to end the employment relationship for any reason, at any time, with or without Cause or notice. Similarly, nothing in this Agreement shall be construed as an agreement, either express or implied, to pay Executive any compensation or grant Executive any benefit beyond the end of employment with the Company.

15. Conflicting Agreements. Executive acknowledges and represents that by executing this Agreement and performing Executive's obligations under it, Executive will not breach or be in conflict with any other agreement to which Executive is a party or is bound, and that Executive is not subject to any covenants against competition or similar covenants that would affect the performance of Executive's obligations for the Company.

16. No Prior Representations. This Agreement and its exhibits constitute all the terms of Executive's hire and supersedes all prior representations or understandings, whether written or oral, relating to the terms and conditions of Executive's employment.

17. Change of Control. In the event of a Change of Control as defined below, the vesting conditions that may apply to any options, restricted shares, restricted stock units, performance stock units or other grants of equity held by Executive pursuant to this Agreement and the Company's Amended and Restated 2014 Share Incentive Plan will be automatically waived, and

all the Stock Options will be deemed to be fully exercisable commencing on the date of the Change of Control and ending on the eighteen (18) month anniversary of the Change of Control or, if earlier, the expiration of the term of such Stock Options. For purposes of this Agreement, "Change of Control" shall mean the date on which any of the following events occurs:

(a) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing forty (40) percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Board ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company); or

(b) a majority of the members of the Board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board before the date of the appointment or election; or

(c) the consummation of (i) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty (50) percent of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), or (ii) any sale or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company.

18. RESERVED.

19. Termination. The Term shall continue until the termination of Executive's employment with the Company as provided below.

(a) *Events of Termination.* Executive's employment, Base Salary and any and all other rights of Executive under this Agreement or otherwise as an employee of the Company will terminate:

(i) upon the death of Executive;

(ii) upon the Disability of Executive (immediately upon notice from either party to the other). For purposes hereof, the term "Disability" shall mean an incapacity by accident, illness or other circumstances which renders Executive mentally or physically incapable of performing the duties and services required of Executive hereunder on a full-time basis for a period of at least 120 consecutive days.

(iii) upon termination of Executive for Cause;

(iv) upon the resignation of employment by Executive without Good Reason (upon sixty (60) days' prior written notice);

(v) upon termination by the Company for any reason other than those set forth in Sections 19(a)(i) through 19(a)(iv) above;

(vi) upon voluntary resignation of employment by Executive for Good Reason as described in Section 19(f), below;

(vii) upon a Change of Control Termination as described in Section 19(g), below.

(b) In the event Executive's termination occurs pursuant to Sections 19(a)(i) - (iv) above, Executive will be entitled only to the Accrued Benefits through the termination date. The Company will have no further obligation to pay any compensation of any kind (including, without limitation, any Bonus or portion of a Bonus that otherwise may have become due and payable to Executive with respect to the year in which such termination date occurs), or severance payment of any kind, unless otherwise provided herein. For purposes of this Agreement, Accrued Benefits shall mean (i) payment of Base Salary through the termination date, (ii) payment of any Bonus for performance periods completed prior to the termination date, (iii) any payments or benefits under the Company's benefit plans that are vested, earned or accrued prior to the termination date (including, without limitation, earned but unused vacation); and (iv) payment of unreimbursed business expenses incurred by Executive.

(c) For purposes of this Agreement, "Cause" shall mean the good faith determination by the Company, after written notice from the Company to Executive that one or more of the following events has occurred and stating with reasonable specificity the actions that constitute Cause and the specific reasonable cure (related to subsections (i) and (viii) below):

(i) Executive has willfully or repeatedly failed to perform Executive's material duties and such failure has not been cured after a period of thirty (30) days' written notice;

(ii) any reckless or grossly negligent act by Executive having the foreseeable effect of injuring the interest, business or reputation of the Company, or any of its parents, subsidiaries or affiliates in any material respect;

(iii) Executive's evidenced use of any illegal drug, or illegal narcotic, or excessive amounts of alcohol (as determined by the Company in its reasonable discretion) on Company property or at a function where Executive is working on behalf of the Company;

(iv) the indictment on charges or conviction for (or the procedural equivalent of conviction for), or entering of a guilty plea or plea of no contest with respect to a felony;

(v) the conviction for (or the procedural equivalent of conviction for), or entering of a guilty plea or plea of no contest with respect to a misdemeanor which, in the Company's reasonable judgment, involves moral turpitude deceit, dishonesty or fraud; except that, in the event that Executive is indicted on charges for a misdemeanor set forth in this subsection 19(c)(v), the Company may elect, in its sole discretion, to place Executive on administrative garden leave with or without continuation of full compensation and benefits under this Agreement during the pendency of the proceedings;

(vi) conduct by or at the direction of Executive constituting misappropriation or embezzlement of the property of the Company, or any of its parents or affiliates (other than the occasional, customary and *de minimis* use of Company property for personal purposes);

(vii) a breach by Executive of a fiduciary duty owing to the Company, including the misappropriation of (or attempted misappropriation of) a corporate opportunity or undisclosed self-dealing;

(viii) a material breach by Executive of any material provision of this Agreement, any of the Company's written employment policies or Executive's fiduciary duties to the Company, which breach, if curable, remains uncured for a period of thirty (30) days after receipt by Executive of written notice of such breach from the Company, which notice shall contain a reasonably specific description of such breach and the specific reasonable cure requested by the Supervisory Board; and

(ix) any breach of Executive's Confidentiality, Developments, and Restrictive Covenants Agreement.

(d) The definition of Cause set forth in this Agreement shall govern for purposes of Executive's equity compensation and any other compensation containing such a concept.

(e) *Notice Period for Termination Under Section 19(a)(iv).* Upon a termination of Executive under Section 19(a)(iv), during the notice period the Company may, in its sole discretion, relieve Executive of all of Executive's duties, responsibilities, and authority, may restrict Executive's access to Company property, and may take other appropriate measures deemed necessary under the circumstances.

(f) *Termination by Executive for Good Reason.* During the Term, Executive may terminate this Agreement at any time upon thirty (30) days' written notice to the Company for Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the Good Reason Process (hereinafter defined) following the occurrence of any of the following actions undertaken by the Company without Executive's express prior written consent: (i) the material diminution in Executive's responsibilities, authority and function; (ii) a material reduction in Executive's Base Salary, provided, however, that Good Reason shall not be deemed to have occurred in the event of a reduction in Executive's Base Salary which is pursuant to a salary reduction program affecting the CEO and all or substantially all other senior management employees of the Company and that does not adversely affect Executive to a greater extent than other similarly situated employees; provided, however that such reduction may not exceed twenty (20%) percent; (iii) a material change in the geographic location at which Executive provides services to the Company (i.e., outside a radius of fifty (50) miles from Lexington, Massachusetts); or (iv) a material breach by the Company of this Agreement or any other material agreement between Executive and the Company concerning the terms and conditions of Executive's employment, benefits or Executive's compensation (each a "Good Reason Condition"). Good Reason shall not include a change in the scope of Executive's responsibilities, authority or function in the areas of commercial and market access-related activities that is made in association with the hiring of a chief commercial officer or similar position.

"Good Reason Process" shall mean that: (i) Executive has reasonably determined in good faith that a Good Reason Condition has occurred; (ii) Executive has notified the Company in writing of the first occurrence of the Good Reason Condition within 60 days of the first occurrence of such condition; (iii) Executive has cooperated in good faith with the Company's efforts, for a period not less than thirty (30) days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason Condition continues to exist; and (v) Executive terminates employment within sixty (60) days after the end of the Cure Period. If the

Company cures to Executive's satisfaction (not unreasonably withheld) the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(g) *Termination As A Result of A Change Of Control.* For purposes of this Agreement, "Change of Control Termination" shall mean any of the following:

(i) Any termination by the Company of Executive's employment, other than for Cause (as defined in Section 19(c), above), that occurs within the period beginning ninety (90) days before and continuing until twelve (12) months after the Change of Control; or

(ii) Any resignation by Executive for Good Reason (as defined in Section 19(f), above), that occurs within twelve (12) months after the Change of Control.

(iii) For purposes of this Section 19(g), "Change of Control" shall have the same meaning as defined above in Section 17.

(h) *Separation Benefits.* Should Executive experience a termination of employment during the Term pursuant to Section 19(a)(v), (vi) or (vii) above, in addition to the Accrued Benefits Executive shall also be entitled to:

(i) *Lump Sum Severance Payment*:

a. In the case of a termination of employment during the Term pursuant to Section 19(a)(v) or (vi) above: a lump sum severance payment equal to 100% of the sum of (A) Executive's annual Base Salary and (B) Executive's target Bonus amount pursuant to Section 7(b) hereof (*i.e.*, Thirty-Five percent (35%) of Executive's annual Base Salary);

(ii) In the case of a termination of employment during the Term pursuant to Section 19(a)(vii) above: a lump sum severance payment equal to 150% of the sum of (A) Executive's annual Base Salary and (B) Executive's target Bonus amount pursuant to Section 7(b) hereof (*i.e.*, Thirty-Five percent (35%) of Executive's annual Base Salary);

(iii) a Pro-rata Bonus paid at the target bonus amount for the year of termination, as set forth in and subject to Section 7(b); as used in this Agreement, the term "Pro-rata Bonus" shall mean the product of the formula B x D/365 where B represents the target Bonus (*i.e.*, Thirty-Five percent (35%) of Executive's annual Base Salary), and D represents the number of days elapsed in the calendar year

through the date of the separation of Executive's employment from the Company.

(iv) Provided that Executive and Executive's eligible dependents, if any, are participating in the Company's group health, dental and vision plans on the termination date and elect on a timely basis to continue that participation in some or all of the offered plans through the federal law commonly known as "COBRA," the Company will pay or reimburse Executive for Executive's full COBRA premiums (i.e., employer and employee portion) until the earlier to occur of: (a) the expiration of the COBRA Payment Term (as defined below), (b) the date Executive becomes eligible to enroll in the health, dental and/or vision plans of another employer, (c) the date Executive (and/or Executive's eligible dependents, as applicable) is no longer eligible for COBRA coverage, or (d) the Company in good faith determines that payments under this paragraph would result in a discriminatory health plan pursuant to the Patient Protection and Affordable Care Act of 2010, as amended, and any guidance or regulations promulgated thereunder (collectively, "PPACA"). Executive agrees to notify the Company promptly if Executive becomes eligible to enroll in the plans of another employer or if Executive or any of Executive's dependents cease to be eligible to continue participation in the Company's plans through COBRA. "COBRA Payment Term" mean (x) in the case of a termination of employment during the Term pursuant to Section 19(a)(v) or (vi) above, the twelve (12) month anniversary of Executive's termination date, and (y) in the case of a termination of employment during the Term pursuant to Section 19(a)(vii) above, the eighteen (18) month anniversary of Executive's termination date.

To avoid duplication of severance payments, any amount paid under this subsection shall be offset against any severance amounts that may be owed by the Company to Executive pursuant to any of Company's Change of Control guidelines as may be adopted or amended.

20. General Release of Claims. Notwithstanding any provision of this agreement, all severance payments and benefits described in Section 19 of this Agreement (except for payment of the Accrued Benefits) are conditioned upon the execution, delivery to the Company, and expiration of any applicable revocation period without a notice of revocation having been given by Executive, all by the 30th day following the termination date of a General Release of Claims by and between Executive (or Executive's estate) and the Company in the form attached as Exhibit B to this Agreement. (In the event of Executive's death or incapacity due to Disability, the release will be revised for signature accordingly.) Provided any applicable timing requirements set forth above have been met, the payments and benefits will be paid or provided to Executive as soon as administratively practicable (but not later than forty-five (45) days)

following the date Executive signs and delivers the General Release to the Company and any applicable revocation period has expired without a notice of revocation having been given. Any severance or termination pay will be the sole and exclusive remedy, compensation or benefit due to Executive or Executive's estate upon any termination of Executive's employment (without limiting Executive's tights under any disability, life insurance, or deferred compensation arrangement in which Executive participates or at the time of such termination of employment or any Option Agreements or any other equity agreements to which Executive is a party). If such 45-day period spans two calendar years, payment will be paid after such 45-day period and revocation period have expired.

21. Certain Company Remedies. Executive acknowledges that Executive's promised services and covenants are of a special and unique character, which give them peculiar value, the loss of which cannot be reasonably or adequately compensated for in an action at law, and that, in the event there is a breach hereof by Executive, the Company will suffer irreparable harm, the amount of which will be impossible to ascertain. Accordingly, the Company shall be entitled, if it so elects, to institute and prosecute proceedings in any court of competent jurisdiction, either at law or in equity, to obtain damages for any breach of this Agreement, or to enjoin Executive from committing any act in breach of this Agreement. The remedies granted to the Company in this Agreement are cumulative and are in addition to remedies otherwise available to the Company at law or in equity.

22. Indemnification.

(a) The Company agrees that Executive shall be entitled to indemnification to the fullest extent permitted by Delaware law and under the Company's articles of incorporation, bylaws and any other corporate-related plan, program or policy. In addition, for a period of at least three (3) years after Executive's termination of employment, the Company shall maintain a directors and officers liability insurance policy under which Executive shall be included as a "Covered Person."

(b) In addition, and for the sake of clarity, the Company hereby specifically agrees that (i) if Executive is made a party, or is threatened to be made a party, to any "Proceeding" (defined as any threatened or actual action, suit or proceeding whether civil, criminal, administrative, investigative, appellate or other) by reason of the fact that (1) Executive is or was an employee, officer, director, agent, consultant or representative of the Company, or (2) is or was serving at the request of the Company as employee, officer, director, agent, consultant or representative of another person, or (ii) if any "Claim" (defined as any claim, demand, request, investigation, dispute, controversy, threat, discovery request or request for testimony or information) is made, or threatened to be made, that arises out of or relates to Executive's service in any of the foregoing capacity or to the Company, then Executive shall be indemnified and held harmless by the Company to the fullest extent permitted by applicable law, against any and all costs, expenses, liabilities and losses (including, without limitation, attorney's fees, judgments, interest, expenses of investigation, penalties, fines, taxes or penalties and amounts paid or to be paid in settlement)

incurred or suffered by Executive in connection therewith, except with respect to any costs, expenses, liabilities or losses (A) that were incurred of suffered as a result of Executive's willful misconduct, gross negligence or knowing violation of any written agreement between Executive and the Company, (B) that a court of competent jurisdiction determines to have resulted from Executive's knowing and fraudulent acts; provided, however, that the Company shall provide such indemnification only if (I) notice of any such Proceeding is given promptly to the Company, by Executive; (II) the Company is permitted to participate in and assume the defense of any such Proceeding; (III) such cost, expense, liability or loss results from the final judgment of a court of competent jurisdiction or as a result of a settlement entered into with the prior written consent of the Company; and (IV) in the case of any such Proceeding (or part thereof) initiated by Executive, such Proceeding (or part thereof) was authorized in advance in writing by the Company. Such indemnification shall continue even if Executive has ceased to be an employee, officer, director, agent, consultant or representative of the Company until all applicable statute of limitations have expired, and shall inure to the benefit of Executive's heirs, executors and administrators. The Company shall pay directly or advance to Executive all costs and expenses incurred by Executive in connection with any such Proceeding or Claim (except for Proceedings brought by the Company against Executive for claims other than shareholder derivative actions) within 30 days after receiving written notice requesting such an advance. Such notice shall include, to the extent required by applicable law, an undertaking by Executive to repay the amount advanced if Executive was ultimately determined not to be entitled to indemnification against such costs and expenses

23. Miscellaneous.

(a) *Right to Offset.* The Company may offset any undisputed amounts Executive owes the Company at the time of Executive's termination of employment (including any payment of Accrued Benefits or separation pay), except for secured or unsecured loans, against any amounts the Company owes Executive hereunder, subject in all cases to the requirements of Section 409A of the Code.

(b) *Cooperation.* Executive agrees that, during and after Executive's employment with the Company, subject to reimbursement of Executive's reasonable expenses, Executive will cooperate fully with the Company and its counsel with respect to any matter (including, without limitation, litigation, investigations, or governmental proceedings) in which Executive was in any way involved during Executive's employment with the Company. Executive shall render such cooperation in a timely manner on reasonable notice from the Company, and at such times and places as reasonably acceptable to Executive and the Company. The Company, following Executive's termination of employment, exercises commercially reasonable efforts to schedule and limit its need for Executive's

cooperation under this paragraph so as not to interfere with Executive's other personal and professional commitments.

(c) *Company Documents and Property.* Upon termination of Executive's employment with the Company, or at any other time upon the request of Company, Executive shall forthwith deliver to Company any and all documents, notes, notebooks, letters, manuals, prints, drawings, block diagrams, photocopies of documents, devices, equipment, keys, security passes, credit cards, hardware, data, databases, source code, object code, and data or computer programming code stored on an optical or electronic medium, and any copies thereof, in the possession of or under the control of Executive that embodies any confidential information of the Company. Executive agrees to refrain from purging or deleting data from any Company-owned equipment, including email systems, in connection with Executive's termination. To the extent that Executive possesses any data belonging to Company on any storage media owned by Executive (for example, a home computer's hard disk drive, portable data storage device, etc.), Executive agrees that Executive will work cooperatively with the Company to return such data and ensure it is removed from Executive's devices in a manner that does not adversely impact any personal data. Executive agrees not to take any steps to delete any Company data from any device without first obtaining Company's written approval. Executive agrees to cooperate with Company if Company requests written or other positive confirmation of the return or destruction of such data from any personal storage media. Nothing herein shall be deemed to prohibit Executive from retaining (and making copies of): Executive's personal non-business-related correspondence files; or (ii) documents relating to Executive's personal compensation, benefits, and obligations, and documents reasonably necessary to prepare personal income tax returns.

(d) *Waivers.* No waiver of any provision will be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement does not prevent subsequent enforcement of that term or obligation. The waiver by any party of any breach of this Agreement does not waive any subsequent breach.

(e) *Section 409A.* This Agreement is intended to comply with Section 409A of the Code, and its corresponding regulations, or an exemption thereto, and payments may only be made under this Agreement upon an event and in a manner permitted by Section 409A of the Code, to the extent applicable. Severance benefits under this Agreement are intended to be exempt from Section 409A of the Code under the "short-term deferral" exception, to the maximum extent applicable, and then under the "separation pay" exception, to the maximum extent applicable. Notwithstanding anything in this Agreement to the contrary, if required by Section 409A of the Code, if Executive is considered a "specified employee" for purposes of

Section 409A of the Code and if payment of any amounts under this Agreement is required to be delayed for a period of six months after separation from service pursuant to Section 409A of the Code, payment of such amounts shall be delayed as required by Section 409A of the Code, and the accumulated amounts shall be paid in a lump-sum payment within 10 days after the end of the six-month period. If Executive dies during the postponement period prior to the payment of benefits, the amounts withheld on account of Section 409A of the Code shall be paid to the personal representative of Executive's estate within 60 days after the date of Executive's death. All payments to be made upon a termination of employment under this Agreement may only be made upon a "separation from service" under Section 409A of the Code. For purposes of Section 409A of the Code, each payment hereunder shall be treated as a separate payment, and the right to a series of installment payments under this Agreement shall be treated as a right to a series of separate payments. In no event may Executive, directly or indirectly, designate the fiscal year of a payment. Notwithstanding any provision of this Agreement to the contrary, in no event shall the timing of Executive's execution of the General Release, directly or indirectly, result in Executive's designating the fiscal year of payment of any amounts of deferred compensation subject to Section 409A of the Code, and if a payment that is subject to execution of the General Release could be made in more than one taxable year, payment shall be made in the later taxable year. All reimbursements and in-kind benefits provided under this Agreement shall be made or provided in accordance with the requirements of Section 409A of the Code, including, where applicable, the requirement that (i) any reimbursement be for expenses incurred during the period specified in this Agreement, (ii) the amount of expenses eligible for reimbursement, or in-kind benefits provided, during a fiscal year not affect the expenses eligible for reimbursement, or in-kind benefits to be provided, in any other fiscal year, (iii) the reimbursement of an eligible expense be made no later than the last day of the fiscal year following the year in which the expense is incurred, and (iv) the right to reimbursement or in-kind benefits not be subject to liquidation or exchange for another benefit.

(f) *Governing Law; Consent to Exclusive Jurisdiction and Venue.* This Agreement and all questions relating to its validity, interpretation, performance and enforcement (including, without limitation, provisions concerning limitations of actions), shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts (notwithstanding any conflict-of-laws doctrines of such state or other jurisdiction to the contrary), and without the aid of any canon, custom or rule of law requiring construction against the draftsman. The parties hereby consent and submit to the exclusive jurisdiction of the federal and state courts in the Commonwealth of Massachusetts, and to exclusive

venue in any Massachusetts federal court and/or Massachusetts state court located in Suffolk County, for any dispute arising from this Agreement.

(g) *Notices.* Any notices, requests, demands, and other communications described in this Agreement are sufficient if in writing and delivered in person or sent postage prepaid, by certified or registered U.S. mail or by FedEx/UPS **to** Executive at Executive's last known home address and a copy by e-mail to Executive, or in the case of the Company, to the attention of the CFO or SVP HR, copy to the CEO at the main office of uniQure, N.V. Any notice sent by U.S. mail shall be deemed given for all purposes 72 hours from its deposit in the U.S. mail, or the next day if sent by overnight delivery.

(h) *Successors and Assigns.* Executive may not assign this Agreement, by operation of law or otherwise, without the Company's prior written consent. Without the Company's consent, any attempted transfer or assignment will be void and of no effect. The Company may assign its rights under this Agreement if the Company consolidates with or merges into any other entity, or transfers substantially all of its properties or assets to any other entity, provided that such entity expressly agrees to be bound by the provisions hereof. This Agreement will inure to the benefit of and be binding upon the Company and Executive, their respective successors, executors, administrators, heirs, and permitted assigns.

(i) *Counterparts; Facsimile.* This Agreement may be executed in two or more counterparts, each of which shall be an original and all of which together shall constitute one and the same instrument. This Agreement may be executed by facsimile transmission, PDF, electronic signature or other similar electronic means with the same force and effect as if such signature page were an original thereof.

(j) *Severability.* The provisions of this Agreement are independent of and separable from each other, and no provision shall be affected or rendered invalid or unenforceable by virtue of the fact that for any reason any other provision or provisions may be invalid or unenforceable in whole or in part.

(k) *Enforceability.* If any portion or provision of the Agreement is declared illegal or unenforceable by a court of competent jurisdiction, the remainder of the Agreement will not be affected, and each remaining portion and provision of this Agreement will be valid and enforceable to the fullest extent permitted by law.

(l) *Survival.* Sections 13, 20, 21, and the Company's Confidentiality, Developments, and Restrictive Covenants Agreement (Exhibit A) and all

other provisions necessary to give effect thereto, shall survive the termination of Executive's employment for any reason.

(m) *Recoupment and Other Policies.* All payments under this Agreement shall be subject to any applicable clawback and recoupment policies and other policies that may be implemented by the Board from time to time, including, without limitation, the Company's right to recover amounts in the event of a financial restatement due in whole or in part to fraud or misconduct by one or more of the Company's executives or in the event Executive violates any applicable restrictive covenants in favor of the Company to which Executive is subject.

(n) *Entire Agreement; Amendment.* This Agreement contains the entire understanding among the parties hereto with respect to the subject matter hereof, and supersedes all prior and contemporaneous agreements and understandings, inducements or conditions, express or implied, oral or written, between the parties hereto (including without limitation any prior employment agreements between the parties hereto); provided, however, that any agreements referenced in this Agreement or executed herewith are not superseded. The express terms hereof control and supersede any course of performance and/or usage of the trade inconsistent with any of the terms hereof. This Agreement may be amended or modified only by a written instrument signed by Executive and by a duly authorized representative of the Company.

(o) *Section Headings.* The section headings in this Agreement are for convenience only, form no part of this Agreement and shall not affect its interpretation.

[This space intentionally left blank.]

IN WITNESS WHEREOF, the parties have executed and delivered this Agreement as of the date first above written.

uniQure, Inc.

By: /s/ Matthew Kapusta
Name: Matthew Kapusta
Title: Chief Executive Officer

EXECUTIVE

/s/ Jonathan Garen
Jonathan Garen

EXHIBIT A
UNIQURE, INC.
CONFIDENTIALITY, INVENTIONS, AND
RESTRICTIVE COVENANTS AGREEMENT

This Confidentiality, Inventions, and Restrictive Covenants Agreement (the "Agreement") is made between uniQure, Inc. ("uniQure"), and Jonathan Garen (the "Employee") (collectively, the "Parties") in conjunction with an Employment Agreement providing additional severance and other benefits dated March 1, 2020.

In exchange for uniQure's agreement to employ Employee in a capacity of high trust and confidence and/or in which Employee will develop or receive highly sensitive Confidential Information and in which Employee may develop customer or supplier Goodwill, and for other good and valuable consideration, including the compensation and benefits referred to herein and/or provided for in Employee's offer letter or employment agreement, the receipt and sufficiency of which are hereby acknowledged, Employee hereby agrees as follows:

1. **Employment At Will.** Employee agrees that Employee remains an "at will" employee of uniQure and that Employee may terminate Employee's employment at any time. Employee further agrees that uniQure may similarly terminate Employee's employment at any time as per the Employment Agreement between the Parties. This agreement does not create a contract for employment for any specified duration, either expressly or by implication.

2. **Subsequent Material Changes in Employment.** Even though the nature of Employee's relationship with uniQure is as an "at will" employee, the Parties have entered into this Agreement with the understanding that it is possible that Employee's position, title, duties and responsibilities could increase, decrease, develop, evolve, or otherwise change in a material way in the future and, in light of that understanding, the Parties nevertheless intend that this Agreement shall follow Employee throughout the entire course of Employee's or her employment with uniQure and that any such subsequent material change shall not affect either the enforceability or the validity of this Agreement.

3. **Non-disclosure of Confidential Information**. Employee acknowledges that, for Employee to perform Employee's duties properly, Employee will have access to and uniQure must necessarily entrust Employee with certain proprietary and confidential business information (the "Confidential Information"). Employee agrees that, during the term of Employee's employment with uniQure and at all times thereafter, regardless of the reason for termination of employment, Employee will not disclose any Confidential Information or use it in any way, except with prior written authorization and on behalf of uniQure, whether or not such Confidential Information is produced by Employee's own efforts.

a. For purposes of this Agreement, "Confidential Information" means all original and copies of all material, data, documents, and information in any format (including without limitation all hardcopy, softcopy, electronic, web, and computer-based information, documents, data files, records, videos, pictures, and recordings) which constitutes confidential and/or trade secret information as further defined in this Agreement

and/or Massachusetts law. Examples of Confidential Information include, but are not limited to:

- § All such information and knowledge about uniQure and the products, services, standards, specifications, procedures, business methods and techniques which are not in the public domain or generally known in the industry;
- § business development plans and activities, including the identity and characteristics of uniQure's current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § information concerning pending and prospective mergers, acquisitions, or other types of transactions;
- § the prices, terms and conditions of uniQure's contracts or agreements with its current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § the identities, needs and requirements of uniQure's current and prospective customers, vendors, suppliers, or any other type of business relationship;
- § cost and pricing policies and data, including the costs of uniQure's business and all results of its business operations;
- § financial information, including but not limited to results from operations, results relating to various brands, profit/loss and revenue figures, transaction data, account information;
- § facility and data security-related information, including door access codes, computer access codes, security system PINs, computer system user identification information, passwords and remote access codes;
- § personnel information; and
- § intellectual property, including any patents, trademarks or servicemarks, of uniQure.

b. Employee further acknowledges that the development or acquisition of such Confidential Information is the result of great effort and expense by uniQure, that the Confidential Information is critical to the survival and success of uniQure, and that the unauthorized disclosure or use of the Confidential Information would cause uniQure irreparable harm.

4. **Inventions and Developments:**

a. **Disclosure:** Employee shall promptly and fully disclose to uniQure any and all writings, inventions, products, ideas, discoveries, developments, methods, techniques, technical data, processes, formulas, improvements, know-how, biological or chemical materials, compositions and scientific or business innovations (whether or not reduced to practice and whether or not protectable under state, federal or foreign patent, copyright, trade secret or similar laws) (collectively the "Inventions") that Employee makes, conceives, devises, invents, creates, develops or writes, either solely or jointly with others, either within or without uniQure, during the period of Employee's employment with uniQure.

b. **Further Assurances:** Upon and/or following disclosure of each Invention to uniQure, Employee will, during Employee's employment and at any time thereafter, at

the request and cost of uniQure, sign, execute, make and do all such deeds, instruments, documents, acts and things as uniQure and its duly authorized agents may reasonably require to apply for, obtain and vest in the name of uniQure alone (unless uniQure otherwise directs) letters patent, copyrights or other analogous protection in any country throughout the world, including all right, title and interest in the Inventions, and when so obtained or vested to renew and restore the same; and to defend any opposition proceedings in respect of such applications and any opposition proceedings or petitions or applications for revocation of such letters patent, copyright or other analogous protection.

c. **Works Made For Hire:** Employee acknowledges that all written or computer coded materials manifested in documents, systems design, disks, tapes, drawings, reports, specifications, data, memoranda or otherwise prepared in whole or in part by Employee, jointly or singly, in the course of Employee's employment, whether on uniQure's time or on Employee's own time, including without limitation all Inventions, shall be "works made for hire" under the Copyright Act of 1976 (the "Copyright Act"), and shall be the sole property of uniQure and uniQure shall be the sole author of such works within the meaning of the Copyright Act. All such works (the "Work Product"), as well as all copies of such works in whatever medium, shall be owned exclusively by uniQure and Employee hereby expressly disclaims any and all interests in such works. If the copyright to any such work shall not be the property of uniQure by operation of law, Employee hereby and without further consideration, irrevocably assigns to uniQure all right, title and interest in such work, including all so-called "moral rights," and will assist uniQure and its nominees in every proper way, at uniQure's expense, to secure, maintain and defend for uniQure's own benefit copyrights and any extensions and renewals thereof on such work, including translations thereof in any and all countries, such work to be and to remain the property of uniQure whether copyrighted or not. If the foregoing moral rights cannot be so assigned under the applicable laws of the countries in which such rights exist, Employee hereby waives such moral rights and consents to any action of uniQure that would violate such rights in the absence of such consent. Employee warrants that no Work Product shall contain any material owned by any third party, except as disclosed to uniQure pursuant to subsection (b), and that as to any such material, Employee shall have all rights necessary to provide to uniQure the full, unrestricted benefits to such material as incorporated into the Work Product.

d. **Assignment:** Without in any way limiting the foregoing, Employee hereby assigns to uniQure all right, title and interest to all Inventions, including but not limited to patent rights and copyrights.

e. **Power of Attorney:** In the event uniQure is unable, after reasonable effort, to secure Employee's signature on any letters patent, copyright or other analogous protection relating to an Invention, whether because of Employee's physical or mental incapacity or for any other reason whatsoever, Employee hereby irrevocably designates and appoints uniQure and its duly authorized officers and agents as Employee's agent and attorney-in-fact, to act for and in Employee's behalf and stead to execute and file any such application or applications and to do all other lawfully permitted acts to further the prosecution thereon with the same legal force and effect as if executed by Employee.

f. **Employee Developments:** Employee represents that all developments, inventions, works of authorship or other intellectual property rights to which Employee claims ownership as of the date of this Agreement (the "Employee Developments"), and which the parties agree are excluded from this Agreement, are listed in Exhibit A attached hereto. If no such Employee Developments are listed on Exhibit A, Employee represents that there are no such Employee Developments at the time of signing this Agreement.

g. After the date hereof, Employee will promptly disclose to uniQure and uniQure agrees to receive all disclosures in confidence, any improvements, discoveries, software, designs or writing of Employee that exist, regardless of the state of completion, to determine if they shall be deemed Inventions.

5. **Restrictive Covenants:**

a. For the purposes of this Section:

"Competing Products and Services" means any product, process, therapy or service of any person or organization other than uniQure that is in development or has been commercialized and that involves a gene therapy or the manufacture of a gene therapy: (i) for the treatment of any disease for which uniQure has a product or therapy on the market or in any phase of development during the term of Employee's employment with uniQure, including, without limitation, any such products in the field of cardiovascular, central nervous system, liver or metabolic disease, or (ii) using an adeno-associated virus serotype (AAV); or (iii) that otherwise is directly competitive (or, for any products, processes, therapies or services in the development stage, would be directly competitive, if marketed or sold) with any uniQure product or therapy on the market or in any phase of development during the term of Employee's employment with uniQure.

"Competing Organization" means any legal entity, including, without limitation, any company, corporation, partnership, sole proprietorship, bureau, ministry or agency, that develops, makes, uses, sells, imports, distributes, sells Competing Products and Services or otherwise consults or assists with such activities.

"Prohibited Activities" means any specific types of services performed by the Employee for uniQure or its affiliates at any time during the two (2) years preceding the termination of employment.

b. **Non-Solicitation and Non-Acceptance:** Employee agrees that during Employee's employment and for a period of eighteen (18) months after the termination of employment for any reason, Employee shall not directly or indirectly:

i. recruit, solicit, or hire any employee, consultant, independent contractor who performed services for uniQure, or induce or attempt to induce any such employee, consultant, or independent contractor, to reduce or discontinue Employee's employment, contractual, or other affiliation with uniQure;

ii. contact or accept business from any individual or entity that was an actual or prospective customer or business relationship of uniQure and that Employee serviced, had contact with, or learned Confidential Information about during employment at uniQure, for the purpose of soliciting the sale of or selling Competing Products and Services to such individual or entity and/or to divert any portion of that individual's or entity's business away from uniQure.

c. **Non-competition:** Employee agrees that during Employee's employment and for a period of twelve (12) months after the termination of employment (the "Non-Competition Period"), except in the case where Employee is terminated by uniQure without cause, Employee shall not directly or indirectly, perform Prohibited Activities (whether as an employee, consultant, independent contractor, member of a board of directors, or in any other capacity) to a Competing Organization within the Geographic Area assigned to Employee in Employee's position(s) with uniQure, or where Employee provided services or had a material presence or influence, during any time within the last two (2) years of employment with uniQure. Notwithstanding the foregoing, nothing herein shall prevent Employee from becoming employed by or otherwise rendering services to a Competing Organization whose business is diversified, if the scope of Employee's services to such Competing Organization is limited to identifiable parts, segments, entities or business units of such business that, are not engaged in providing or producing Competing Services. Employee agrees that if Employee seeks to become employed or otherwise renders services to such a Competing Organization during the restricted period, prior to Employee's employment or rendering such services, (i) Employee shall provide uniQure with written assurance from such Competing Organization and from Employee that Employee will not render services directly or indirectly in connection with any Competing Services, and (ii) Employee receives written approval of Employee's intended employment or rendering such services (such approval shall not be unreasonably withheld and shall be provided by uniQure within ten (10) days from receipt of the written assurances set forth in subsection (i)). uniQure may, in its sole discretion, waive all or a portion of the Non-Competition Period. uniQure and Employee mutually agree that the following consideration offered to Employee in Employee's employment agreement supports Employee's promises, undertakings, and obligations under this Section 5(c) regarding post-employment non-competition: the equity grants associated with Employees Employment Agreement, bonus payments and additional severance benefits, which consideration Employee acknowledges and agree is adequate, fair, reasonable, and mutually agreed upon. The "Geographic Area" assigned to Employee is worldwide.

d. Nothing contained herein shall preclude Employee from participating, directly or indirectly, as a passive investor in the securities of any publicly-traded corporation.

e. **Disclosure of Agreement to Subsequent Employers:** During the eighteen (18) month period following Employee's termination of employment from uniQure for any reason, Employee agrees to disclose this Agreement to every subsequent employer by which Employee may subsequently be employed or otherwise engaged in exchange for compensation

f. **Disclosure of Future Employment to uniQure**. For a period of one (1) year after the termination of employment with the Company for any reason, Employee shall promptly notify the Company of any change of address, and of any subsequent employment (stating the name and address of the employer and the title and duties of the position) or other business activity. In the event Employee fails to comply with this paragraph the non-solicitations, non-acceptance and noncompete periods set forth in paragraphs 5(a)-(c) shall be tolled, and shall commence with the date of the entry of a preliminary injunction

g. **Reasonableness of Temporal Scope:** Employee agrees that the temporal restrictions set forth in this Section are fair and are reasonably required for the protection of uniQure's legitimate business interests in light of Employee's substantial role as an employee of uniQure.

h. **Reasonableness of Geographic Scope:** Employee agrees that the geographic scope on Employee's obligations set forth in this Section is both appropriate and reasonable.

i. **Tolling of Post-Employment Obligations:** If it is later determined by a court of competent jurisdiction that injunctive relief is warranted to prevent Employee from engaging in certain post-employment conduct, then the restrictive periods shall be tolled for the lesser of the period of time that Employee is determined by a court of competent jurisdiction to have had already been engaging in the prohibited conduct prior to the injunction and the maximum period allowed by law. The Parties intend that uniQure shall be entitled to full restrictive periods of post-employment conduct that does not breach or threaten to breach this Agreement.

6. **Specific Performance.** Employee acknowledges that a breach of this Agreement will cause irreparable injury to uniQure, that uniQure's remedies at law will be inadequate in case of any such breach or threatened breach, and that uniQure will be entitled to preliminary injunctive relief, without bond, and other injunctive relief in case of any such breach or threatened breach.

7. **Waivers.** The waiver by uniQure or Employee of any action, right or condition in this Agreement, or of any breach of a provision of this Agreement, shall not constitute a waiver of any other occurrences of the same event.

8. **Survival, Binding Effect.** This Agreement shall survive the termination of Employee's employment with uniQure regardless of the manner of such termination and shall be binding upon Employee and Employee's heirs, executors and administrators.

9. **Assignability by uniQure.** This Agreement is assignable by uniQure and inures to the benefit of uniQure, its subsidiaries, affiliated corporations, successors and assignees. This Agreement, being personal, is not assignable by Employee.

10. **Severability**. The covenants of this Agreement are intended to be separable, and the expressions used therein are intended to refer to divisible entities. Accordingly, the invalidity of all or any part of any section of this Agreement shall not render invalid the remainder of this Agreement or of such section. If, in any judicial proceeding, any provision of this Agreement is

found to be so broad as to be unenforceable, it is hereby agreed that such provision shall be interpreted to be only so broad as to be enforceable.

11. **Notice of Immunity Rights.** You shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of confidential information or a trade secret that is made in confidence to a Federal, State, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law. You shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of confidential information or a trade secret that is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the confidential information or trade secret to the attorney of the individual and use the confidential/trade secret information in the court proceeding, provided that the individual files any document containing the confidential information or trade secret under seal and does not disclose the confidential information or trade secret, except pursuant to court order.

12. **Protected Rights.** Nothing contained in this Agreement limits your ability to file a charge or complaint with the Equal Employment Opportunity Commission, the National Labor Relations Board, the Occupational Safety and Health Administration, the Securities and Exchange Commission or any other federal, state or local governmental agency or commission ("Government Agencies"). You further recognize that this Agreement does not limit your ability to communicate with any Government Agencies or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, including providing documents or other information, without notice to uniQure. This Agreement does not limit your right to receive an award for information provided to any Government Agencies.

13. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts, but not the Commonwealth's laws concerning conflict of laws, and shall be deemed to have been made in Massachusetts.

14. **Consent To Exclusive Jurisdiction/Venue**. The Parties hereby consent and submit to the exclusive jurisdiction of the federal and state courts in the Commonwealth of Massachusetts, and to exclusive venue in any Massachusetts federal court and/or Massachusetts state court located in Suffolk County, for any dispute arising from this Agreement.

15. **Covenant Not To Sue Outside Of Massachusetts.** Employee hereby agrees that Employee will not commence, prosecute, or assist in any way another person or entity to commence or prosecute, any legal action or other proceeding (including but not limited to a declaratory judgment action) against uniQure concerning a dispute arising from or relating to this Agreement in any forum or jurisdiction other than the state and federal courts in the state of Massachusetts.

16. **Breach/Right to Consult Legal Counsel.** In addition to uniQure's other rights and remedies, in the event that a court of law finally determines that Employee has breached Employee's obligations under this Agreement, to the fullest extent permitted by law, Employee will be liable for reasonable costs and attorneys' fees incurred by uniQure in connection with the enforcement of its rights under this Agreement. Employee acknowledges that Employee has been

advised of Employee's right to consult with legal counsel prior to signing this Agreement, and that Employee has had a full and adequate opportunity to do so.

17. **Waiver of Right to Jury Trial and Punitive Damages.** EACH PARTY WAIVES ANY RIGHT TO SEEK A JURY TRIAL AND TO CLAIM FOR OR RECOVER ANY PUNITIVE DAMAGES IN ANY PROCEEDING REGARDING ANY DISPUTE THAT MAY ARISE BETWEEN THEM.

18. **Entire Agreement, Amendments.** This Agreement constitutes the entire understanding of the parties with respect to its subject matter, supersedes any prior communication or understanding with respect thereto, and no modification or waiver of any provision hereof shall be valid unless made in writing and signed by all of the parties hereto.

19. **Return of uniQure Property and Confidential Information/Non-Deletion of Data.** Upon termination of Employee's engagement by uniQure, or at any other time upon the request of uniQure, Employee shall forthwith deliver to uniQure any and all documents, devices, equipment, keys, security passes, credit cards, hardware, data, databases, source code, object code, and data or computer programming code stored on an optical or electronic medium, and any copies thereof, relating to uniQure's business and affairs, including all materials that are in the possession of or under the control of Employee and that incorporate any Confidential Information or any reference thereto. Employee agrees to refrain from purging or deleting data from any uniQure-owned equipment, including email systems, in connection with Employee's termination. To the extent that Employee possesses any data belonging to uniQure on any storage media owned by Employee (for example, a home computer's hard disk drive, portable data storage device, etc.), Employee agrees that Employee will work cooperatively with uniQure to return such data and ensure it is removed from Employee's devices in a manner that does not adversely impact any personal data. Employee agrees not to take any steps to delete any uniQure data from any device without first obtaining uniQure's written approval. Employee agrees to cooperate with uniQure if uniQure requests written or other positive confirmation of the return or destruction of such data from any personal storage media.

20. **EMPLOYEE ACKNOWLEDGES AND AGREES THAT THE CONSIDERATION PROVIDED TO EMPLOYEE AT THE COMMENCEMENT OF EMPLOYMENT BEYOND THE EMPLOYEES BASE SALARY (INCLUDING, WITHOUT LIMITATION, ANY PROMISE OF STOCK OR OPTION GRANTS, SIGNING BONUS, OR OTHER BONUS) CONSTITUTE SUFFICIENT CONSIDERATION FOR EMPLOYEE'S AGREEMENT TO ABIDE BY THE TERMS OF THIS AGREEMENT**.

21. This Agreement may be executed in multiple counterparts, each of which shall be treated as an original. Facsimile signatures shall be valid and effective for all purposes.

[REMAINDER OF PAGE IS BLANK]

EMPLOYEE

By: /s/ Jonathan Garen
Name: Jonathan Garen

Date: February 28, 2020

uniQure, Inc.

By: /s/ Matthew Kapusta
Name: Matthew Kapusta

Date: February 28, 2020

EXHIBIT A

LIST OF EMPLOYEE DEVELOPMENTS
(*if none, please write the word "none" and sign below*)

None

Signature

/s/ Jonathan Garen
Jonathan Garen

Date: February 28, 2020

Employee Initials _____

EXHIBIT B

GENERAL RELEASE OF CLAIMS

In exchange for the promises and benefits set forth in Section 19 of the Employment Agreement between uniQure, Inc. and **Jonathan Garen** made as of **March 1, 2020,** and to be provided to me following the Effective Date of this General Release, I, **Jonathan Garen,** on behalf of myself, my heirs, executors and assigns, hereby acknowledge, understand and agree as follows:

1. On behalf of myself and my family, heirs, executors, administrators, personal representatives, agents, employees, assigns, legal representatives, accountants, affiliates and for any partnerships, corporations, sole proprietorships, or other entities owned or controlled by me, I fully release, acquit, and forever discharge uniQure, Inc., its past, present and future officers, directors, shareholders, agents, representatives, insurers, employees, attorneys, subsidiaries, affiliated corporations, parents, and assigns(collectively, the "Releasees"), from any and all charges, actions, causes of action, claims, grievances, damages, obligations, suits, agreements, costs, expenses, attorneys' fees, or any other liability of any kind whatsoever, suspected or unsuspected, known or unknown, which have or could have arisen out of my employment with or services performed for Releasees and/or termination of my employment with or termination of my services performed for Releasees (collectively, "Claims"), including:

a. Claims arising under Title VII of the Civil Rights Act of 1964 (as amended); the Civil Rights Acts of 1866 and 1991; the Americans With Disabilities Act; the Family and Medical Leave Act; the Employee Retirement Income Security Act; the Occupational Health and Safety Act; the Sarbanes-Oxley Act; the Massachusetts Law Against Discrimination (M.G.L. c. 151B, et seq., and/or any other laws of the Commonwealth of Massachusetts related to employment or the separation from employment;

b. Claims for age discrimination arising under the Age Discrimination in Employment Act of 1967 (as amended) ("ADEA") and the Older Workers Benefits Protection Act, except ADEA claims that may arise after the execution of this General Release;

c. Claims arising out of any other federal, state, local or municipal statute, law, constitution, ordinance or regulation; and/or

d. Any other employment related claim whatsoever, whether in contract, tort or any other legal theory, arising out of or relating to my employment with the Company and/or my separation of employment from the Releasees.

e. Excluded from this General Release are any claims that cannot be released or waived by law. This includes, but is not limited to, my right to file a charge with or participate in an investigation conducted by certain government agencies, such as the EEOC or NLRB. I acknowledge and agree, however, that I am releasing and waiving my right

to any monetary recovery should any government agency pursue any claims on my behalf that arose prior to the effective date of this General Release.

f. I waive all rights to re-employment with the Releasees. If I do apply for employment with the Releasees, the Releasees and I agree that the Releasees need not employ me, and that if the Releasees declines to employ me for any reason, it shall not be liable to me for any cause of action or damages whatsoever.

2. Release of Other Claims. I fully release, acquit, and forever discharge the Releasees from any and all other charges, actions, causes of action, claims, grievances, damages, obligations, suits, agreements, costs, expenses, attorneys' fees or any other liability of any kind whatsoever related to my employment, my employment agreement, my termination or the business of uniQure of which I have knowledge as of the time I sign this General Release.

3. I further acknowledge that I have received payment, salary and wages in full for all services rendered in conjunction with my employment with uniQure, Inc., including payment for all wages, bonuses, and accrued, unused paid time off, and that no other compensation is owed to me except as provided herein. I specifically understand that this general release of claims includes, without limitation, a release of claims for alleged wages due, overtime or other compensation or payment including any claim for treble damages, attorneys' fees and costs pursuant to the Massachusetts Wage Act and State Overtime Law M.G.L. c. 149, §§148, 150 *et seq.* and M.G.L. c. 151, §IA *et seq.* and I further acknowledge that I are unaware of any facts that would support a claim against the Released Parties for violation of the Fair Labor Standards Act or the Massachusetts Wage Act.

4. Notwithstanding anything to the contrary herein, nothing in this General Release shall be deemed to release any of the Releasees for: (i) any claim for the payment of compensation due under the Employment Agreement; (ii) any claim for any of the Accrued Benefits under the Employment Agreement; (iii) any claim for any separation benefit under Section 19 of the Employment Agreement including, without limitation, separation pay and accelerated vesting of stock options (as applicable and as defined in the Employment Agreement); or (iv) any rights to indemnification or coverage under a directors and officers liability insurance policy.

5. Restrictive Covenants. I acknowledge and agree that all of my obligations under the restrictive covenants in my Confidentiality, Developments, and Restrictive Covenants Agreement remain in full force and effect and shall survive the termination of my employment with the Releasees and the execution of this General Release.

6. Consultation with Attorney. I am advised and encouraged to consult with an attorney prior to executing this General Release. I acknowledge that if I have executed this General Release without consulting an attorney, I have done so knowingly and voluntarily.

7. Period for Review. I acknowledge that I have been given at least 21 days from the date I first received this General Release (or at least 45 days from the date I first received this General Release if my termination is part of a group reduction in force) during which to consider signing it.

8. Revocation of General Release. I acknowledge and agree that I have the right to revoke my acceptance of this General Release if I notify the Releasees in writing within 7 calendar days following the date I sign it. Any revocation, to be effective, must be in writing, signed by me, and either: a) postmarked within 7 calendar days of the date I signed it and addressed to the then current address of uniQure, Inc.'s headquarters (to the attention of the CEO); orb) hand delivered within 7 days of execution of this General Release to the uniQure, Inc.'s CEO. This General Release will become effective on the 8th day after I sign it (the "Effective Date"); provided that I have not timely revoked it.

I ACKNOWLEDGE AND AGREE THAT I HAVE BEEN ADVISED THAT THE GENERAL RELEASE IS A LEGAL DOCUMENT, AND I HAVE BEEN ADVISED TO CONSULT WITH AN ATTORNEY CONCERNING THIS GENERAL RELEASE. I ACKNOWLEDGE AND AGREE THAT I HAVE CAREFULLY READ AND FULLY UNDERSTAND ALL PROVISIONS OF THIS GENERAL RELEASE AND I AM VOLUNTARILY AND KNOWINGLY SIGNING IT.

IN, WITNESS WHEREOF, I have duly executed this Agreement under seal as of the _____ [day] of _____ [month],_____ [year]

Jonathan Garen

Exhibit 21.1

March 2, 2020

SUBSIDIARIES OF UNIQURE N.V.

Name of Subsidiary	Jurisdiction of Organization
uniQure biopharma B.V.	The Netherlands
uniQure IP B.V.	The Netherlands
uniQure Inc.	Delaware

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
uniQure N.V.:

We consent to the incorporation by reference in the registration statements (No. 333-225636) on Form S-3 and (No. 333-225629, No. 333-222051, No. 333-218005 and No. 333-197887) on Form S-8 of uniQure N.V. of our report dated March 2, 2020, with respect to the consolidated balance sheet of uniQure N.V. as of December 31, 2019, the related consolidated statements of operations and comprehensive loss, shareholders' equity, and cash flows for the year then ended, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2019, which report appears in the 2019 Annual Report on Form 10-K of uniQure N.V.. Our report refers to a change in accounting for leases due to the adoption of ASC Topic 842 Leases.

/s/ KPMG Accountants N.V.

Amstelveen, the Netherlands
March 2, 2020

Exhibit 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-225636) and Form S-8 (No. 333-225629, No. 333-222051, No. 333-218005 and No. 333-197887) of uniQure N.V. of our report dated February 28, 2019 relating to the financial statements, which appears in this Form 10-K.

Amsterdam, the Netherlands, March 2, 2020
PricewaterhouseCoopers Accountants N.V.

/s/ R.M.N. Admiraal RA

Exhibit 31.1

Certification of Chief Executive Officer

I, Matthew Kapusta, certify that:

1. I have reviewed this Annual Report on Form 10-K of uniQure N.V.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By: /s/ MATTHEW KAPUSTA

Matthew Kapusta
Chief Executive Officer
March 2, 2020

Exhibit 31.2

Certification of Chief Financial Officer

I, Matthew Kapusta, certify that:

1. I have reviewed this Annual Report on Form 10-K of uniQure N.V.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By: /s/ MATTHEW KAPUSTA

Matthew Kapusta
Chief Financial Officer
March 2, 2020

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with this Annual Report of uniQure N.V. (the "Company") on Form 10-K for the period ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Matthew Kapusta, Chief Executive Officer and Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1 the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2 the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By: /s/ MATTHEW KAPUSTA

Matthew Kapusta
Chief Executive Officer and
Chief Financial Officer
March 2, 2020

A signed original of this written statement required by Section 906 has been provided to uniQure N.V. and will be retained by uniQure N.V. and furnished to the SEC or its staff upon request.