eidos
a bridgebio company

2018 ANNUAL REPORT

PRECISION MEDICINE FOR TTR AMYLOIDOSIS.

Art | ATTRwt-CM patient

DEAR FELLOW SHAREHOLDERS,

Three years ago, we identified AG10 as a promising potential therapeutic for patients suffering from transthyretin (TTR) amyloidosis. We arrived at this insight by applying our fundamental precept of understanding the mechanism of a genetic disease, and seeking treatments that address the disease at its source.

In studying TTR amyloidosis, we saw a clear genotype-phenotype correlation – patients who inherit more destabilizing mutations are more likely to develop severe disease, meaning that a therapeutic agent should seek to stabilize as much TTR as possible. Further, we noted that TTR is highly evolutionarily conserved – indicating that a treatment which preserves TTR levels might be preferable to a treatment that eliminates the protein from the body.

Armed with this knowledge, our goal was to target destabilized TTR with a highly potent, small molecule stabilizer. AG10's rational design – structurally mimicking a rare TTR variant known to protect carriers from the development of disease – suggested it has the potential to completely stabilize even the most pathogenic TTR variants. Additionally, AG10 could be formulated as a simple oral tablet, an ideal product profile for chronic treatment in large patient populations.

Understanding the dramatic unmet need of over 400,000 patients worldwide with TTR amyloidosis, we have moved quickly to advance AG10 into and through clinical studies. To shepherd AG10 along this journey, we built a lean team of clinicians, scientists, and entrepreneurs – small, but rich in competence and experience – and empowered them to make decisions guided by that expertise. The team has risen to the task they have been set, and has achieved development milestones with alacrity and efficiency.

We began 2018 by completing our Phase 1 trial in healthy volunteers, where AG10 was well-tolerated at all doses. We also demonstrated signals of potential benefit, as evidenced by over 95% average stabilization of the TTR tetramer at steady state with the highest tested dose of AG10. Quickly thereafter, we initiated a Phase 2 trial in patients with mutant or wild-type TTR amyloid cardiomyopathy (ATTR-CM). We rapidly enrolled the trial and, within six months of initiation, presented the positive results as a Featured Science oral presentation at the American Heart Association Scientific Sessions. These results demonstrated that AG10 was well-tolerated in ATTR-CM patients, achieved near-complete TTR tetramer stabilization, and showed a statistically significant ($p<0.0001$) and dose-dependent increase in serum TTR concentrations in subjects treated with AG10 as compared to placebo.

To support our fast pace of work in advancing AG10's clinical development, we completed financings that will resource us to execute our Phase 3 clinical trial. First, we raised $64 million in Series B financing in April, and then we went public in June, raising over $120 million.

2018 was a banner year for Eidos, but we are most excited about the recent launch of the ATTRibute-CM Phase 3 clinical trial, which we announced earlier in 2019. We believe that the innovative two-part trial design we introduced will enable us to launch AG10 to patients 18 months earlier than if we had followed the trial design used for other compounds that have been studied to treat ATTR-CM. In addition, the first primary endpoint – change from baseline in the six-minute walk distance after 12 months of study – measures improvement in cardiovascular function. It therefore has very pragmatic implications for patients living better, rather than just longer.

Following the completion of the first part of the clinical trial, we will continue to study AG10 in those patients for another 18 months for a second primary endpoint of improvement in all-cause mortality and frequency of cardiovascular-related hospitalizations.

As we look forward to the rest of 2019, we anticipate reporting data from the ongoing open-label extension of our Phase 2 trial in ATTR-CM patients and initiating the Phase 3 ATTRibute-PN (polyneuropathy) study in the second half of this year.

Since the inception of Eidos, we have grown our team to over 25 people, and have purposely created an innovative and collaborative culture where the highest-quality science thrives and takes precedence. The organization that started out talking about the technical minutiae of hydrogen bonds at the bottom of the thyroxine binding pocket and copying a TTR-stabilizing mutation has moved through IND-enabling studies and the completion of two clinical trials in less than 12 months, and is now conducting registrational trials and preparing for the commercialization of AG10. The magnitude and velocity of our progress speaks to our organizational focus on our mission to bring a potential best-in-class medicine to ATTR patients in need.

We are grateful for the support of our investors on this mission, and we are confident that we will continue to move forward, seeking a disease-modifying treatment for TTR amyloidosis as fast as we can.

Sincerely,

Neil Kumar, Ph.D.
Chief Executive Officer

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, 2018

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 001-38533

EIDOS THERAPEUTICS, INC.

(Exact name of Registrant as specified in its Charter)

Delaware	**46-3733671**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
101 Montgomery Street, Suite 2550 San Francisco, CA	**94104**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (415) 887-1471

Securities registered pursuant to Section 12(b) of the Act: Common Stock, Par Value $0.001 Per Share; Registered on The Nasdaq Global Select Market.

Securities registered pursuant to 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 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405) is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 Exchange Act). YES ☐ NO ☒

The aggregate market value of the voting stock held by non-affiliates of the registrant was approximately $265.8 million as of June 30, 2018, based upon the closing sale price on The Nasdaq Global Select Market reported on June 29, 2018. Excludes an aggregate of 23,682,333 shares of the registrant's common stock held by officers, directors and affiliated stockholders. For purposes of determining whether a stockholder was an affiliate of the registrant at June 30, 2018, the registrant assumed that a stockholder was an affiliate of the registrant at June 30, 2018 if such stockholder (i) beneficially owned 10% or more of the registrant's common stock, as determined based on public filings and/or (ii) was an executive officer or director or was affiliated with an executive officer or director of the registrant at June 30, 2018. Exclusion of such shares should not be construed to indicate that any such person possesses the power, direct or indirect, to direct or cause the direction of the management or policies of the registrant or that such person is controlled by or under common control with the registrant.

The number of shares of Registrant's Common Stock outstanding as of April 9, 2019 was 36,819,049.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the Registrant's definitive Proxy Statement for the Registrant's 2019 Annual Meeting of Stockholders, to be filed subsequent to the date hereof with the Securities and Exchange Commission (SEC), are incorporated by reference into Part III of this report. Such proxy statement will be filed with the SEC not later than 120 days after the end of the Registrant's fiscal year ended December 31, 2018.

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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. 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. All statements other than statements of historical facts contained in this Annual Report on Form 10-K are forward-looking statements. In some cases, you can identify forward-looking statements by words such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “would,” or the negative of these words or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- the initiation, timing, progress and results of our ongoing and planned clinical trials, preclinical studies and research and development activities;
- our ability to advance our product candidate into, and successfully complete, clinical trials;
- our ability to advance our drug product manufacturing capabilities;
- the timing or likelihood of regulatory filings and approvals for our product candidate;
- the timing or success of commercialization of our product candidate, if approved;
- the pricing and reimbursement of our product candidate, if approved;
- the implementation of our business model, strategic plans for our business, product candidate and technology;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidate and technology;
- estimates of our expenses, future revenues, capital requirements and our needs for additional financing;
- the potential benefits of strategic collaboration agreements and our ability to enter into strategic arrangements;
- our ability to maintain and establish collaborations and licenses;
- developments relating to our competitors and our industry; and
- other risks and uncertainties, including those listed under Part I, Item 1A. Risk Factors.

Any forward-looking statements in this Annual Report on Form 10-K reflect our current views with respect to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under Part I, Item 1A. Risk Factors and elsewhere in this Annual Report on Form 10-K. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

This Annual Report on Form 10-K also contains estimates, projections and other information concerning our industry, our business, and the markets for certain diseases, including data regarding the estimated size of those markets, and the incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources.

PART I

Item 1. Business.

Overview

We are a clinical stage biopharmaceutical company focused on addressing the large and growing unmet need in diseases caused by transthyretin, or TTR, amyloidosis, or ATTR. We seek to treat this well-defined family of diseases by targeting them at their collective source by stabilizing TTR. TTR is a protein that occurs naturally in the form of a tetramer (a molecular structure consisting of four identical subunits, or monomers) and performs multiple beneficial roles, including the transport of essential hormones and vitamins. Over 25 years of research have shown that ATTR is uniformly driven by destabilization of the TTR tetramer, stemming from either specific gene mutations or aging. TTR destabilization drives an irreversible dissociation of the tetramer into monomers, which subsequently aggregate and deposit predominantly in the heart and peripheral nervous system, leading to organ damage, loss of organ function, and eventual death if left untreated. We are building upon our significant mechanistic understanding of ATTR to develop a potentially disease-modifying treatment for this family of diseases.

Our product candidate, AG10, is an orally-administered small molecule designed to potently stabilize tetrameric TTR, thereby halting at its outset the series of molecular events that give rise to ATTR. Our approach to the treatment of ATTR is designed to mimic a naturally-occurring variant of the TTR gene (T119M) that is considered a “rescue mutation” because it has been shown to prevent ATTR in individuals carrying pathogenic, or disease-causing, mutations in the TTR gene. We believe this specific binding mode underlies the positive results of our Phase 1 and Phase 2 clinical trials of AG10. In our Phase 1 clinical trial in healthy volunteers, AG10 was observed in the highest dose cohort to achieve near-complete stabilization of tetrameric TTR over the dosing period. Our Phase 2 clinical trial in patients with symptomatic ATTR cardiomyopathy demonstrated greater than 90% average TTR stabilization in all actively-treated subjects combined. Treatment with AG10 also significantly increased tetrameric TTR concentrations, a biomarker associated with survival in ATTR cardiomyopathy patients, by 50% and 36% in subjects administered 800 mg or 400 mg twice daily, respectively (both $p < 0.0001$ vs placebo). AG10 was well-tolerated without drug-related findings of clinical concern in both Phase 1 and Phase 2 clinical trials. Based on these data, we are enrolling patients in a Phase 3 clinical trial of AG10 in patients with ATTR cardiomyopathy and are planning to initiate a Phase 3 clinical trial of AG10 in patients with ATTR polyneuropathy in 2019.

In October 2018, the U.S. Food and Drug Administration, or FDA, and the European Medicines Agency, or EMA, granted orphan drug designation to AG10 for the treatment of ATTR. The EMA also granted a product-specific pediatric investigational plan waiver for AG10.

Transthyretin amyloidosis (ATTR)

ATTR represents a significant unmet need, with a comparatively large patient population in the context of genetic diseases with an inadequate current standard of care. ATTR is categorized according to its genetic basis and primary clinical manifestation:

- wild-type ATTR cardiomyopathy, or ATTRwt-CM, which results from an age-related process;
- mutant ATTR cardiomyopathy, or ATTRm-CM; and
- ATTR polyneuropathy, or ATTR-PN.

The worldwide prevalence of each disease is approximately 400,000, 40,000, and 10,000, respectively, although we believe the cardiomyopathic forms of the disease are significantly underdiagnosed.

All three forms of ATTR are progressive and fatal. ATTRwt-CM and ATTRm-CM patients generally present with symptoms later in life (age 50+) and have median life expectancies of three to five years from diagnosis. ATTR-PN either presents in a patient’s early 30s or later (age 50+), and results in a median life expectancy of five to ten years from diagnosis. Progression of all forms of the disease causes significant morbidity, impacts productivity and quality of life, and creates a significant economic burden due to the costs associated with progressively greater patient needs for supportive care. As the disease progresses, ATTRwt-CM and ATTRm-CM patients become increasingly difficult to medically manage and may require frequent hospitalizations and repeated interventions. ATTR-PN patients experience gradual loss of the ability to walk without assistance, and autonomic nervous system function affecting digestion and blood pressure over time, requiring increasing levels of supportive care.

The population of diagnosed ATTRwt-CM and ATTRm-CM patients is growing due to increasing disease awareness and a shift to an accurate and reliable non-invasive diagnostic approach, which allows cardiologists to use a well-established medical imaging modality and readily available blood tests to diagnose ATTR instead of using the previously required, invasive diagnostic method of heart biopsy. We believe this enables both earlier diagnosis and the identification of previously misdiagnosed patients. Specifically, recent literature suggests that a sizeable proportion (12%-19%) of patients diagnosed with heart failure with preserved ejection fraction, or HFpEF, which represents about half of the 6-7 million estimated people with heart failure in the United States alone, may in fact have ATTRwt-CM or ATTRm-CM but in the past have not been diagnosed as such.

AG10 and our therapeutic hypothesis

We are developing AG10, an orally-administered, small molecule stabilizer of tetrameric TTR, to treat ATTR at its source. Over the past decade, research has suggested that agents that bind and stabilize TTR, as measured by established ex vivo assays, can lead to improved clinical outcomes. The data supporting this hypothesis include genetic validation and clinical data in both ATTR-PN and ATTR-CM. The concept of tetrameric TTR stabilization as a potentially viable therapeutic approach originated from our understanding of the molecular pathogenesis of ATTR and the mechanistic details of a naturally occurring rescue mutation in the TTR gene, known as the T119M mutation, that "super-stabilizes" the tetramer. T119M has been observed to prevent the dissociation of TTR tetramers into monomers; T119M tetramers dissociate approximately 40-fold more slowly than wild-type tetramers in biochemical assays. The increased stability of the T119M variant confers protection against ATTR such that, in individuals who carry a highly penetrant, TTR-destabilizing mutation, co-inheritance of T119M protects them against the development of ATTR. This stabilization hypothesis is further supported by clinical trials performed with another TTR stabilizer, tafamidis, in ATTR-CM as well as diflunisal, another TTR stabilizer that is approved as a non-steroidal anti-inflammatory drug, or NSAID, in ATTR-PN.

Summary of our clinical and preclinical results

We believe the clinical and preclinical data generated to date by AG10 and other small molecule stabilizers strongly support AG10's development as a preferred therapeutic to treat ATTR, as outlined below.

- Previous studies of small molecule TTR stabilizers have validated the proposed therapeutic mechanism in both ATTR-CM and ATTR-PN. A Phase 3 study of tafamidis in ATTR-CM patients demonstrated that patients receiving tafamidis had lower all-cause mortality (29.5% vs 42.9%) and cardiovascular-related hospitalizations (0.48 per year vs. 0.70 per year) than patients receiving placebo. While an encouraging result, the high residual morbidity and mortality in the treatment group in that trial suggests the potential for additional benefit.
- Both tafamidis and diflunisal have been studied in randomized, Phase 2/3 or 3 clinical trials in ATTR-PN and support the hypothesis that increasing levels of TTR stabilization lead to increasing clinical benefit. Tafamidis, which stabilized approximately 45% of TTR at the 20mg dose tested in ATTR-PN, slowed the progression of disease, although it did not achieve statistical significance on its primary endpoint. Diflunisal, which in our preclinical studies stabilized approximately 75% of TTR at the 250mg twice daily dose tested in ATTR-PN, slowed the progression of disease to a greater degree relative to placebo and met statistical significance on the primary endpoint of the study.
- Cross-trial comparison of clinical trials suggest that AG10 provides a higher degree of stabilization than tafamidis or diflunisal. In both our Phase 1 clinical trial in healthy volunteers and Phase 2 clinical trial in ATTRwt-CM and ATTRm-CM patients, we observed greater than 90% average TTR stabilization at steady-state in patients receiving 800 mg of AG10 twice daily.
- In our Phase 2 clinical trial, AG10 treatment significantly raised serum TTR concentrations ($p < 0.0001$ vs placebo), a biomarker associated with increased survival in ATTR-CM patients, by 50% and 36% in subjects administered 800 mg twice daily and 400 mg twice daily, respectively, at Day 28. All AG10-treated patients had tetrameric TTR levels in the normal clinical range at Day 28. As a comparison, ATTRwt-CM patients treated with tafamidis at 20 mg daily saw an increase in serum TTR concentrations of 17% at Day 28. Given that increased serum TTR levels are associated with reduced mortality in ATTRwt-CM patients, the observation of a greater effect in AG10-treated patients may predict a larger long-term clinical benefit.
- AG10 was well-tolerated without any drug-related safety findings of clinical concern in both Phase 1 and Phase 2 studies. In our Phase 2 clinical trial, AG10 was well tolerated in symptomatic ATTRwt-CM and ATTRm-CM patients receiving 400 mg or 800 mg twice daily for 28 days. In our preclinical studies, AG10 exhibited a greater than 50-fold therapeutic window between its target therapeutic blood level and those concentrations associated with observed, dose-limiting animal toxicity.

- We believe AG10's comparatively higher TTR stabilization is attributable to advantages in AG10's binding mode, specificity for binding to TTR relative to other plasma proteins and ability to stabilize a wide range of TTR variants.
    - **Binding mode:** X-ray crystallography demonstrates that AG10 uniquely drives hydrogen bonding at the bottom of the thyroxine binding pocket of the TTR molecule to help hold tetrameric TTR together, mimicking the binding mode of the naturally-occurring T119M rescue mutation. To our knowledge, AG10 is the only TTR stabilizer in clinical development or clinical use that has been observed to mimic this super-stabilizing mechanism of the naturally-occurring rescue mutation.
    - **TTR specificity:** Our preclinical studies support that AG10's binding to TTR may be highly specific and not significantly affected by the presence of additional plasma proteins. The free fraction observed for AG10 was 3.6% in our preclinical studies. In contrast, published regulatory documents support that tafamidis also binds to the highly abundant plasma protein albumin, which competes with tafamidis' ability to bind and stabilize TTR. The free fraction observed for tafamidis was less than 0.5% from the reported literature.
    - **TTR mutant binding**: In our preclinical studies, 10 μM AG10 also resulted in greater than 85% TTR stabilization across a range of mutations that lead to ATTRm-CM or ATTR-PN, which represent over 70% of all patients with mutation-driven ATTR.

Based on these data, we met with the FDA including in an End of Phase 2 meeting in November 2018 and have begun enrolling patients in a Phase 3 clinical trial of AG10 in ATTR-CM patients (ATTRibute-CM). We plan to initiate a second Phase 3 clinical trial of AG10 in ATTR-PN patients (ATTRibute-PN) in 2019.

We have developed multiple tablet formulations for AG10 and have produced over 200 kg of AG10 conforming with the FDA's current Good Manufacturing Practice, or cGMP, manufacturing requirements.

We are developing AG10 to treat ATTR in the clinical trials shown in the table below.

Indication	Worldwide prevalence	Stage	Endpoint and biomarkers
ATTR-CM	400,000 (ATTRwt-CM) 40,000 (ATTRm-CM)	Phase 3 ongoing	Change in six-minute walk distance (6MWD); mortality; cardiovascular hospitalizations; safety and tolerability;
		Phase 2 open label extension (OLE) ongoing	Safety and tolerability; TTR stabilization; key cardiac biomarkers
ATTR-PN	10,000	Phase 3 initiation anticipated in 2019	Neuropathy impairment score (mNIS+7); Safety and tolerability; Norfolk quality of life score; pharmacokinetics; TTR stabilization

Our strategy

Our goal is to be a leader in developing and commercializing disease-modifying therapeutics to treat ATTR. The key components of our strategy are to:

- ***Rapidly develop AG10 for the treatment of ATTR-CM.*** We have completed Phase 1 and Phase 2 clinical trials of AG10 in healthy volunteers and in symptomatic ATTR-CM patients, respectively. AG10 was well tolerated in both trials and, at 800 mg twice daily, achieved near-complete stabilization of TTR over the entire dosing interval. In our Phase 2 clinical trial, AG10 treatment also significantly raised serum TTR concentrations ($p < 0.0001$ vs placebo), a biomarker associated with survival in ATTR-CM patients, by 50% and 36% in subjects administered 800 mg twice daily and 400 mg twice daily, respectively, at Day 28. Based on these data, we are currently enrolling a Phase 3 clinical trial of AG10 in ATTR-CM patients (ATTRibute-CM). ATTRibute-CM is planned to enroll approximately 510 subjects with symptomatic ATTR-CM, including both wild-type and mutant TTR carriers. In Part A, change in 6MWD at 12 months will be compared between treatment and placebo groups as a potential registrational endpoint. In Part B, the study will continue for a total duration of 30 months, at which point all-cause mortality and cardiovascular hospitalizations will be compared between treatment and control groups.

- ***Advance AG10 for the treatment of ATTR-PN.*** ATTR-PN is caused by the destabilization of tetrameric TTR and deposition of TTR amyloid in the peripheral nervous system. Based on our preclinical and preliminary clinical observations that AG10 potently stabilizes TTR in human serum (at blood levels roughly equal to the level of available TTR binding sites), we also plan to develop AG10 for ATTR-PN. Subject to authorization from applicable regulatory authorities, we plan to initiate a Phase 3 clinical development program for AG10 in ATTR-PN in 2019.
- ***Expand our leadership role in the ATTR community.*** We have established strong relationships with academics, clinical investigators, and patient advocacy groups in the ATTR field. Working closely with these key stakeholders, we aim to advance the understanding of ATTR in terms of its epidemiology, diagnosis, natural history, and treatment. Further, we plan to support clinical scientific conferences, diagnostic method and other training programs, patient and family advocacy and support organizations, and community-wide advances to increase awareness of this family of diseases among physicians and patients.
- ***Retain development and commercialization rights to AG10 in core strategic markets.*** We plan to develop and commercialize AG10 in major markets. We believe we can devise time- and cost-efficient strategies to develop, and to obtain regulatory approvals for, novel product candidates such as AG10. We have assembled an experienced team with a successful track record in pharmaceutical development, regulatory strategy and execution of global clinical trials. Given the concentrated market and increasing levels of disease awareness, we intend to establish a small and focused sales force targeting key cardiology and neurology specialists in major markets, and we may evaluate opportunities to establish strategic partnerships in additional markets.
- ***Evaluate opportunities to expand the scope of our development candidate portfolio.*** We may also form collaborative alliances to expand our capabilities and development opportunities into new therapeutic areas and potentially accelerate commercialization in select geographic markets. Consistent with our strategy and that of our parent company, BridgeBio, we may in-license or acquire additional assets targeting well-defined inherited diseases at their source that complement our primary focus on ATTR. While complementary approaches to the treatment of ATTR are the most synergistic opportunity, building on our deep understanding of ATTR, we may also pursue additional research and development opportunities as well as the acquisition or in-licensing of adjacent precision cardiovascular medicine assets.

ATTR background and disease pathology

ATTR is a progressive, fatal disease caused by the accumulation of amyloid fibrils in vital organs as a result of the destabilization of TTR. TTR is named for its role in the *trans*port of *thy*roxine (thyroid hormone) and *retin*ol (vitamin A). Beyond its activity as a transport protein, multiple lines of evidence point to a larger role of TTR in human physiology. First, TTR is highly conserved evolutionarily and is present in all vertebrates and many invertebrates. In humans, no mutations resulting in reduced or complete elimination of TTR have been described. In a 2013 study of over 68,000 participants in Denmark over an average 32 years of clinical follow-up, the naturally-occurring T119M mutation led to higher circulating TTR concentrations, protection against a range of cerebrovascular events, especially fatal or debilitating stroke, and a 5-10 year increase in life expectancy relative to the general population. In contrast to these beneficial effects, the destabilization of TTR can lead to ATTR. With an estimated prevalence of over 450,000 patients worldwide, ATTR is one of the most prevalent genetic diseases, although each of its clinical forms is currently considered to be an orphan disease indication.

TTR circulates as a tetramer containing two thyroxine binding sites; TTR monomers do not bind these ligands by themselves. ATTR can result from either defects in protein handling associated with aging (driving wild-type ATTR) or genetic mutations (mutant ATTR), which destabilize TTR and drive its dissociation into TTR monomers. The monomers subsequently aggregate into complexes that are deposited in tissues, including the heart and peripheral nerves. Left untreated, these deposits can cause severe organ damage, loss of organ function and eventual death. Clinically, ATTR primarily presents as either a cardiomyopathy, or ATTR-CM, a form of heart failure, or as a peripheral polyneuropathy, or ATTR-PN, a neurodegenerative disease.

ATTR-CM is an infiltrative, restrictive cardiomyopathy characterized by progressive right and left heart failure, initially with preserved ejection fraction. Patients suffering from ATTR-CM generally become symptomatic at age 50 or older. Patients with ATTR-CM experience typical symptoms of heart failure, which may include persistent fatigue, dizziness, shortness of breath, edema (swelling of the legs), and a disproportionate age-related incidence of atrial fibrillation with its associated risk of stroke. As the disease progresses, patients often require frequent hospitalization due to decompensated congestive heart failure. ATTR-CM patients are challenging to medically manage, as commonly used treatments for other forms of heart failure, like ACE inhibitors and beta blockers, can be ineffective or harmful due to the specific effects of ATTR-CM on the ability of the heart to relax and fill with

fresh blood between heartbeats, and the frequent involvement of the heart's electrical conduction system and autonomic control of blood pressure, all affecting patients' ability to maintain cardiac output. As a result, ATTR-CM patients also have a high associated risk of developing both heart block and atrial fibrillation, requiring permanent pacemaker and anticoagulant therapy to prevent stroke, respectively.

ATTR-CM can develop in older patients in whom TTR is destabilized as part of the natural aging process, a condition known as ATTRwt-CM. ATTR-CM can also be caused by genetic mutations that destabilize TTR, known as ATTRm-CM. ATTRm-CM may have an earlier age of onset and progress more rapidly than ATTRwt-CM. The Transthyretin Cardiac Amyloidosis Study published in 2012 found that the median survival from diagnosis for ATTRwt-CM and ATTRm-CM patients was 43 months and 26 months, respectively.

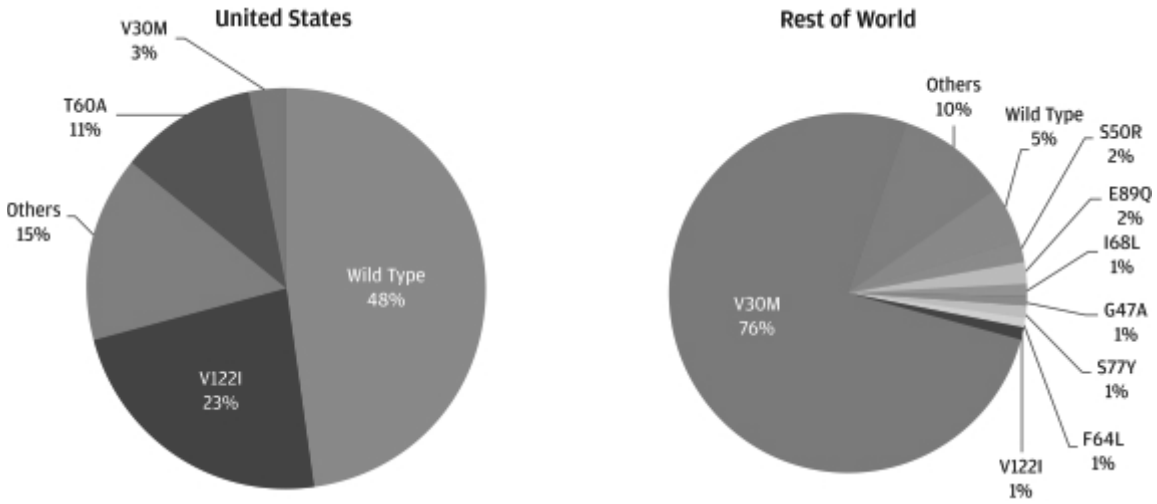
The numbers of diagnosed ATTRwt-CM and ATTRm-CM patients are estimated to be 400,000 and 40,000 worldwide, respectively. We believe both forms of ATTR-CM are under-diagnosed due to limited disease awareness and historical reliance on invasive diagnostic techniques. Until recently, a cardiac biopsy was required to make the definitive diagnosis of ATTR-CM. However, non-invasive nuclear medicine imaging agents (technetium-labelled pyrophosphate or bis-phosphonates), coupled with blood tests, have demonstrated the ability to detect ATTR-CM with 99% sensitivity and specificity. These imaging agents allow physicians suspecting ATTR-CM to readily diagnose it in patients without the need for a heart biopsy. In addition, we believe the development of new potential treatments for ATTR has also raised awareness of ATTR amongst physicians, prompting them to consider the diagnosis when evaluating patients with an initial recognition of heart failure, especially HFpEF. These two factors have the potential to lead to broader adoption of a noninvasive diagnostic algorithm and earlier identification of the disease. We are actively supporting efforts to establish training and certification in the use of the noninvasive algorithm with key opinion leaders. Recent clinical reports have suggested significant prevalence of ATTR-CM in multiple cardiac disease and other populations. For example, ATTR-CM has been detected in an important proportion of patients suffering from associated conditions such as carpal tunnel syndrome, and as a comorbid condition in patients with aortic stenosis or those presenting for hip and knee replacement surgery.

There are over 140 known pathogenic mutations in the TTR gene that can lead to destabilization of the tetramer, driving ATTRm-CM. The most prevalent TTR mutation in the United States, V122I, is associated with an increased risk of developing ATTRm-CM. The V122I mutation is present in approximately 3.4% of African Americans and may be even higher in related Afro-Caribbean populations living in the Americas and Europe.

Clinically, ATTR also presents as ATTR-PN, a neurodegenerative disease, in individuals carrying pathogenic TTR mutations. Patients suffering from ATTR-PN generally become symptomatic between ages 30 and 50. While the median survival for patients diagnosed with ATTR-PN is only five to ten years, the various disease complications from initial onset create a substantial economic and social burden on patients, caregivers and the entire healthcare system. In ATTR-PN patients, symptoms generally begin with pain in the extremities from nerve damage, loss of sensation, limb weakness, and GI dysfunction leading to malnutrition. Patients generally lose motor control (muscle strength, tone and bulk) and sensation in their extremities, starting with the feet and ascending to involve the lower and upper legs followed by the hands and arms. As the disease progresses up the legs to the body, patients lose the ability to walk without assistance, and eventually lose the ability to control basic motor and sensory functions. Loss of sensation exposes patients to the risk of so-called insensate trauma, or the inability to notice that they have sustained injuries to their hands and feet, which may become complicated by infection and require hospitalization for intravenous therapy or amputation.

ATTR-PN is caused by pathogenic, destabilizing mutations in the TTR gene and affects approximately 10,000 patients worldwide. The V30M mutation is the most prevalent mutation associated with ATTR-PN and is endemic in certain areas of Portugal, Sweden and Japan, where it has arisen independently as a founder mutation, as illustrated in the figure below.

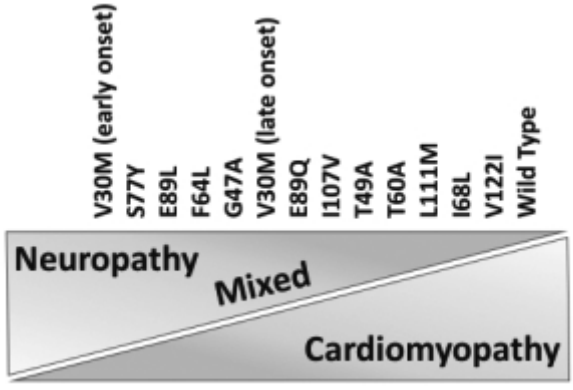
Distribution of ATTR mutations in the United States and the rest of world in the THAOS Registry



Source: (Maurer, Hanna, Grogan, Dispenzieri, Witteles, Drachman, Judge, Lenihan, Gottlieb, Shah, Steidley, Ventura, Murali, Silver, Jacoby, Fedson, Hummel, Kristen, Damy, Planté-Bordeneuve, et al., 2016)

Mutant ATTR (ATTRm) spans a spectrum of phenotypic expression from predominantly cardiomyopathic (as in the case of the prevalent mutation V122I) to predominantly polyneuropathic (as in the case of V30M, especially the early onset subset), with many mutations driving a mixed clinical phenotype, as illustrated in the figure below. The symptoms associated with wild-type ATTR (ATTRwt) are predominantly cardiovascular, but may include connective tissue disease such as carpal tunnel syndrome.

Spectrum of Mutations (non-exhaustive) and Phenotypes in ATTR



Source: adapted from (Semigran, 2016)

Unmet medical need in ATTR

Despite recent progress in the development of disease-modifying therapies for ATTR, we believe clinical unmet need remains. In ATTR-PN, treatment options had historically been limited to symptomatic relief, with liver transplantation being the only definitive treatment to arrest the progression of disease. This therapy, however, is complicated by limited organ availability, the need for lifelong immunosuppression, surgical risk (especially in patients with substantial cardiac involvement) and limited efficacy, as wild-type TTR amyloid continues to contribute to disease progression in many patients after transplant.

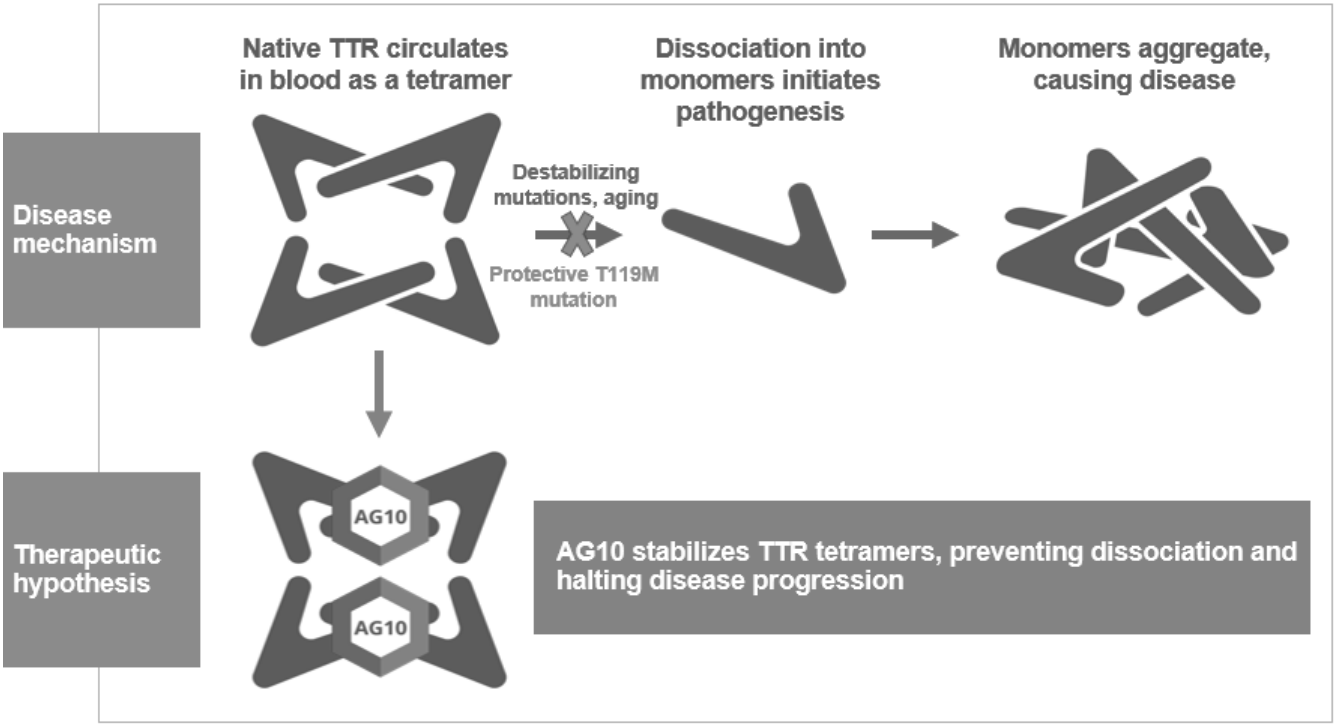
Recent advancements have been made in the development of disease-modifying therapies for ATTR-PN. Phase 3 clinical trials of TTR gene-silencing, or “knockdown” agents (patisiran and inotersen) demonstrated clinically important and statistically significant results in the treatment of ATTR-PN, and both agents have now been approved by the European Medicines Agency, or EMA, and FDA for the treatment of ATTR-PN. Regulatory

authorities outside of the United States, including the EMA, have also approved tafamidis for the treatment of ATTR-PN, although its single Phase 3 clinical trial in ATTR-PN patients did not meet its primary endpoint. Tafamidis was approved by the European Union in 2011 and Japan in 2013. The FDA, in contrast, requested additional trials to be completed as a prerequisite for any resubmission for U.S. approval. Additionally, diflunisal, a generic, non-steroidal anti-inflammatory drug, or NSAID, approved by the FDA to treat pain and inflammation, may be prescribed by physicians for ATTR patients, despite not having been approved for the treatment of ATTR. Diflunisal exhibits some biochemical properties as a TTR stabilizer and has been studied in a randomized study in ATTR-PN patients funded by the National Institutes of Health. The use of diflunisal is limited, however, by its Boxed Warning in the U.S. Product Insert (label) listing increased risks of gastrointestinal bleeding, thromboembolic events (clotting and blood vessel blockage), and kidney failure. These are all “on-target” complications related to diflunisal’s intended inhibition of the cyclooxygenase, or COX, enzyme. Given the overlap between its labeled risk of serious adverse effects and the prominent cardiovascular and renal manifestations in these patients, its usage is limited in the treatment of ATTR-CM. While diflunisal is commercially available as a generic, prescription-only medical product in the United States, it is generally unavailable in the European Union and elsewhere.

More limited progress has been made in the development of a safe and effective, disease-modifying treatment of ATTRwt-CM and ATTRm-CM. Recently, Pfizer Inc. announced that its Phase 3 clinical trial (ATTR-ACT) of tafamidis in ATTRwt-CM and ATTRm-CM patients had met its primary endpoint, a reduction in the combination of all-cause mortality and cumulative incidence of cardiovascular-related hospitalizations. In January 2019, Pfizer reported that the FDA accepted its two NDAs for tafamidis to treat ATTR-CM. The only Phase 3 clinical trial of a TTR knockdown agent in patients with diagnosed cardiomyopathy, the ENDEAVOUR study of revusiran sponsored by Alnylam Pharmaceuticals, Inc., was halted due to an imbalance of deaths in the active treatment arms. Given the significant and growing prevalence of ATTRwt-CM and ATTRm-CM, and the limitations of marketed drugs and product candidates for all forms of ATTR, we believe there is a significant unmet need for an efficacious therapeutic agent that targets the disease at its source.

AG10—our differentiated solution for the treatment of ATTR

AG10 is an orally-administered small molecule designed to treat ATTR at its source by stabilizing tetrameric TTR, thereby halting at its outset the series of molecular events that give rise to ATTR. The following graphic illustrates the disease mechanism of ATTR and our therapeutic hypothesis.



Multiple therapeutic approaches are in clinical and preclinical development for the treatment of ATTR. These therapeutic approaches are referred to as stabilization, knockdown and clearance.

- ***Stabilization***. Small molecule stabilizers, including AG10, target the disease at its source by stabilizing TTR and inhibiting the disease-initiating step of amyloid formation (i.e., the dissociation of tetrameric TTR into monomers).
- ***Knockdown***. Knockdown approaches inhibit the synthesis of TTR by the liver, thereby reducing the amount of circulating tetrameric TTR and presumably the amount of TTR monomers available to form amyloid deposits.
- ***Clearance***. Agents target the amyloid formation process further downstream and/or established amyloid deposits. The goal of these agents is to disrupt the formation of circulating TTR amyloid precursors (aggregates of misfolded monomers) and/or clear amyloid fibrils that have already been deposited.

We believe that the TTR stabilization approach targets ATTR at its source and represents a validated therapeutic approach to prevent or slow disease progression. In addition, we believe our therapeutic approach has the potential to complement other approaches to treating ATTR.

The therapeutic approach of AG10 leverages over 25 years of research understanding the molecular mechanism of ATTR and the rational design using structural biology by our founders at Stanford University. We believe the therapeutic hypothesis underlying TTR stabilization is validated by human genetic and clinical data, as follows:

- Genetic data demonstrate not only how the disease is caused (through mutations that destabilize the TTR tetramer) but also how the disease is ameliorated (through mutations that super-stabilize tetrameric TTR). Furthermore, beneficial effects of the naturally-occurring, stabilizing mutation T119M have been demonstrated in both a diseased and healthy population;
- Tafamidis, a TTR stabilizer, reportedly met its primary endpoint in the reduction in the combination of all-cause mortality and cumulative incidence of cardiovascular-related hospitalizations in ATTR-CM patients in Pfizer's global, Phase 3 ATTR-ACT clinical trial.

Genetic validation of TTR stabilization

The concept of TTR tetramer stabilization as a viable therapeutic approach originated from our understanding of the molecular pathogenesis of ATTR, as well as a naturally-occurring rescue mutation. The molecular pathogenesis of ATTR has been described in over 25 years of scientific publications. Specifically, ATTR results from the dissociation of native, tetrameric TTR into monomeric subunits that misfold and aggregate as TTR amyloid. There are over 140 known pathogenic, missense mutations that destabilize TTR. On the other hand, there exist naturally occurring mutations that protect against disease, and have been shown to stabilize TTR. A naturally-occurring, gain-of-function rescue mutation, T119M, results in the super-stabilization of TTR and prevents ATTR in compound heterozygotes carrying the V30M disease-causing mutation, as reported by Coelho et al. in 1996 and Hammarstrom et. al in *Science* in 2001. The T119M mutation, when carried in otherwise healthy individuals, is also associated with both a lower risk of cerebrovascular events and an increased life expectancy of five to ten years compared to healthy non-carriers, and is correlated with 17% higher circulating levels of TTR. This result was identified by Hornstrup et. al. in a 2013 study of over 68,000 individuals in Denmark over an average 32 years of clinical follow-up. AG10's mode of binding is designed to mimic the stabilizing mechanism of this rescue mutation, which we believe provides a mechanistic advantage to slow or halt the progression of ATTR. In addition, the scientific literature suggests that this mode of binding may be unique to AG10.

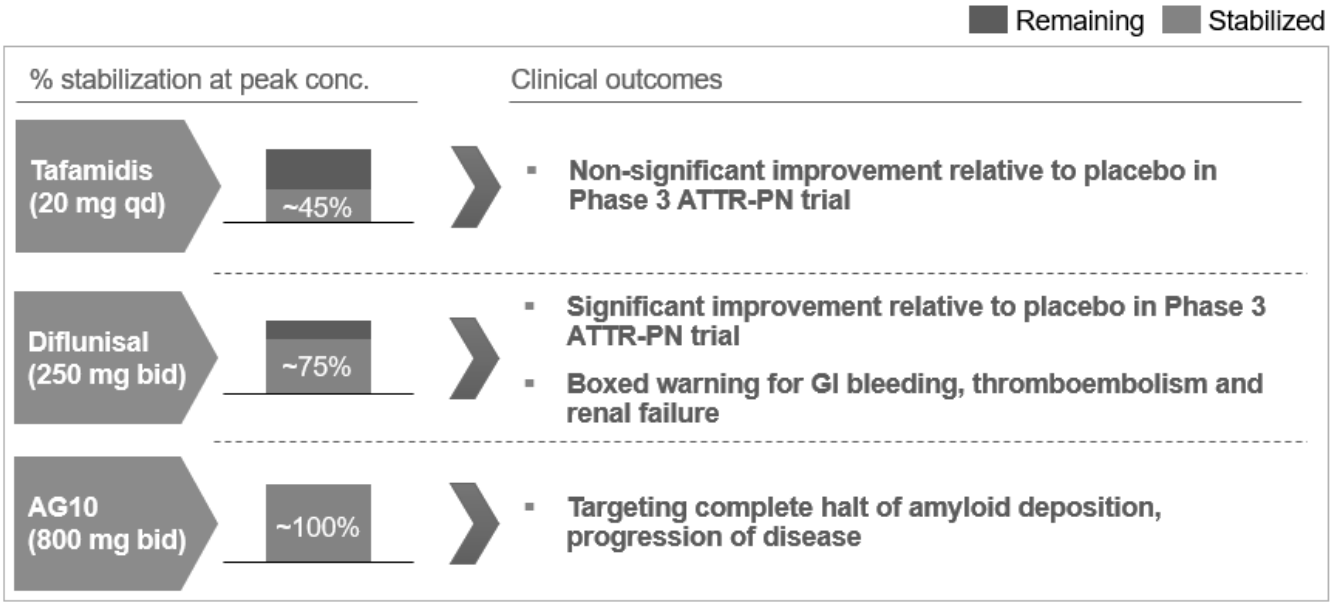
Clinical validation of TTR stabilization

In March 2018, Pfizer announced that tafamidis, a TTR stabilizer, met its primary endpoint of a reduction in the combination of all-cause mortality and cumulative incidence of cardiovascular-related hospitalizations in both types of ATTR-CM patients in the Phase 3 ATTR-ACT study. The trial enrolled 441 patients including 106 (24%) ATTRm-CM and 335 (76%) ATTRwt-CM patients with New York Heart Association (NYHA) Class I-III symptoms. Subjects were randomized to placebo, 20 mg tafamidis, or 80 mg tafamidis in a 2:1:2 ratio. Rates of all-cause mortality and cardiovascular hospitalizations were reduced by approximately 30% in tafamidis-treated subjects relative to subjects receiving placebo. Tafamidis treatment was also associated with a slower rate of decline in 6-minute walk distance and quality of life as measured by the Kansas City Cardiomyopathy Questionnaire-Overall Summary. Tafamidis is the first therapeutic to show a benefit in a prospective ATTR-CM clinical trial and validates the hypothesis that TTR stabilization can lead to a meaningful clinical benefit in this population. Further, we believe that the reported reduction in mortality and cardiovascular hospitalizations observed in a randomized clinical trial of a TTR stabilizer, combined with the convenience of oral dosing, supports potential first line usage of oral TTR stabilizers in ATTR-CM.

The reported outcomes from previous clinical trials with TTR stabilizers in ATTR-PN further support the TTR stabilization approach and suggest that increasing levels of TTR stabilization may lead to increasing levels of clinical benefit. To support this hypothesis, we evaluated each of three small molecule stabilizers (tafamidis, diflunisal and AG10) in head-to-head, established in vitro TTR stabilization assays (Western blot and FPE) and compared these results to the reported clinical outcomes, leading to the following observations:

- Tafamidis, at the reported mean peak plasma concentration achieved at steady state on a 20 mg daily oral dose in healthy volunteers, was observed to stabilize approximately 45% of TTR in our in vitro studies. At this dose, tafamidis demonstrated a non-statistically significant improvement relative to placebo in ATTR-PN patients in a Phase 3 clinical trial conducted by FoldRx Pharmaceuticals Inc. (acquired by Pfizer Inc.).
- Diflunisal, a generic NSAID, stabilized TTR by approximately 75% in our in vitro studies and showed a statistically significant improvement relative to placebo in ATTR-PN patients in a randomized, controlled study.
- AG10 achieves greater than 90% TTR stabilization in in vitro assays at concentrations achieved at trough in our clinical studies.

The following table summarizes the levels of TTR stabilization observed to date in our preclinical stabilization assays of tafamidis, diflunisal and AG10, as compared to their reported clinical outcomes in ATTR-PN:



In the table above, the figures for percent stabilization at peak concentration represent values averaged between Western blot and FPE assays, except for diflunisal, which only includes data from Western blot assays. We used commercially available tafamidis in the Western blot assays and synthesized tafamidis in the FPE assays. Although we believe our preclinical observations described above are consistent with the reported clinical literature, the use of synthesized tafamidis in our preclinical studies may not be indicative of results that would be obtained using commercially-available tafamidis.

AG10

Our clinical program has provided positive results in a Phase 1 study in healthy volunteers and a Phase 2 study in patients with ATTR-CM. Having met with the FDA to discuss a potential approval pathway for AG10 at the end of 2018, we have recently begun enrolling patients in a Phase 3 study in patients with ATTR-CM and plan to initiate a Phase 3 study in patients with ATTR-PN in 2019.

- In our Phase 1 clinical trial, AG10 was well-tolerated and the highest tested dose achieved 100% TTR stabilization at peak concentrations and over 95% TTR stabilization on average in healthy adult volunteers at steady state.

- In our Phase 2 clinical trial, AG10 was well tolerated in symptomatic ATTRwt-CM and ATTRm-CM patients receiving 400 mg or 800 mg twice daily for 28 days. AG10 treatment significantly raised serum TTR concentrations ($p < 0.0001$ vs placebo), a biomarker associated with survival in ATTR-CM patients, by 50% and 36% in subjects administered 800 mg twice daily and 400 mg twice daily, respectively, at Day 28. All AG10-treated patients had tetrameric TTR levels within the normal clinical range at Day 28.
- Our Phase 3 study in ATTR-CM (ATTRibute-CM) is planned to enroll approximately 510 subjects with symptomatic ATTR-CM, including both wild-type and mutant TTR carriers with New York Heart Association Class I-III symptoms. Subjects will be randomized 2:1 between treatment (AG10 800 mg twice daily) and placebo. In Part A, change in 6MWD at 12 months will be compared between treatment and placebo groups as the primary endpoint. In Part B, the study will continue for a total duration of 30 months, at which point all-cause mortality and cardiovascular hospitalizations will be compared between treatment and control groups.

Clinical data

Phase 1 clinical trial of AG10

In September 2017, following acceptance of our IND application for AG10 in ATTR-CM, we initiated our first clinical trial of AG10. The study was designed as a randomized, placebo-controlled, single and multiple ascending dose study in healthy adult volunteers. The primary objective of the study was to evaluate the safety and tolerability of single and multiple doses of AG10. The secondary objectives were to characterize the PK of AG10 and to describe the PD properties of AG10, as well as the PK-PD relationship of AG10 in healthy adult subjects.

Part A consists of a single ascending dose, or SAD, design, where four cohorts of eight healthy individuals were randomized to receive AG10 or placebo in a 3:1 overall ratio. Part B consists of a multiple ascending dose, or MAD, design, where three cohorts of eight healthy individuals were randomized to receive AG10 or placebo in a 3:1 ratio. A total of 32 subjects, 24 dosed with AG10 and eight with placebo to match, completed Part A with doses of 50 mg, 150 mg, 300 mg or 800 mg of AG10. In Part B, a total of 24 subjects, 18 dosed with AG10 and six with placebo to match, were dosed with 100 mg, 300 mg or 800 mg AG10 every 12 hours for 12 days.

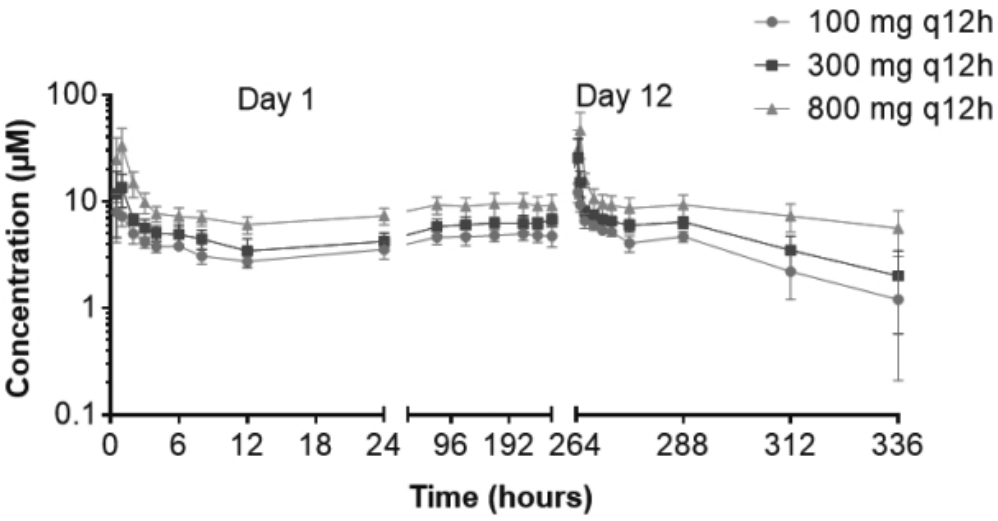
Results from both the SAD and MAD parts of the study indicate that AG10 was well-tolerated. No deaths or SAEs were reported during the study and no subject discontinued study drug or the study due to an AE. Most AEs were reported by single subjects in both the SAD and MAD parts, and all were mild to moderate in intensity. The only AEs that occurred in more than one subject were dry mouth, generalized headache, upper respiratory infection, and dizziness, all of which occurred in two separate subjects. No AEs were reported as “probable” with regards to their relationship to AG10.Below is a summary of our observations of treatment emergent SAEs and AEs observed in the Phase 1 study.

Number of patients experiencing adverse events (%)

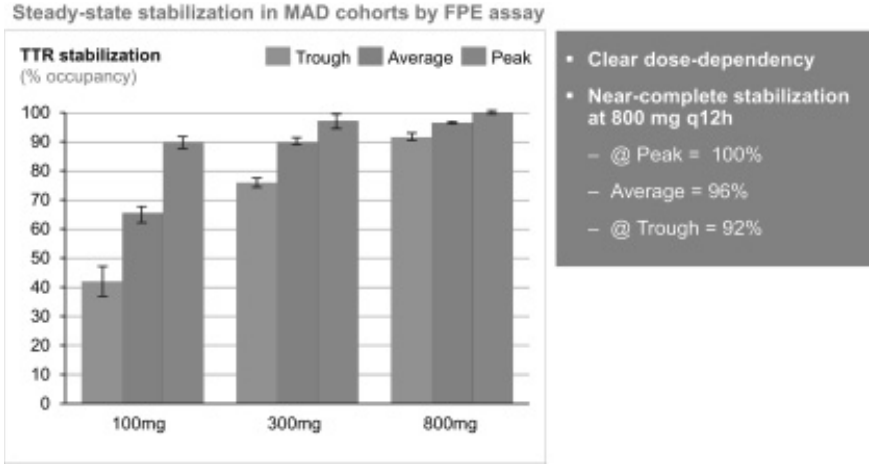
	Single ascending dose					Multiple ascending dose (q12h)			
	Placebo (n=8)	**50 mg (n=6)**	**150 mg (n=6)**	**300 mg[1] (n=6)**	**800 mg (n=6)**	**Placebo (n=6)**	**100 mg (n=6)**	**300 mg (n=6)**	**800 mg (n=6)**
SAEs	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
AEs.....	2 (25%)	3 (50%)	2 (33%)	1 (17%)	1 (17%)	3 (50%)	2 (33%)	5 (83%)	1 (17%)

1: Adverse events in the fed component; no subjects in the fasted component experienced treatment emergent SAEs or AEs

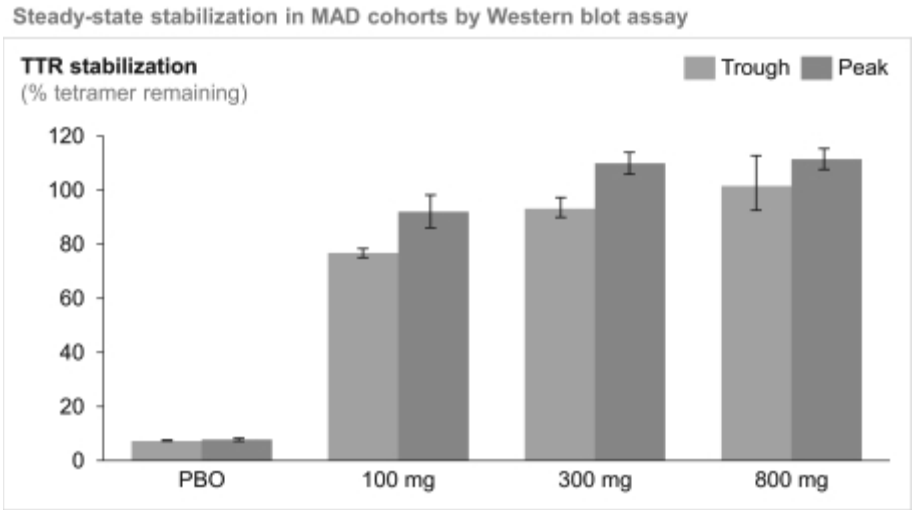
PK properties of AG10 were evaluated in both parts of the trial. The data indicate that AG10 is rapidly absorbed (peak concentrations achieved within 1 hour of dosing), and the terminal half-life of the compound is approximately 25 hours. Plasma concentrations achieved in these studies reached our expected steady-state target concentrations. The PK of AG10 in the MAD portion of the study is shown below.



We evaluated the PD properties of AG10 with the fluorescent probe exclusion, or FPE, and Western blot assays, both previously reported assays of TTR stabilization. The percentage of TTR stabilization as measured by the FPE assay at peak, trough and on average over the dosing interval at steady-state (Day 12) in the MAD portion of the study is shown below. The data from the highest tested daily dose demonstrated 100% steady-state TTR stabilization in all subjects at peak drug concentration measured shortly after oral dosing. At the same 800 mg dose administered every 12 hours, TTR stabilization on average over the dosing interval and at trough (pre-dose at steady state) was 96% and 92%, respectively. We believe these are the highest levels of ex vivo TTR stabilization demonstrated in any clinical trial of a TTR stabilizer and support AG10's potential to slow or halt the progression of ATTR.



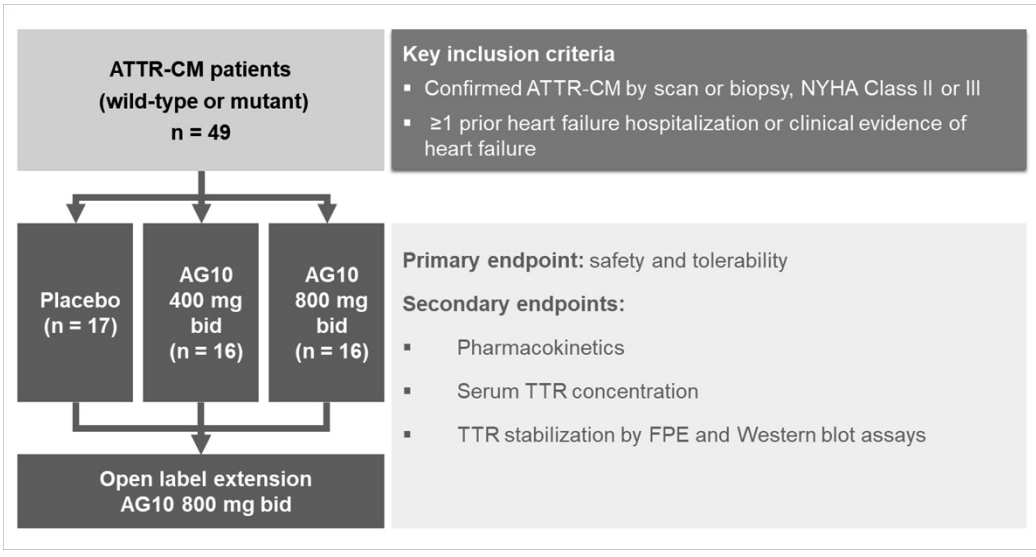
TTR stabilization was also measured using the Western blot assay. Summarized quantification (mean +/- standard deviation) of all MAD data is shown below. These data similarly showed high levels of TTR stabilization in all MAD cohorts at peak and trough concentrations. Further, the blots demonstrate that near-complete TTR stabilization was achieved at 60 hours following final dose in the cohort dosed with 800 mg every 12 hours.



Phase 2 clinical trial of AG10

In November 2018, we completed our Phase 2 clinical trial of AG10 in symptomatic ATTR-CM. The study was designed as a randomized, placebo-controlled, dose-ranging study. The primary objective of the study was to evaluate the safety and tolerability of AG10 administered to adult subjects with symptomatic ATTR-CM. The secondary objectives were to characterize the pharmacokinetics of AG10 in symptomatic ATTR-CM subjects and to describe the pharmacodynamic properties of AG10, as well as the PK-PD relationship of AG10. The PD assessments of TTR stabilization were measured by fluorescent probe exclusion, Western blot, and serum prealbumin (TTR).

The trial design is depicted below. Eligible patients were randomized in a 1:1:1 ratio to placebo or 400 mg or 800 mg of AG10 twice daily. The study enrolled 49 symptomatic ATTR-CM subjects, of which 14 had known mutant ATTR-CM. The confirmed variants were V122I, T60A, and V30M.



Enrolled symptomatic ATTR-CM subjects ranged in age from 60-86 years, with a mean age of 74.1, and 92% were male. 29% of subjects presented with NYHA Class III heart failure symptoms and subjects had high baseline NT-proBNP with a mean of 3368 pg/mL. Additionally, on average, subjects had relatively low TTR at baseline with a mean of 22.0 mg/dL. The baseline characteristics are shown below.

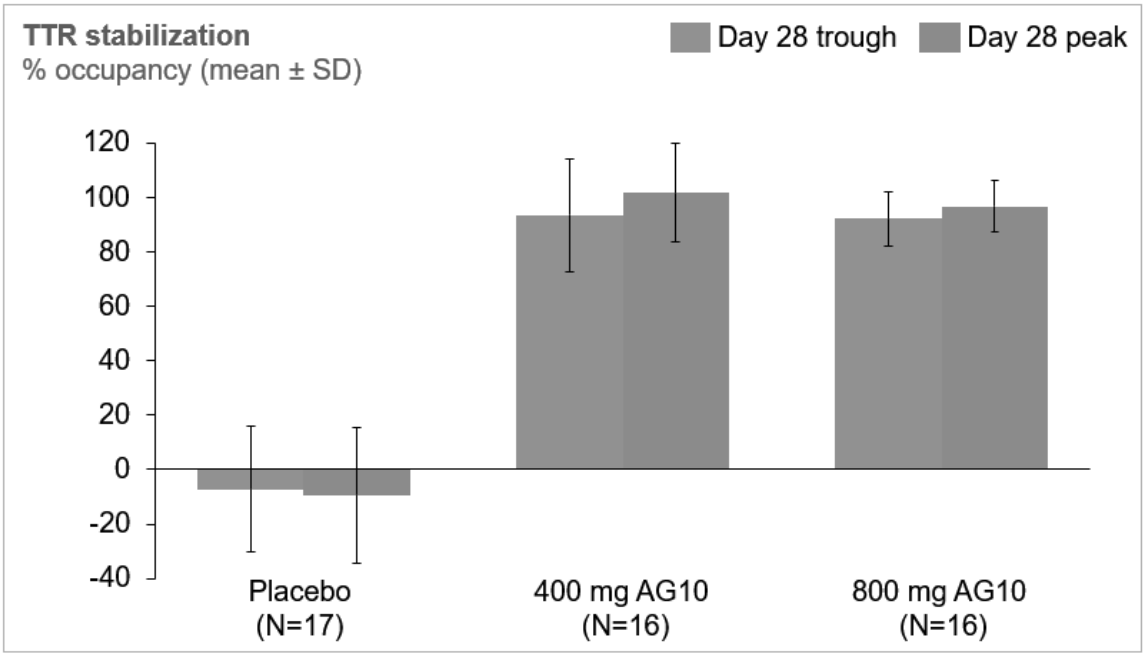
Characteristic	Placebo n = 17	AG10 400 mg n = 16	AG10 800 mg n = 16	Total n = 49
Age, mean (range)	73.2 (60-85)	73.8 (60-83)	75.4 (67-86)	74.1 (60-86)
Male, n (%)	17 (100%)	14 (88%)	14 (88%)	45 (92%)
ATTRm, n (%)	3 (18%)	6 (38%)	5 (31%)	14 (29%)
NYHA Class III, n (%)	5 (29%)	6 (38%)	3 (19%)	14 (29%)
Race, n (%)				
White	13 (76%)	10 (62%)	12 (75%)	35 (72%)
Black	3 (18%)	4 (25%)	3 (19%)	10 (20%)
Other	1 (6%)	2 (13%)	1 (6%)	4 (8%)
NT-proBNP (pg/mL)[1]	3151 ± 2705	3589 ± 3020	3377 ± 2806	3368 ± 2789
Troponin I (ng/mL)[2]	0.17 ± 0.30	0.22 ± 0.24	0.10 ± 0.06	0.16 ± 0.22
TTR (mg/dL)[3]	23.4 ± 5.5	23.2 ± 5.7	19.5 ± 4.2	22.0 ± 5.4

Overall, AG10 was well-tolerated in symptomatic ATTR-CM subjects with no lab safety signals of potential clinical concern attributed to study drug. 88% of subjects administered placebo experienced adverse events, or AEs, whereas 63% and 69% of subjects administered 400 mg and 800 mg AG10 experienced AEs, respectively. In both the placebo and active treatment groups, most of the AEs were mild to moderate in severity. The most commonly observed AEs, occurring in 4 or more subjects across the treatment groups, were atrial fibrillation, constipation, diarrhea, and muscle spasms. Among the reported serious adverse events, or SAEs, one placebo-treated subject experienced atrial fibrillation and congestive heart failure and another placebo-treated subject experienced cellulitis in their lower extremity. One AG10-treated subject experienced an SAE of shortness of breath on study, and this observation was not considered related to study drug.

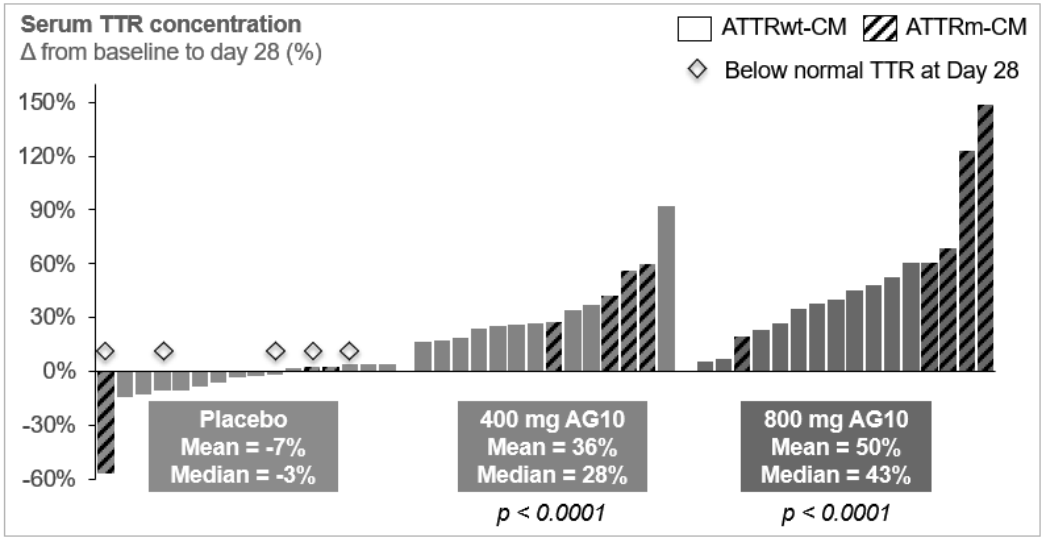
Below is a summary of our observations of treatment emergent SAEs and AEs observed in the Phase 2 study.

	Placebo N = 17	AG10 400 mg N = 16	AG10 800 mg N = 16
Any Adverse Event	**15 (88%)**	**10 (63%)**	**11 (69%)**
Mild	6 (35%)	8 (50%)	3 (19%)
Moderate	8 (47%)	2 (13%)	7 (44%)
Severe	1 (6%)	0	1 (6%)
Any Serious Adverse Event	**2 (12%)**	**1 (6%)**	**0**
AF and CHF	1 (6%)	0	0
Leg cellulitis	1 (6%)	0	0
Dyspnea	0	1 (6%)	0

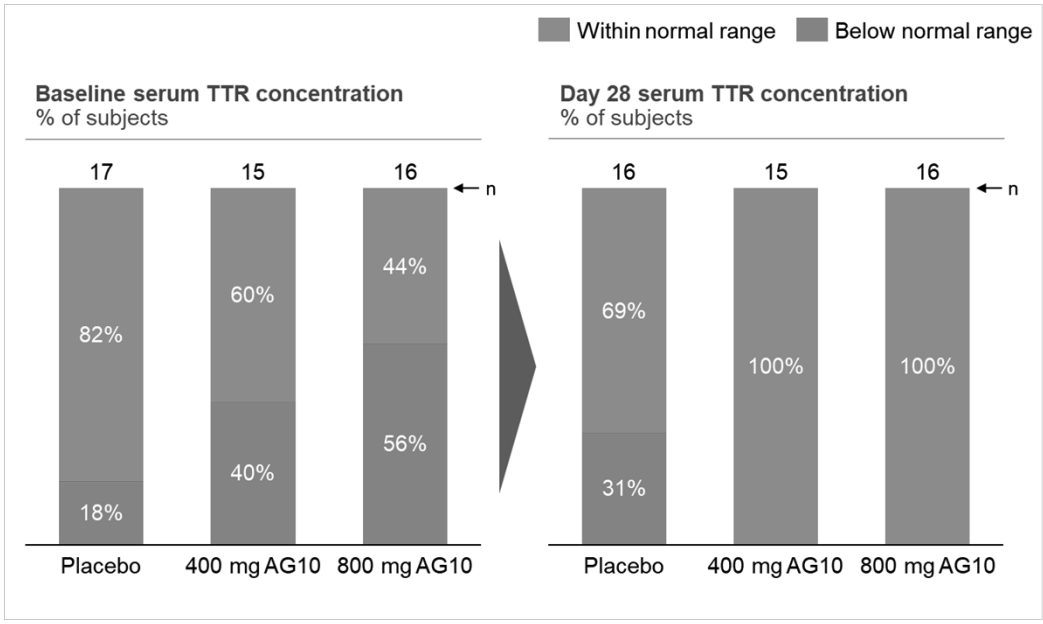
Ex-vivo stabilization assays demonstrated near-complete TTR stabilization by AG10, with greater than 90% average tetramer stabilization in subjects treated with 400 mg or 800 mg AG10. The stabilization response was consistent across mutant and wild-type TTR carriers and replicates previously reported clinical and preclinical TTR stabilization data.



The effect of AG10 was also measured using the serum concentration of tetrameric TTR, a biomarker associated with survival in ATTR-CM patients. Subjects in the placebo group experienced a mean reduction in serum TTR concentrations over the course of the study. Conversely, subjects administered AG10 showed a dose-dependent increase in tetrameric TTR. There was a greater observed treatment effect in subjects with mutant ATTR-CM as compared to subjects with wild-type ATTR-CM, which we believe can be explained, in part, by the lower absolute serum TTR of mutant ATTR-CM subjects at baseline.



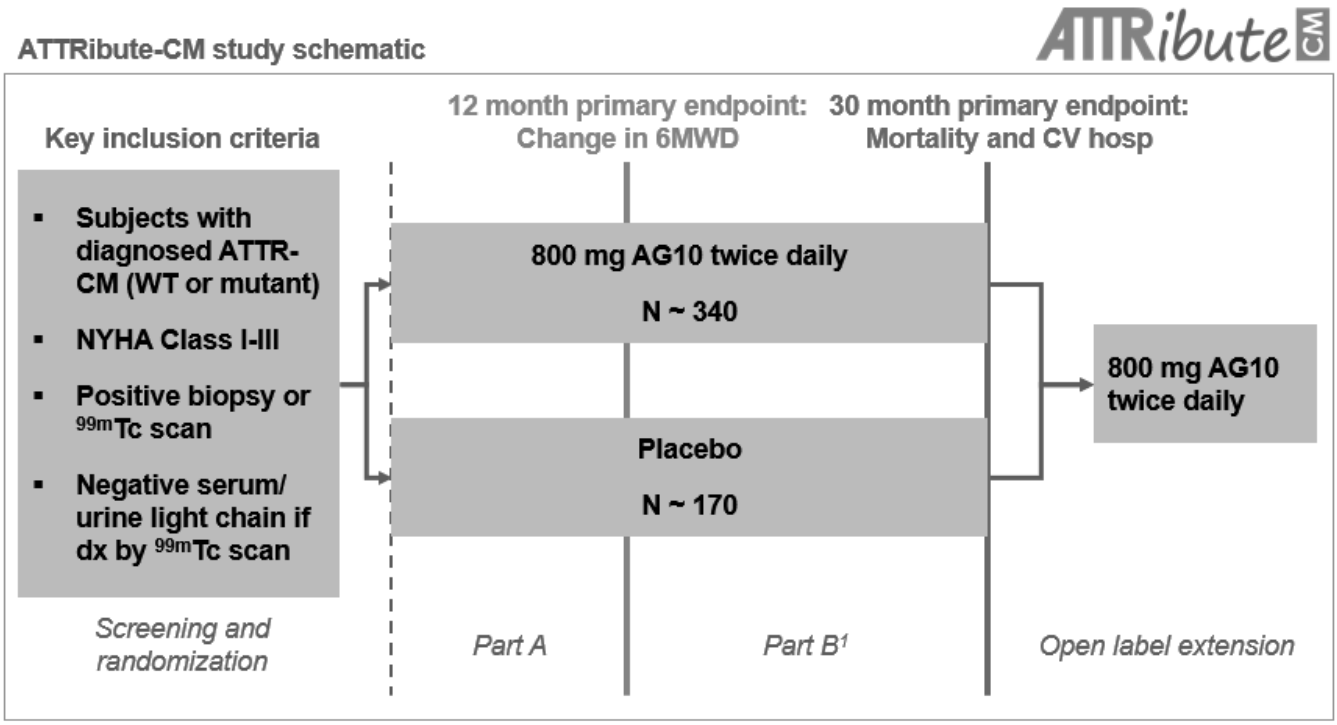
The proportion of subjects below and above normal tetrameric TTR was also assessed at baseline and Day 28. ATTR-CM patients with below normal TTR have a shorter life expectancy than patients within the normal range. Treatment with AG10 restored serum TTR concentrations to normal range in all subjects at Day 28. The normal reference range for serum TTR is 20-40 mg/dL.



Anticipated clinical and regulatory path for AG10

In November and December of 2018, we met with the FDA to discuss a potential regulatory path for AG10 in ATTR-CM. Following these discussions, we have begun enrolling patients a randomized, global Phase 3 study of AG10 in ATTR-CM patients (ATTRibute-CM). ATTRibute-CM will enroll approximately 510 subjects with symptomatic ATTR-CM, including both wild-type and mutant TTR carriers with New York Heart Association Class I-III symptoms. Subjects will be randomized 2:1 between treatment (AG10 800 mg twice daily) and placebo. In

Part A, change in 6MWD at 12 months will be compared between treatment and placebo groups as a potential registrational endpoint. In Part B, the study will continue for a total duration of 30 months, at which point all-cause mortality and cardiovascular hospitalizations will be compared between treatment and control groups. A schematic of the trial is shown below:



Secondary endpoints include: Kansas City Cardiomyopathy Questionnaire, serum TTR, TTR stabilization
[1]As local standard of care evolves, concomitant use of approved, indicated therapies may be allowed

6MWD = Six minute walk distance; NYHA = New York Heart Association;
^{99m}Tc = Technetium labeled pyrophosphate (PYP) or bisphosphonate (e.g., DPD); dx = diagnosis;
CV hosp = cardiovascular-related hospitalizations

We believe the safety and tolerability data of AG10 in healthy volunteers and in ATTR-CM patients will also be relevant for the ATTR-PN patient population. Subject to authorization from applicable regulatory authorities, we plan to initiate a Phase 3 clinical development program for AG10 in ATTR-PN in 2019. We do not intend to file an IND with the FDA for this indication as we plan to conduct this study outside of the United States.

We believe that, if approved, AG10 has the potential to demonstrate benefit as a best-in-class stabilizer for the treatment of ATTR. Systematic reviews of recent commercial drug launches demonstrate that compounds that exhibit positive qualities over other existing compounds can achieve significant, and in some instances the leading market share even if they are not the first approved product for a particular indication. Further, we believe certain qualities of the ATTR-CM market could yield additional benefits to a compelling therapeutic. Specifically, the ATTR-CM market is sufficiently large and heterogenous that subsets of patients may be unresponsive to any particular therapy, causing physicians to cycle between available therapies. In addition, the potential growth of the market may lead to a large number of newly diagnosed cases which would not require switching from an established therapy to a novel and promising agent.

Preclinical data for AG10 in ATTR

The advancement of AG10 into clinical trials was based on multiple lines of evidence that we believe support the potential for AG10 to be a disease-modifying TTR stabilizer.

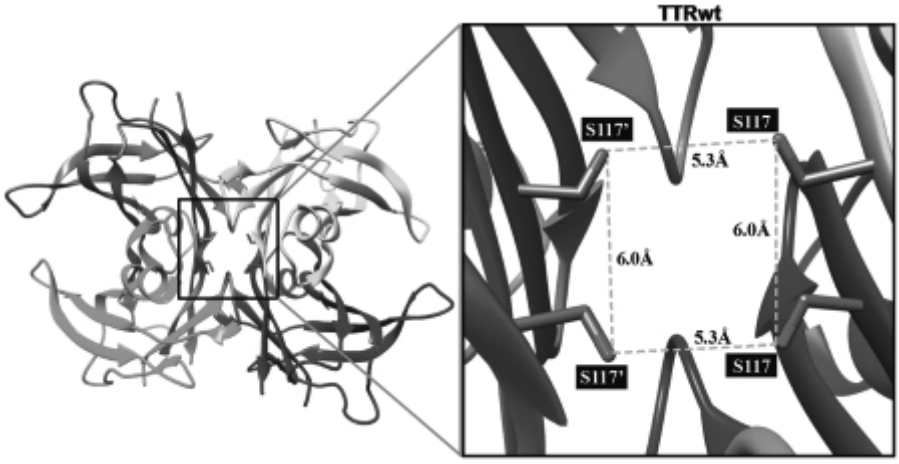
- **Unique binding mode:** We believe AG10 is the only TTR stabilizer that mimics the binding mode of the naturally-occurring, super-stabilizing T119M mutation.

- **TTR affinity and selectivity:** In preclinical testing, AG10 has been observed to exhibit greater specificity for TTR than tafamidis. Compared to tafamidis, AG10's binding to TTR is less affected by the presence of other plasma proteins, allowing a greater fraction of AG10 to bind TTR.
- **Near-complete TTR stabilization:** In established preclinical assays, AG10 has demonstrated the highest levels of TTR stabilization compared to other TTR stabilizers at clinically-relevant concentrations.
- **Stabilization of WT and mutant TTR:** Using serum samples from ATTR patients, we have demonstrated that AG10 is able to near-completely stabilize a wide range of TTR variants.

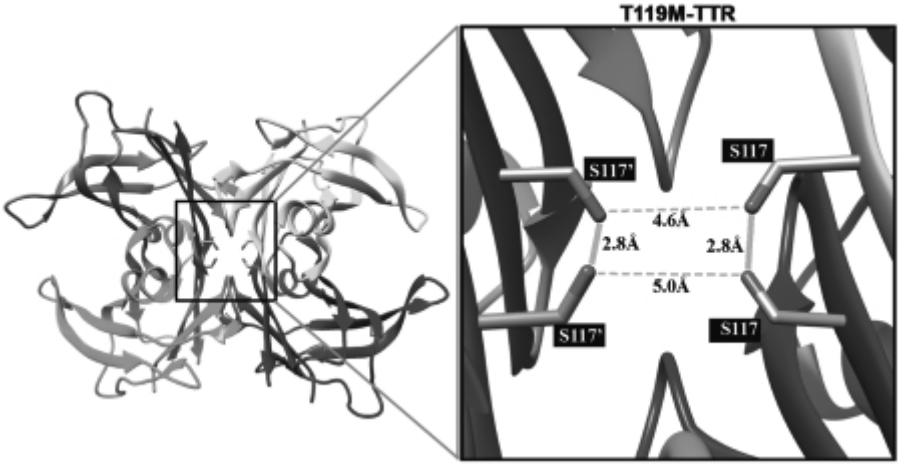
Unique binding mode

AG10's mode of binding is designed to mimic the naturally-occurring, super-stabilizing T119M rescue mutation, which we believe provides a mechanistic advantage in potentially slowing or halting the progression of ATTR. To our knowledge, this mode of binding is unique to AG10 among product candidates under clinical development for ATTR. The binding modes of the T119M variant and AG10 are further described below.

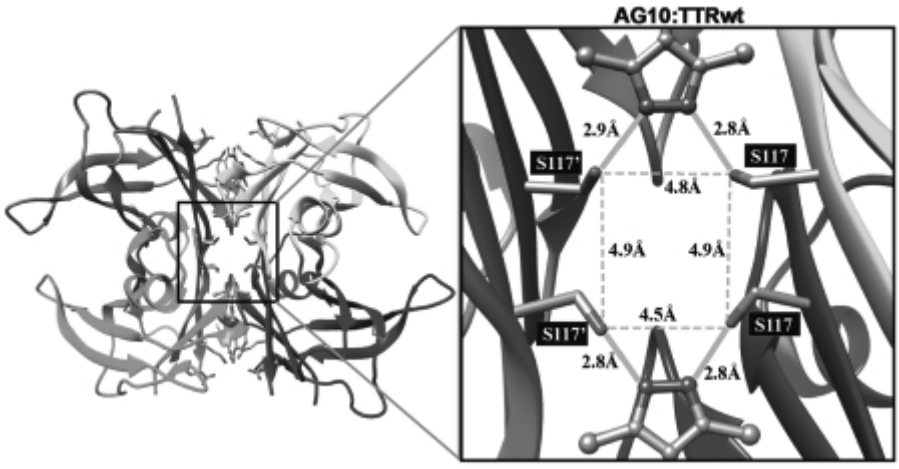
The T119M mutation "super-stabilizes" the tetramer by bringing the TTR monomers closer together, allowing for strong electrostatic interactions (hydrogen bonds and salt bridges) between adjacent monomers that stabilize the tetramer. In the thyroxine binding pocket of wild-type TTR, the serine 117 residues on each of the adjacent monomeric subunits are too far apart to form hydrogen bonds, as illustrated in the ribbon diagram below.



The T119M variant, depicted below, results in structural changes in the tetramer such that the serine residues are now close enough to each other (under 3 angstroms) to permit hydrogen bonds to form between serine residues in adjacent monomers, holding the tetramer more tightly together than in the wild-type tetramer.



By similarly facilitating the formation of hydrogen bonds with the serines at position 117, we believe AG10 structurally mimics the disease-suppressing mechanism of the T119M rescue mutation. As illustrated in the diagram below, AG10 has been observed to bind to TTR and participate in hydrogen bonding interactions with the serine 117 residues on adjacent monomers, stabilizing the tetramer in a manner similar to that observed in the T119M mutant protein. We also believe AG10's binding mode, which mimics that of the naturally occurring, disease-suppressing T119M rescue mutation, may lead to a slowing or halting of the dissociation of tetrameric TTR into monomers, the disease-initiating step in ATTR. To our knowledge, AG10 is the only compound in clinical development that mimics the structural effect of the T119M mutation with interactions at the bottom of the thyroxine binding pocket to confer TTR stabilization.



Published isothermal titration calorimetry studies demonstrate that the binding mode of AG10 to TTR is almost entirely driven by enthalpy, or the strength of the chemical bonds. In contrast, the binding of tafamidis to TTR is driven approximately only 50% by enthalpy. We believe that the relative enthalpic binding mode of AG10 as compared to tafamidis confers additional stability to the tetramer, thereby preventing the dissociation of tetrameric TTR into monomers.

TTR affinity and selectivity

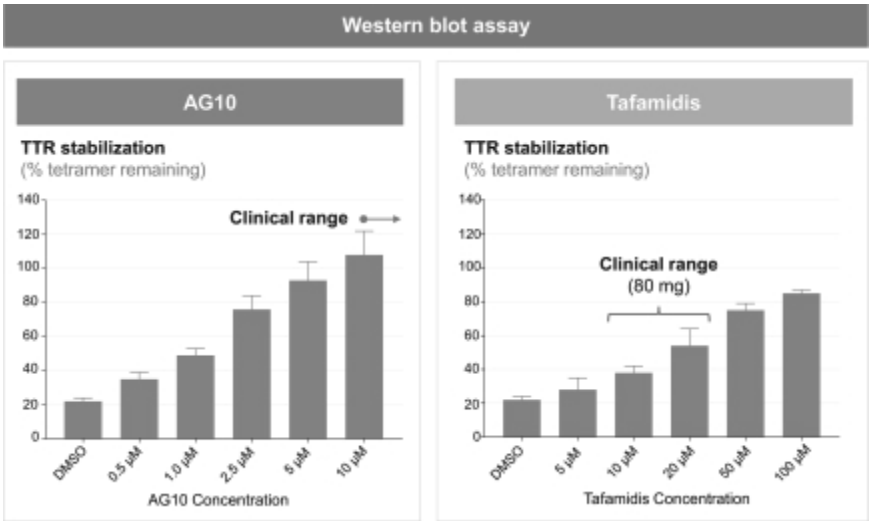
In addition to its unique binding mode, AG10 has been observed in preclinical studies to bind to TTR with high affinity and specificity. TTR has two binding sites for its native ligand, thyroxine, or the small molecule stabilizers that bind into the same pocket. Binding to these sites is non-cooperative, meaning that binding to the second site becomes less likely after a molecule is bound to the first. However, we believe binding to both sites may be required for complete TTR stabilization. AG10 has been shown to exhibit high binding affinity, as represented by its single-digit nanomolar dissociation constant, to TTR at its first site, and additionally an approximately 140-300 nanomolar dissociation constant at its second site. A dissociation constant measures the proportion of a compound that is bound to its target, with a lower dissociation constant implying stronger binding affinity. Based on ex vivo data from our Phase 1 clinical trial, we believe AG10 may bind TTR and potentially occupy more than one binding site per tetramer molecule.

AG10 binding to TTR has been observed to be also highly specific. In vitro assays demonstrate that AG10 has the potential to stabilize TTR while not being affected by the presence of other plasma proteins. In preclinical studies, approximately 3.6% of non-protein bound AG10 was observed to circulate in human plasma at relevant clinical concentrations, suggesting an available pool of compound to bind to newly synthesized TTR. In contrast, we believe the ability of synthesized tafamidis to bind and stabilize TTR is reduced in the presence of other proteins (particularly albumin, which is present at high concentrations in human plasma). Specifically, in published regulatory documents, the free fraction of tafamidis is less than 0.5% in human peripheral blood, suggesting that the majority of non-TTR bound tafamidis is bound to other plasma proteins. We believe data from our preclinical studies suggesting AG10's ability to bind TTR with high affinity and specificity support its potential to be a preferred TTR stabilizer for the treatment of ATTR.

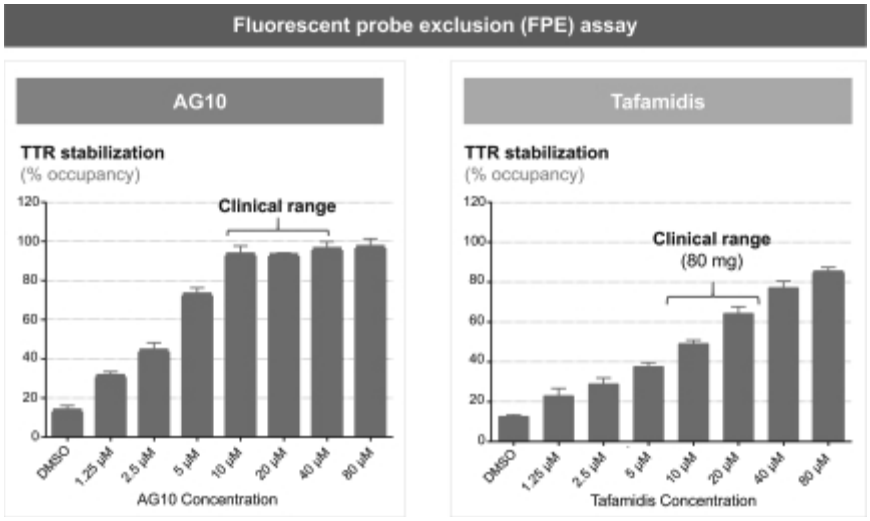
Near-complete TTR stabilization

In established preclinical assays, AG10 demonstrated near-complete levels of TTR stabilization at clinically-relevant concentrations, further supporting our belief that AG10 could be a compelling therapeutic for ATTR.

In vitro studies demonstrated that AG10 potently stabilizes TTR at doses tested in our Phase 1 clinical trial, as evaluated in three separate, established assays. In one assay, immunoblotting, or Western blots, were used to measure TTR stabilization as demonstrated by the percentage of tetrameric TTR remaining under accelerated destabilizing conditions (acidic pH). Shown below is the dose response effect of AG10 and commercially available tafamidis on stabilizing TTR at different compound concentrations. AG10 was observed to completely stabilize TTR at doses tested in our Phase 1 clinical trial and demonstrated greater TTR stabilization than tafamidis in this assay. The following graphs show the amount of TTR stabilization, as measured by the Western blot assay, using the solvent, dimethyl sulfoxide, or DMSO, and at different concentrations of AG10 and commercially available tafamidis:

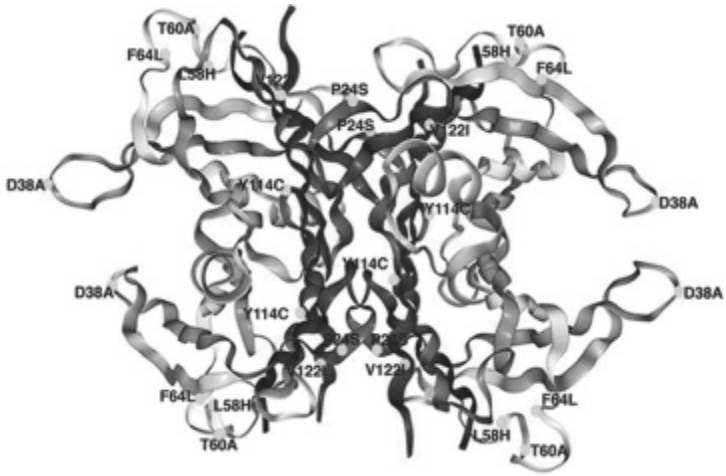


The fluorescent probe exclusion (FPE) assay is a competitive binding assay that measures the ability of a stabilizer to block the binding of a small molecule probe to the thyroxine binding site of TTR. A fluorescent signal is emitted only when the probe is bound to TTR. In the plots below, AG10 and tafamidis, as synthesized for use in our preclinical studies, were compared head-to-head under identical assay conditions. At the clinical concentrations achieved by AG10 in our Phase 1 clinical trial (see “Clinical range” in figure below), AG10 was observed to occupy more than 90% of TTR tetramers. For tafamidis, clinical concentrations reported in regulatory documents predict plasma concentrations from an 80 mg daily dose shown below. These concentrations were observed to result in approximately 55-65% TTR occupancy. The following graphs show the amount of TTR stabilization, as measured by the FPE assay, using DMSO and at different concentrations of AG10 and commercially available tafamidis:

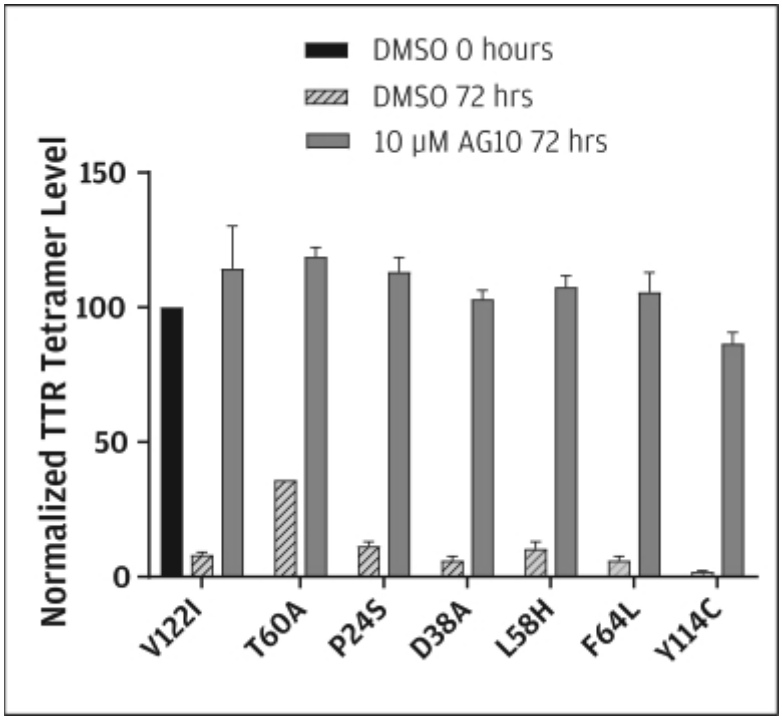


Stabilization of WT and mutant TTR

In addition, ex vivo studies in patient blood samples have supported AG10’s stabilization effects on TTR across several pathogenic mutations. Over 140 mutations leading to ATTR-CM and ATTR-PN have been described. We selected mutations that occur at different amino acid positions in the protein, as shown below, to test the hypothesis that AG10 could stabilize multiple TTR variants as well as wild-type protein.



Blood samples were obtained from patients carrying a series of mutations that are distributed throughout the primary amino acid sequence of the protein and are manifest across a spectrum of clinical phenotypes. In *in vitro* experiments, AG10 was added to patient sera and then evaluated for AG10's ability to stabilize TTR. AG10 was observed to potently stabilize all the tested TTR mutations, as measured by FPE assay and Western blots. Shown below are the Western blot results illustrating the effects of AG10 on variant TTR.



We believe the results for our nonclinical studies strongly support the continued clinical development of AG10 for ATTR.

Additional opportunities

We may evaluate opportunities to expand our capabilities and product pipeline. Consistent with our strategy, we may look for assets that target well-defined genetic diseases at their source. Complementary approaches in ATTR are the most synergistic opportunity. We may also pursue acquisition or in-licensing of adjacent precision cardiovascular medicine assets.

Manufacturing

Given the small molecule and oral formulation of AG10, we believe the synthesis of the drug substance for AG10 is reliable and reproducible from readily available starting materials, and the synthetic routes are amenable to large-scale production and do not require unusual equipment or handling in the manufacturing process. We have already established the synthetic process and scaled up to large kilogram quantities similar to the campaigns that will be required to provide drug product for our anticipated Phase 3 clinical trials. We are engaging secondary raw material suppliers and North American and European CMOs to mitigate supply chain risk and ensure continuity of supply of drug substance. To maximize flexibility, we have established relationships with non-overlapping vendors for supply of both starting materials as well as drug substance manufacturing.

Drug product formulation for AG10 has been developed as a film coated tablet and continues to be optimized. We have contracted North American third-party manufacturers capable of both formulation development and drug product manufacturing through commercialization. We have identified dual sources for each step of our manufacturing process to add additional capacity and redundancy to our supply chain. The formulations used in the Phase 1 and Phase 2 studies of AG10 were immediate release tablets. We have developed a higher dose strength tablet for use in our Phase 3 studies. For future development and commercialization, we intend to further optimize the formulation to reduce pill burden and facilitate compliance.

We do not own or operate, and currently have no plans to establish, any manufacturing facilities. We currently depend on third-party CMOs for all of our requirements of raw materials, drug substance and drug product for our preclinical research and our ongoing clinical trial of AG10. We have not entered into long-term agreements with our current CMOs. We intend to continue to rely on CMOs for later-stage development and commercialization of AG10, as well as the development and commercialization of any other product candidates that we may identify. Although we rely on CMOs, we have personnel and third-party consultants with extensive manufacturing experience to oversee the relationships with our contract manufacturers.

Sales and marketing

We intend to begin building a commercial infrastructure in the United States and selected other territories to support the commercialization of AG10 when we believe a regulatory approval in a particular territory is likely. Because ATTR-CM and ATTR-PN are rare diseases with a concentrated prescribing audience and a small number of key opinion leaders who influence the treatments prescribed for the relevant patient population, we believe that we can effectively address the market using our own targeted, specialty sales and marketing organization supported by internal sales personnel, an internal marketing group and distribution support.

In any core markets outside of the United States that we may identify, where appropriate, we may utilize strategic partners, distributors or contract sales forces to expand the commercial availability of AG10. We currently do not expect that we will require large pharmaceutical partners for the commercialization of AG10 or any other product candidates we may identify and pursue, although we may consider partnering in certain territories or indications or for other strategic purposes. We intend to evaluate our commercialization strategy as we advance AG10 through clinical development.

Intellectual property

We strive to protect the proprietary technology that we believe is important to our business, including seeking and maintaining patents and patent applications intended to cover our product candidates and compositions, their methods of use and processes for their manufacture, and any other aspects of inventions that are commercially important to the development of our business. We have entered into an exclusive license agreement with The Board of Trustees of the Leland Stanford Junior University, or Stanford, to obtain the rights to use certain patents for the development and commercialization of our product candidates. See "—Our material agreements—License agreement with the Board of Trustees of the Leland Stanford Junior University." We also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

Our success will depend on our ability to obtain and maintain patent and other proprietary rights protecting our commercially important technology, inventions and know-how related to our business, defend and enforce our current and future issued patents, if any, preserve the confidentiality of our trade secrets and operate without infringing the valid and enforceable patents and proprietary rights of third parties. We also rely on know-how, continuing technological innovation and potential in-licensing opportunities to develop and maintain our intellectual property portfolio. We seek to obtain domestic and international patent protection, and endeavor to promptly file patent applications for new commercially valuable inventions.

The patent positions of biopharmaceutical companies like us are generally uncertain and involve complex legal, scientific and factual questions. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and patent scope can be reinterpreted by the courts after issuance. Moreover, many jurisdictions permit third parties to challenge issued patents in administrative proceedings, which may result in further narrowing or even cancellation of patent claims. We cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any patents, if issued, will provide sufficient protection from competitors.

Because patent applications in the United States and certain other jurisdictions are maintained in secrecy for 18 months or potentially even longer, and since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain of the priority of inventions covered by pending patent applications. Moreover, we may have to participate in interference proceedings or derivation proceedings declared by the United States Patent and Trademark Office, or USPTO, to determine priority of invention.

Patents and patent applications

Our patent portfolio includes six issued U.S. patents, one allowed U.S. patent application, two pending U.S. patent applications, one patent in Europe and one patent Japan. Additionally, our portfolio includes one pending application in Europe, one pending application in Taiwan and an international application filed under the Patent Cooperation Treaty (PCT). Our portfolio further includes five provisional U.S. applications in two separate application families.

Specifically, our patent portfolio includes five issued U.S. patents, exclusively licensed from Stanford, which are directed to AG10's composition of matter and methods of use.

These patents are currently expected to expire in 2031 or 2033, absent any applicable patent term extensions. Our patent portfolio licensed from Stanford also includes one pending U.S. patent application, one European patent and one pending European patent application, as well as one issued Japanese patent with claims directed to composition of matter and methods of its use related to AG10. These patents and patent applications, if issued, are expected to expire between 2031 and 2033, absent any applicable patent term extensions.

In addition, we are the sole assignee of three patent families directed to particular salt/solid forms of AG10, methods of manufacturing AG10, dosing methods using AG10, and formulations of AG10. One of the families consists of a pending U.S. patent application, a pending PCT patent application and one related pending patent application in Taiwan. If issued, these patent applications are expected to expire in 2038, absent any applicable patent term adjustments or extensions. The remaining two patent families consist of provisional patent application(s) only.

Patent term

The base term of a U.S. patent is 20 years from the filing date of the earliest-filed non-provisional patent application from which the patent claims priority assuming that all maintenance fees are paid. The term of a U.S. patent can be lengthened by patent term adjustment, which compensates the owner of the patent for administrative delays at the USPTO the extent of which is offset by delays by the patent owner before the USPTO in obtaining the patent. In some cases, the term of a U.S. patent is shortened by a terminal disclaimer that reduces its term to that of an earlier-expiring patent. The term of a U.S. patent may be eligible for patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Act, to account for at least some of the time the drug is under development and regulatory review after the patent is granted. With regard to a drug for which FDA approval is the first permitted marketing of the active ingredient, the Hatch-Waxman Act allows for extension of the term of one U.S. patent that includes at least one claim covering the composition of matter of an FDA-approved drug, an FDA-approved method of treatment using the drug and/or a method of manufacturing the FDA-approved drug. The extended patent term cannot exceed the shorter of five years beyond the non-extended expiration of the patent or 14 years from the date of the FDA approval of the drug. Some foreign jurisdictions, including Europe and Japan, have analogous patent term extension provisions, which allow for extension of the term of a patent that covers a drug approved by the applicable foreign regulatory agency. In the future, if our product candidates receive FDA approval, we expect to apply for patent term extension on patents, if issued, covering those products, and/or their methods of use.

Trade secrets

In addition to patents, we rely on trade secrets and know-how to develop and maintain our competitive position. We typically rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. We protect trade secrets and know-how by establishing confidentiality agreements and invention assignment agreements with our employees, consultants, scientific advisors and contractors. These agreements generally provide that all confidential information developed or made known during the course of an individual or entities' relationship with us must be kept confidential during and after the relationship. These agreements also typically provide that all inventions resulting from work performed for us or relating to our business and conceived or completed during the period of employment or assignment, as applicable, shall be our exclusive property. In addition, we take other appropriate precautions, such as physical and technological security measures, to guard against misappropriation of our proprietary information by third parties.

Our material agreements

License agreement with the Board of Trustees of the Leland Stanford Junior University

In April 2016, we entered into an exclusive license agreement with Stanford for rights relating to novel transthyretin aggregation inhibitors. Under our agreement, Stanford has granted us an exclusive worldwide license to make, use and sell products that are covered by the licensed patent rights. This license grant expires when the last licensed patent expires. The patent rights exclusively licensed to us under the license are described in more detail above under the heading "—Intellectual property."

Stanford retains the right, on behalf of itself and all other non-profit academic research institutions, to practice under the patent rights for any non-profit purpose, including sponsored research and collaborations. We may grant sublicenses to third parties so long as we are actively pursuing the development or commercialization of products covered by the patent rights. We may also be required to sublicense our rights under the agreement at Stanford's request under certain conditions, including if we are unwilling or unable to serve a potential market or territory and there is a third party willing to be a sublicensee in such market or territory.

We are obligated to pay to Stanford a yearly license maintenance fee during the term of the agreement, but we may offset the maintenance fee against earned royalty payments due on net sales occurring in that year. Stanford is entitled to receive a royalty as a percentage of net sales of licensed products, in the low single digits. We have agreed to pay Stanford a percentage of non-royalty revenue we receive from our sublicensees, with the amount owed decreasing annually for three years based on when we enter into the applicable sublicense agreement. We also issued to Stanford 56,809 shares of our common stock with a price of $0.15 per share, the fair market value at the time of issuance, a portion of which were issued directly to Drs. Graef and Alhamadsheh. In addition, we are obligated to pay Stanford up to approximately $1.0 million upon the achievement of specific intellectual property, clinical and regulatory milestone events. In the event of a change of control transaction, we are obligated to pay Stanford a change of control fee of $250,000 in connection with the assignment of the license agreement to our acquirer.

Under the license agreement with Stanford, we are obligated to use commercially reasonable efforts to develop, manufacture, and commercialize at least one licensed product; to develop markets for such licensed products; and to meet certain development milestones as agreed upon between us and Stanford.

Subject to the expiration of the license grant described above, the agreement does not have a specified term. We may terminate the agreement by providing prior written notice to Stanford, and Stanford has the right to terminate the agreement if we fail to achieve certain milestones or make payments under the agreement or are not actively pursuing development of a licensed product, or if we otherwise materially breach the agreement and fail to cure such breach within a specified grace period.

Competition

The biopharmaceutical industry is highly competitive. There are many public and private biopharmaceutical companies, universities, governmental agencies and other research organizations actively engaged in the research and development of products that may be similar to our product candidates or address similar markets. In addition, the number of companies seeking to develop and commercialize products and therapies similar to our product candidates is likely to increase. In the area of ATTR, we expect to face competition from competitors targeting three distinct mechanisms of action: TTR stabilization, TTR knockdown, and TTR clearance.

Among TTR stabilizers, we expect to face competition from tafamidis. Tafamidis is an oral TTR stabilizer that is approved in select geographies outside of the United States for Stage 1 (early stage) ATTR-PN. In August 2018, Pfizer Inc. announced that its Phase 3 clinical trial (ATTR-ACT) of tafamidis in ATTRwt-CM and ATTRm-CM patients had met its primary endpoint, a reduction in the combination of all-cause mortality and cumulative incidence of cardiovascular-related hospitalizations. In January 2019, Pfizer announced that the FDA accepted its two NDAs for tafamidis to treat ATTR-CM. Corino Therapeutics Inc./SOM Innovation Biotech, S.L. is developing SOM0226 (tolcapone, CRX-1008), an oral, small molecule TTR stabilizer for ATTR. Tolcapone is a generic drug that is FDA-approved for the treatment of Parkinson's disease. The drug has demonstrated significant liver toxicity and consequently, had been previously removed from the US market. The marketing authorization in the US was renewed in August 2009, but it remains off the market in a number of other countries, including Australia, Bulgaria, and Iceland. Corino Therapeutics/SOM Biotech completed a Phase 2a trial of tolcapone in ATTR-PN. Diflunisal, a generic, non-steroidal anti-inflammatory drug (NSAID) indicated for mild to moderate pain and arthritis, may also be considered a competitor, having been shown to significantly slow development of ATTR-PN in a randomized Phase 2/3 trial. Diflunisal's label contains a boxed warning for cardiovascular, renal and gastrointestinal risks.

Potentially competitive TTR knockdown approaches are being pursued by multiple companies. In 2018, Alnylam Pharmaceuticals Inc., or Alnylam, received marketing authorization from both the FDA and EMA for Onpattro (patisiran), an intravenously administered RNAi therapeutic for the treatment of hereditary ATTR with polyneuropathy. Alnylam is also developing ALN-TTRsc02 (vutrisiran), a subcutaneously administered RNAi therapeutic for ATTR. Alnylam has reportedly completed a Phase 1 clinical trial of ALN-TTRsc02 in healthy volunteers and initiated a Phase 3 trial in patients with hereditary ATTR with polyneuropathy. Ionis Pharmaceuticals Inc./Akcea Therapeutics, Inc. received marketing approval from both the FDA and EMA in 2018 for Tegsedi (inotersen), an antisense oligonucleotide (ASO) drug, for hereditary ATTR with polyneuropathy. Intellia's program is currently in preclinical development. Arcturus Therapeutics Ltd. is developing LUNAR-TTR, a lipid-based RNA medicine currently in preclinical development.

Therapeutics targeting TTR clearance may also be competitive to AG10. Prothena Therapeutics plc is developing PRX004, a monoclonal antibody, for ATTR that is currently in a Phase 1 clinical trial. Neurimmune Holding AG is also developing a recombinant human antibody for ATTR that is in preclinical development.

Government regulation

The FDA and comparable regulatory authorities in state and local jurisdictions and in other countries impose substantial and burdensome requirements upon companies involved in the clinical development, manufacture, marketing and distribution of drugs, such as those we are developing. These agencies and other federal, state and local entities regulate, among other things, the research and development, testing, manufacture, quality control, safety, effectiveness, labeling, storage, record keeping, approval, advertising and promotion, distribution, post-approval monitoring and reporting, sampling and export and import of our product candidates.

U.S. government regulation of drug products

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant to a variety of administrative or judicial sanctions, such as the FDA's refusal to approve pending NDAs, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- Completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's good laboratory practice, or GLP, regulations;
- Submission to the FDA of an investigational new drug application, or IND, which must become effective before human clinical trials may begin;
- Approval by an independent institutional review board, or IRB, at each clinical site before each trial may be initiated;
- Performance of adequate and well-controlled human clinical trials in accordance with good clinical practice, or GCP, requirements to establish the safety and efficacy of the proposed drug product for each indication;
- Submission to the FDA of an NDA;
- Satisfactory completion of an FDA advisory committee review, if applicable;
- Satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with current good manufacturing practice, or cGMP, requirements and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- Satisfactory completion of FDA audits of clinical trial sites to assure compliance with GCPs and the integrity of the clinical data;
- Payment of user fees and securing FDA approval of the NDA; and

- Compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and the potential requirement to conduct post-approval studies.

Preclinical studies

Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data and any available clinical data or literature, among other things, to the FDA as part of an IND. Some preclinical testing may continue even after the IND is submitted. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to initiate.

Clinical trials

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, an IRB at each institution participating in the clinical trial must review and approve the plan for any clinical trial before it initiates at that institution. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their www.clinicaltrials.gov website.

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

- Phase 1: The drug 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 indication of its effectiveness.
- Phase 2: The drug is administered to a limited patient population to 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 3: The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product, and to provide adequate information for the labeling of the product.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor must also notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information. Phase 1, Phase 2 and Phase 3 trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA 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. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients.

Marketing approval

Assuming successful completion of the required clinical testing, 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 an NDA requesting approval to market the product for one or more indications. In most cases, the submission of an NDA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act, or PDUFA, guidelines that are currently in effect, the FDA has a goal of ten months from the date of "filing" of a standard NDA, for a new molecular entity to review and act on the submission. This review typically takes twelve months from the date the NDA is submitted to FDA because the FDA has approximately two months to make a "filing" decision.

In addition, under the Pediatric Research Equity Act of 2003, or PREA, as amended and reauthorized, certain NDAs or supplements to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug 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. An Agreed Initial Pediatric Study Plan requesting a waiver from the requirement to conduct clinical studies has been submitted to the FDA.

The FDA also may require submission of a risk evaluation and mitigation strategy, or REMS, plan to ensure that the benefits of the drug outweigh its risks. The REMS plan could include medication guides, physician communication plans, assessment plans, and/or elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product's continued safety, quality and purity.

The FDA may refer an application for a novel drug to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, which reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is manufactured. 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. Additionally, before approving an NDA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP requirements.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional clinical or preclinical testing in order for FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Even 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, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After 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 FDA review and approval.

Special FDA expedited review and approval programs

The FDA has various programs, including fast track designation, accelerated approval, priority review, and breakthrough therapy designation, which are intended to expedite or simplify the process for the development and FDA review of drugs that are intended for the treatment of serious or life-threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures.

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. The FDA may review sections of the NDA for a fast track product on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA.

The FDA may give a priority review designation to drugs that offer major advances in treatment, or provide a treatment where no adequate therapy exists. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under current PDUFA guidelines. Under the new PDUFA agreement, these six and ten month review periods are measured from the "filing" date rather than the receipt date for NDAs for new molecular entities, which typically adds approximately two months to the timeline for review and decision from the date of submission. Many products that are eligible for fast track designation are also likely to be considered appropriate to receive a priority review.

In addition, products tested for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may be eligible for accelerated approval and may be approved on the basis of adequate and well-controlled clinical trials establishing that the drug product has an effect on 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, or IMM, 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. As a condition of approval, the FDA may require a sponsor of a drug receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on IMM or other clinical endpoint, and the drug may be subject to accelerated withdrawal procedures if, for example, the sponsor fails to confirm clinical benefit.

Moreover, under the provisions of the Food and Drug Administration Safety and Innovation Act, or FDASIA, passed in July 2012, a sponsor can request designation of a product candidate as a "breakthrough therapy." 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, and 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. Drugs designated as breakthrough therapies are also eligible for accelerated approval. The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened. We may explore some of these opportunities for our product candidates as appropriate.

Accelerated approval pathway

The FDA may grant accelerated approval to a drug for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that the drug has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on IMM, and that is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. Drugs granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval. For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. An intermediate clinical endpoint is a measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a drug, such as an effect on IMM. The FDA has limited experience with accelerated approvals based on intermediate clinical endpoints, but has indicated that such endpoints generally may support accelerated approval where the therapeutic effect measured by the endpoint is not itself a clinical benefit and basis for traditional approval, if there is a basis for concluding that the therapeutic effect is reasonably likely to predict the ultimate clinical benefit of a drug.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a drug, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of drugs for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit.

The accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the drug's clinical benefit. As a result, a drug 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, would allow the FDA to withdraw the drug from the market on an expedited basis. All promotional materials for drug candidates approved under accelerated regulations are subject to prior review by the FDA.

Orphan drug designation and exclusivity

Under the Orphan Drug Act, the FDA may designate a drug product as an "orphan drug" if it is intended to treat a rare disease or condition (generally meaning that it 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 drug product available in the United States for treatment of the disease or condition will be recovered from sales of the product). A company must request orphan product designation before submitting an NDA. If the request is granted, the FDA will disclose the identity of the therapeutic agent and its potential use. Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product with orphan status receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will be receiving orphan product exclusivity. Orphan product exclusivity means that the FDA may not approve any other applications for the same product for the same indication for seven years, except in certain limited circumstances. If a drug or drug product designated as an orphan product ultimately receives marketing approval for an indication broader than what was designated in its orphan product application, it may not be entitled to exclusivity. Orphan exclusivity will not bar approval of another product under certain circumstances, including if a subsequent product with the same active ingredient for the same indication is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care, or if the company with orphan drug exclusivity is not able to meet market demand. Further, the FDA may approve more than one product for the same orphan indication or disease as long as the products contain different active ingredients. Moreover, competitors may receive approval of different products for the indication for which the orphan product has exclusivity or obtain approval for the same product but for a different indication for which the orphan product has exclusivity.

U.S. marketing exclusivity

Market exclusivity provisions under the FDCA also can delay the submission or the approval of certain applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to gain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an Abbreviated New Drug Application, or ANDA, or a 505(b)(2) NDA submitted by another company for another version of such drug where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement. The FDCA also provides three years of marketing exclusivity for a NDA, 505(b)(2) NDA or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example, new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for the original non-modified version of the drug. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Pediatric exclusivity is another type of regulatory market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing regulatory exclusivity periods. This six-month exclusivity may be granted based on the voluntary completion of a pediatric trial in accordance with an FDA-issued "Written Request" for such a trial.

Post-approval requirements

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims are subject to prior FDA review and approval. There are continuing, annual user fee requirements for any marketed products and the establishments where such products are manufactured, as well as new application fees for supplemental applications with clinical data.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA. For example, the FDA may require post-marketing testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP requirements and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval of a drug or medical device is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information, including the addition of new warnings and contraindications; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- Restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- Fines, warning letters or holds on post-approval clinical trials;
- Refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product approvals;
- Product seizure or detention, or refusal to permit the import or export of products; and
- Injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs or devices may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

Other healthcare laws

Healthcare providers, physicians, and third-party payors play a primary role in the recommendation and prescription of drug products for which we obtain marketing approval. Arrangements with third party payors, healthcare providers and physicians, in connection with the clinical research, sales, marketing and promotion of products, once approved, and related activities, may expose a pharmaceutical manufacturer to broadly applicable fraud and abuse and other healthcare laws and regulations. In the United States, these laws include, without limitation, state and federal anti-kickback, false claims, physician transparency, and patient data privacy and security laws and regulations, including but not limited to those described below:

- the federal Anti-Kickback Statute, or AKS, which makes it illegal for any person, including a prescription drug manufacturer (or a party acting on its behalf) to knowingly and willfully solicit, receive, offer or pay any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, that is intended to induce or reward, referrals including the purchase recommendation, order or prescription of a particular drug for which payment may be made under a federal healthcare program, such as the Medicare and Medicaid programs. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- the federal civil and criminal false claims laws and civil monetary penalty laws, including the False Claims Act, which impose criminal and civil penalties, including through civil “qui tam” or “whistleblower” actions, against individuals or entities for, among other things, knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid, or other federal health care programs that are false or fraudulent; knowingly making or causing a false statement material to a false or fraudulent claim or an obligation to pay money to the federal government; or knowingly concealing or knowingly and improperly avoiding or decreasing such an obligation. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of these statutes or specific intent to violate them in order to have committed a violation;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information;
- the federal Physician Payments Sunshine Act, created under Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, the ACA, and its implementing regulations, which require manufacturers of drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance Program to report annually to the U.S. Department of Health and Human Services, or HHS, under the Open Payments Program, information related to payments or other transfers of value made to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- analogous state and foreign laws and regulations, such as state and foreign anti-kickback, false claims, consumer protection and unfair competition laws which may apply to pharmaceutical business practices, including but not limited to, research, distribution, sales and marketing arrangements as well as submitting claims involving healthcare items or services reimbursed by any third-party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government that otherwise restricts payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to file reports with states regarding pricing and marketing information, such as the tracking and reporting of gifts, compensations and other remuneration and items of value provided to healthcare professionals and entities; state and local laws requiring the registration of pharmaceutical sales representatives; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available, it is possible that some of a pharmaceutical manufacturer's business activities could be subject to challenge under one or more of such laws. Efforts to ensure that business arrangements comply with applicable healthcare laws involve substantial costs. It is possible that governmental and enforcement authorities will conclude that a pharmaceutical manufacturer's business practices do not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against a pharmaceutical manufacturer, and it is not successful in defending itself or asserting its rights, those actions could have a significant impact on its business, including the imposition of civil, criminal and administrative penalties, damages, disgorgement, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, integrity and oversight agreements to resolve allegations of non-compliance, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of operations, any of which could adversely affect a pharmaceutical manufacturer's ability to operate its business and the results of operations. In addition, commercialization of any drug product outside the United States will also likely be subject to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

Current and future healthcare reform legislation

In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to the health care system. In particular, in 2010 the ACA was enacted, which, among other things, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, and provided incentives to programs that increase the federal government's comparative effectiveness research.

There have been a number of significant changes to the ACA and its implementation. The Tax Cuts and Jobs Act of 2017, or Tax Act, includes a provision repealing effective January 1, 2019 the tax-based shared responsibility payment imposed by the ACA 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". In addition, in 2017 President Trump signed executive orders directing federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices, and terminated the cost-sharing subsidies that reimburse insurers under the ACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. Further, on June 14, 2018, U.S. Court of Appeals for the Federal Circuit ruled that the federal government was not required to pay more than $12 billion in ACA risk corridor payments to third-party payors who argued were owed to them. The effects of this gap in reimbursement on third-party payors, the viability of the ACA marketplace, providers, and potentially our business, are not yet known. The Bipartisan Budget Act of 2018 also amends the ACA, effective January 1, 2019, by increasing the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and closing the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". In July 2018, the Centers for Medicare and Medicaid Services, or CMS, published a final rule permitting further collections and payments to and from certain Affordable Care Act qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. In addition, CMS has recently published a final rule that would give states greater flexibility, starting in 2020, in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces. On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas, or the Texas District Court Judge, ruled that the individual mandate is a critical and inseverable feature of the ACA, and therefore, because it was repealed as part of the Tax Cuts and Jobs Act of 2017, the remaining provisions of the ACA are invalid as well. The Trump Administration and CMS have both stated that the ruling will have no immediate effect, and on December 30, 2018 the Texas District Court Judge issued an order staying the judgment pending appeal.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in 2013, and, due to subsequent legislative amendments, will remain in effect through 2027 unless additional Congressional action is taken. The American Taxpayer Relief Act of 2012 further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

The full impact of the ACA, any law repealing, replacing, or modifying elements of it, and the political uncertainty surrounding its repeal, replacement, or modification on our business, as well as the impact of other healthcare legislative reform measures, remain unclear. We expect that additional federal healthcare reform measures may be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, and in turn could significantly reduce the projected value of certain development projects and reduce our profitability and may increase our regulatory burdens and operating costs.

Regulation outside the United States

To the extent that any of our product candidates, once approved, are sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws and implementation of corporate compliance programs and reporting of payments or other transfers of value to healthcare professionals.

European Union Drug Development

In the European Union, or EU, our product candidates also may be subject to extensive regulatory requirements. As in the United States, medicinal products can be marketed only if a marketing authorization from the competent regulatory agencies has been obtained.

Similar to the United States, the various phases of preclinical and clinical research in the European Union are subject to significant regulatory controls. Although the EU Clinical Trials Directive 2001/20/EC has sought to harmonize the EU clinical trials regulatory framework, setting out common rules for the control and authorization of clinical trials in the EU, the EU Member States have transposed and applied the provisions of the Directive differently. This has led to significant variations in the member state regimes. Under the current regime, before a clinical trial can be initiated it must be approved in each of the EU countries where the trial is to be conducted by two distinct bodies: the National Competent Authority, or NCA, and one or more Ethics Committees, or ECs. Under the current regime all suspected unexpected serious adverse reactions to the investigated drug that occur during the clinical trial have to be reported to the NCA and ECs of the Member State where they occurred.

The EU clinical trials legislation currently is undergoing a transition process mainly aimed at harmonizing and streamlining clinical-trial authorization, simplifying adverse-event reporting procedures, improving the supervision of clinical trials and increasing their transparency. In April 2014, the EU adopted a new Clinical Trials Regulation (EU) No 536/2014, which is set to replace the current Clinical Trials Directive 2001/20/EC. It is expected that the new Clinical Trials Regulation (EU) No 536/2014 will apply in 2019 with a three-year transition period. It will overhaul the current system of approvals for clinical trials in the EU. Specifically, the new regulation, which will be directly applicable in all member states, aims at simplifying and streamlining the approval of clinical trials in the EU. For instance, the new Clinical Trials Regulation provides for a streamlined application procedure via a single entry point and strictly defined deadlines for the assessment of clinical trial applications.

European Union Drug Review and Approval

To market our future products in the EEA (which is comprised of the 28 Member States of the EU plus Norway, Iceland and Liechtenstein) and many other foreign jurisdictions, we must obtain separate regulatory approvals. More concretely, in the EEA, medicinal products can only be commercialized after obtaining a Marketing Authorization, or MA. There are two types of marketing authorizations:

- The Community MA, which is issued by the European Commission through the Centralized Procedure, based on the opinion of the Committee for Medicinal Products for Human Use of the European Medicines Agency, or EMA, and which is valid throughout the entire territory of the EEA. The Centralized Procedure is mandatory for certain types of products, such as biotechnology medicinal products, orphan medicinal products and medicinal products indicated for the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, auto-immune and viral diseases. The Centralized Procedure is optional for products containing a new active substance not yet authorized in the EEA, or for products that constitute a significant therapeutic, scientific or technical innovation or which are in the interest of public health in the EU; and
- National MAs, which are issued by the competent authorities of the Member States of the EEA and only cover their respective territory, are available for products not falling within the mandatory scope of the Centralized Procedure. Where a product has already been authorized for marketing in a Member State of the EEA, this National MA can be recognized in another Member State through the Mutual Recognition Procedure. If the product has not received a National MA in any Member State at the time of application, it can be approved simultaneously in various Member States through the Decentralized Procedure.

Under the above described procedures, before granting the MA, the EMA or the competent authorities of the Member States of the EEA assess the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy.

Data and marketing exclusivity

In the EEA, new products authorized for marketing, or reference products, qualify for eight years of data exclusivity and an additional two years of market exclusivity upon marketing authorization. The data exclusivity period prevents generic or biosimilar applicants from relying on the preclinical and clinical trial data contained in the dossier of the reference product when applying for a generic or biosimilar marketing authorization in the EU during a period of eight years from the date on which the reference product was first authorized in the EU. The market exclusivity period prevents a successful generic or biosimilar applicant from commercializing its product in the EU until 10 years have elapsed from the initial authorization of the reference product in the EU. The 10-year market exclusivity period can be extended to a maximum of eleven years if, during the first eight years of those 10 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.

Pediatric investigation plan

In the EEA, marketing authorization applications for new medicinal products not authorized have to include the results of studies conducted in the pediatric population, in compliance with a pediatric investigation plan, or PIP, agreed with the EMA's Pediatric Committee, or PDCO. The PIP sets out the timing and measures proposed to generate data to support a pediatric indication of the drug for which marketing authorization is being sought. The PDCO can grant a deferral of the obligation to implement some or all of the measures of the PIP until there are sufficient data to demonstrate the efficacy and safety of the product in adults. Further, the obligation to provide pediatric clinical trial data can be waived by the PDCO when this data is not needed or appropriate because the product is likely to be ineffective or unsafe in children, the disease or condition for which the product is intended occurs only in adult populations, or when the product does not represent a significant therapeutic benefit over existing treatments for pediatric patients. Once the marketing authorization is obtained in all Member States of the EU and trial results are included in the product information, even when negative, the product is eligible for six months' supplementary protection certificate extension.

Orphan drug designation and exclusivity

In the EEA, a medicinal product can be designated as an orphan drug if its sponsor can establish that the product 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 EU when the application is made, or that the product is intended for the diagnosis, prevention or treatment of a life-threatening, seriously debilitating or serious and chronic condition in the EU and that without incentives it is unlikely that the marketing of the drug in the EU would generate sufficient return to justify the necessary investment in development. For either of these conditions, the applicant must demonstrate that there exists no satisfactory method of diagnosis, prevention or treatment of the condition in question that has been authorized in the EU or, if such method exists, the drug will be of significant benefit to those affected by that condition. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

In the EEA, an application for designation as an orphan product can be made any time prior to the filing of an application for approval to market the product. Marketing authorization for an orphan drug leads to a ten-year period of market exclusivity. During this market exclusivity period, the EMA or the member state competent authorities, cannot accept another application for a marketing authorization, or grant a marketing authorization, for a similar medicinal product for the same indication. The period of market exclusivity is extended by two years for medicines that have also complied with an agreed PIP.

This period may, however, be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan drug designation, for example because the product is sufficiently profitable not to justify market exclusivity. Market exclusivity can be revoked only in very selected cases, such as consent from the marketing authorization holder, inability to supply sufficient quantities of the product, demonstration of "clinical superiority" by a similar medicinal product, or, after a review by the Committee for Orphan Medicinal Products, requested by a member state in the fifth year of the marketing exclusivity period (if the designation criteria are believed to no longer apply). Medicinal products designated as orphan drugs are eligible for incentives made available by the EU and its Member States to support research into, and the development and availability of, orphan drugs.

Rest of World Regulation

For other countries outside of the European Union and the United States, such as countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. Additionally, the clinical trials must be conducted in accordance with GCP requirements and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

If we fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Coverage and reimbursement

Successful commercialization of new drug products depends in part on the extent to which reimbursement for those drug products will be available from government health administration authorities, private health insurers, and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drug products they will pay for and establish reimbursement levels. The availability and extent of reimbursement by governmental and private payors is essential for most patients to be able to afford a drug product. Sales of drug products depend substantially, both domestically and abroad, on the extent to which the costs of drugs products are paid for by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or reimbursed by government health administration authorities, private health coverage insurers and other third-party payors.

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular drug products. In many countries, the prices of drug products are subject to varying price control mechanisms as part of national health systems. In general, the prices of drug products under such systems are substantially lower than in the United States. Other countries allow companies to fix their own prices for drug products but monitor and control company profits. Accordingly, in markets outside the United States, the reimbursement for drug products may be reduced compared with the United States.

In the United States, the principal decisions about reimbursement for new drug products are typically made by CMS, an agency within the HHS. CMS decides whether and to what extent a new drug product will be covered and reimbursed under Medicare, and private payors tend to follow CMS to a substantial degree. However, no uniform policy of coverage and reimbursement for drug products exists among third-party payors and coverage and reimbursement levels for drug products can differ significantly from payor to payor.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, established the Medicare Part D program to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities that provide coverage of outpatient prescription drugs. Unlike Medicare Parts A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. While all Medicare drug plans must give at least a standard level of coverage set by Medicare, Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for drugs for which we obtain marketing approval. Any negotiated prices for any of our products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental payors.

For a drug product to receive federal reimbursement under the Medicaid or Medicare Part B programs or to be sold directly to U.S. government agencies, the manufacturer must extend discounts to entities eligible to participate in the 340B drug pricing program. The required 340B discount on a given product is calculated based on the average manufacturer price, or AMP, and Medicaid rebate amounts reported by the manufacturer. As of 2010, the ACA expanded the types of entities eligible to receive discounted 340B pricing, although under the current state of the law these newly eligible entities (with the exception of children's hospitals) will not be eligible to receive discounted 340B pricing on orphan drugs. As 340B drug pricing is determined based on AMP and Medicaid rebate data, the revisions to the Medicaid rebate formula and AMP definition described above could cause the required 340B discount to increase. The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. The plan for the research was published in 2012 by the Department of Health and Human Services, the Agency for Healthcare Research and Quality and the National Institutes for Health, and periodic reports on the status of the research and related expenditures are made to Congress. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the research will have on the sales of our drug candidates, if any such drug or the condition that they are intended to treat are the subject of a trial. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's drug could adversely affect the sales of our drug candidate. If third-party payors do not consider our drugs to be cost-effective compared to other available therapies, they may not cover our drugs after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our drugs on a profitable basis.

These laws, and future state and federal healthcare reform measures may be adopted in the future, any of which may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for any product candidates for which we may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used.

Outside of the United States, the pricing of pharmaceutical products and medical devices is subject to governmental control in many countries. For example, in the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost effectiveness of a particular therapy to currently available therapies or so-called health technology assessments, in order to obtain reimbursement or pricing approval. Other countries may allow companies to fix their own prices for products, but monitor and control product volumes and issue guidance to physicians to limit prescriptions. Efforts to control prices and utilization of pharmaceutical products and medical devices will likely continue as countries attempt to manage healthcare expenditures.

Employees

As of December 31, 2018, we had 24 full-time employees, 16 of whom were in research and development of which 2 hold an M.D. and 9 hold Ph.D. degrees. The remaining 8 employees worked in finance, business development, human resources and administrative support of which 1 hold a Ph.D. None of our employees are represented by a labor union or covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Corporate and Other Information

We were incorporated as a Delaware corporation in 2016, under the name Eidos Therapeutics, Inc. Our principal executive offices are located at 101 Montgomery Street, Suite 2550 San Francisco, CA. Our telephone number is (415) 887-1471. Our website address is www.eidostx.com. References to our website address do not constitute incorporation by reference of the information contained on the website, and the information contained on the website is not part of this document.

We make available, free of charge on our corporate website, copies of our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, Proxy Statements, and all amendments to these reports, as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission pursuant to Section 13(a) or 15(d) of the Securities Exchange Act. We also show detail about stock trading by corporate insiders by providing access to SEC Forms 3, 4 and 5. This information may also be obtained from the SEC's on-line database, which is located at www.sec.gov. Our common stock is traded on the Nasdaq Global Select Market under the symbol "EIDX."

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012. As such, we are eligible for exemptions from various reporting requirements applicable to other public companies that are not emerging growth companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 and reduced disclosure obligations regarding executive compensation. We will remain an emerging growth company until the earlier of (1) December 31, 2023, (2) the last day of the first fiscal year in which our annual gross revenues are $1.07 billion or more, (3) the date on which we have, during the previous rolling three-year period, issued more than $1.0 billion in non-convertible debt securities, and (4) the date on which we are deemed to be a “large accelerated filer” as defined in the Securities Exchange Act of 1934, as amended (Exchange Act).

Item 1A. Risk Factors.

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, together with the other information included in this Annual Report on Form 10-K, including our financial statements and the related notes as well as our other public filings. We cannot assure you that any of the events discussed in the risk factors below will not occur. The occurrence of any of the events or developments described below could have a material and adverse impact on our business, results of operations, financial condition, and cash flows and future prospects and, if so, our future prospects would likely be materially and adversely affected. If any of such events were to happen, the trading price of our common stock could decline, and you could lose all or part of your investment. The risks described below are not the only ones that we may face, and additional risks or uncertainties not known to us or that we currently deem immaterial may also impair our business and future prospects.

Risk related to our financial position and need for additional capital

Drug development is a highly uncertain undertaking and involves a substantial degree of risk. We have incurred significant losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future. We have only one product candidate in development and have not generated any revenue since our inception, which, together with our limited operating history, may make it difficult for you to assess our future viability.

We are a clinical development-stage biopharmaceutical company with a limited operating history upon which you can evaluate our business and prospects. We have no products approved for commercial sale and have not generated any revenue from product sales. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. To date, we have focused principally on developing our only product candidate, AG10, which is in clinical development and will require substantial additional development time and resources before we would be able to apply for or receive regulatory approvals and begin generating revenue from product sales.

We are not profitable and have incurred losses in each year since our inception in August 2013. Our net losses for the years ended December 31, 2016, 2017 and 2018 were $2.5 million, $11.9 million and $40.7 million, respectively. As of December 31, 2018, we had an accumulated deficit of $65.3 million. We have not generated any revenue since our inception and have financed our operations solely through the sale of equity securities and convertible debt. We continue to incur significant research and development and other expenses related to our ongoing operations and expect to incur losses for the foreseeable future. We anticipate these losses will increase significantly and we will not generate any revenue from product sales until after we have successfully completed clinical development and received regulatory approval for the commercial sale of AG10 or any other product candidate that we may identify and pursue.

Because of the numerous risks and uncertainties associated with drug development, we are unable to predict the timing or amount of our expenses, or when we will be able to generate any meaningful revenue or achieve or maintain profitability, if ever. In addition, our expenses could increase beyond our current expectations if we are required by the U.S. Food and Drug Administration, or FDA, or comparable foreign regulatory authorities, to perform studies in addition to those that we currently anticipate, or if there are any delays in any of our or our future collaborators’ clinical trials or the development of AG10 or other product candidates that we may identify. Even if AG10 or any future product candidate that we may identify is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate and ongoing compliance efforts.

We may never be able to develop or commercialize a marketable drug or achieve profitability. Revenue from the sale of any product candidate for which regulatory approval is obtained will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval, the accepted price for the product, the ability to obtain reimbursement at any price and whether we own the commercial rights for that territory. If the number of addressable patients is not as significant as we anticipate, the indication approved by regulatory authorities is narrower than we expect, or the reasonably accepted population for treatment is narrowed by competition, physician choice or treatment guidelines, we may not generate significant revenue from sales of such products, even if approved. Even if we are able to generate revenue from the sale of any approved products, we may not become profitable and may need to obtain additional funding to continue operations. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our failure to achieve sustained profitability would depress the value of our company and could impair our ability to raise capital, expand our business, diversify our research and development pipeline, market AG10 or any other product candidates we may identify and pursue, if approved, or continue our operations. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' equity and working capital. In any particular quarter, our operating results could be below the expectations of securities analysts or investors, which could cause our stock price to decline.

We will require substantial additional funding to achieve our business goals. If we are unable to obtain this funding when needed and on acceptable terms, we could be forced to delay, limit or terminate our product development efforts.

We have begun enrolling patients in a Phase 3 clinical trial of AG10, our only clinical development candidate, in ATTR-CM and are preparing to advance AG10 into a Phase 3 clinical trial in ATTR-PN. Developing biopharmaceutical products is expensive and time-consuming, and we expect our research and development expenses to increase substantially in connection with our ongoing activities, particularly as we advance AG10 in planned and future clinical trials. We are also responsible for license maintenance fees, milestone payments and royalties to Stanford University, or Stanford. Because the outcome of any clinical development and regulatory approval process is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development, regulatory approval process and commercialization of AG10 and any future product candidates we may identify.

Based on current business plans and assuming no financing, we believe that our existing cash and cash equivalents will be sufficient to fund our cash requirements through at least the next twelve months. However, our operating plan may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings or other sources, such as strategic collaborations or license and development agreements. Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize AG10 and other product candidates that we may identify and pursue. Moreover, such financing may result in dilution to stockholders, imposition of debt covenants and repayment obligations, or other restrictions that may affect our business. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

Our future funding requirements will depend on many factors, including, but not limited to:

- the time and cost necessary to initiate, conduct and complete our Phase 3 clinical trials of AG10 in ATTR-CM and ATTR-PN, to complete the open-label extension of our Phase 2 clinical trial of AG10 in ATTR-CM and to pursue regulatory approvals for AG10, and the costs of post-marketing studies that could be required by regulatory authorities;
- the progress and results of our ongoing Phase 2 open-label extension and our ongoing and planned Phase 3 clinical trials of AG10;
- the progress, timing, scope and costs of our nonclinical studies, clinical trials and other related activities, including the ability to enroll patients in a timely manner for our planned Phase 3 clinical trials of AG10 and potential future clinical trials;
- the costs of obtaining clinical and commercial supplies of AG10 and any other product candidates we may identify and develop;
- our ability to successfully commercialize AG10 and any other product candidates we may identify and develop;

- the manufacturing, selling and marketing costs associated with AG10 and any other product candidates we may identify and develop, including the cost and timing of expanding our sales and marketing capabilities;
- the amount and timing of sales and other revenues from AG10 and any other product candidates we may identify and develop, including the sales price and the availability of adequate third-party reimbursement;
- the cash requirements of any future acquisitions or discovery of product candidates;
- the time and cost necessary to respond to technological and market developments;
- the costs of acquiring, licensing or investing in intellectual property rights, products, product candidates and businesses;
- our ability to attract, hire and retain qualified personnel; and
- the costs of maintaining, expanding and protecting our intellectual property portfolio.

Additional funds may not be available when we need them, on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to delay, limit or terminate one or more of our research or development programs or the commercialization of any product candidates or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, prospects, financial condition and results of operations.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights to AG10 or any future product candidates which we develop on unfavorable terms to us.

We may seek additional capital through a combination of public and private equity offerings, debt financings, strategic partnerships and alliances and licensing arrangements. We, and indirectly, our stockholders, will bear the cost of issuing and servicing such securities. Because our decision to issue debt or equity securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of any future offerings. To the extent that we raise additional capital through the sale of equity or debt securities, your ownership interest will be diluted, and the terms may include liquidation or other preferences that adversely affect your rights as a stockholder. The incurrence of indebtedness would result in increased fixed payment obligations and could involve restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. Additionally, any future collaborations we enter into with third parties may provide capital in the near term but limit our potential cash flow and revenue in the future. If we raise additional funds through strategic partnerships and alliances and licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies or product candidates or grant licenses on terms unfavorable to us.

Risk related to our business and the clinical development, regulatory review and approval of our product candidates

We are heavily dependent on the success of our only product candidate, AG10, and we have not identified any other clinical development candidates through our research activities. If we are unable to successfully complete clinical development, obtain regulatory approval for, or commercialize AG10, or experience delays in doing so, our business will be materially harmed.

To date, we have invested all of our efforts and financial resources to the development of AG10, including conducting preclinical studies and clinical trials and providing general and administrative support for these operations. Our future success is dependent on our ability to successfully develop, obtain regulatory approval for, and commercialize AG10. Before we can generate any revenues from sales of AG10, we will be required to complete additional clinical development, including, among other things, longer-term and larger registrational clinical trials of AG10, seek and obtain regulatory approval, secure adequate manufacturing supply to support larger clinical trials and commercial sales and build a commercial organization. Further, the success of AG10 will depend on patent and trade secret protection, obtaining and maintaining regulatory exclusivity, acceptance of AG10 by patients, the medical community and third-party payors, its ability to compete with other therapies, healthcare coverage and reimbursement, and maintenance of an acceptable safety profile following approval, among other factors. If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize AG10, which would materially harm our business.

Currently, AG10 is our only product candidate, and it may be years before we can complete the clinical development activities necessary to apply for regulatory approval of AG10, if at all. We have not yet identified any other product candidates for studies that would enable the filing of an investigational new drug application, or IND, or for clinical evaluation. We cannot be certain that AG10 will be successful in clinical trials or receive regulatory approval. If we do not receive regulatory approval for, or otherwise fail to successfully commercialize, AG10, we may need to discontinue our operations as currently contemplated unless we identify other product candidates, advance them through preclinical and clinical development and apply for regulatory approvals, which could be time-consuming and costly, and may adversely affect our business, prospects, financial condition and results of operations.

If we are unable to obtain regulatory approval in one or more jurisdictions for AG10 or any other product candidates that we may identify and develop, our business will be substantially harmed.

We cannot commercialize a product until the appropriate regulatory authorities have reviewed and approved the product candidate. Approval by the FDA and comparable foreign regulatory authorities is lengthy and unpredictable and depends upon numerous factors. Approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions, which may cause delays in the approval or the decision not to approve an application. We have not obtained regulatory approval for AG10, and it is possible that neither AG10 nor any other product candidates which we may seek to develop in the future will ever obtain regulatory approval.

Applications for AG10 or any other product candidates we may develop could fail to receive regulatory approval for many reasons, including but not limited to:

- our inability to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that AG10 or any other product candidate we may develop is safe and effective;
- the FDA or comparable foreign regulatory authorities may disagree with the design, endpoints or implementation of our clinical trials, including those of our ongoing and planned Phase 3 clinical trials;
- the population studied in the clinical program may not be sufficiently broad or representative to assure safety in the full population for which we seek approval;
- the FDA's or comparable foreign regulatory authorities' requirement for additional preclinical studies or clinical trials beyond those that we currently anticipate;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from nonclinical studies or clinical trials;
- the data collected from clinical trials of AG10 and other product candidates that we may identify and pursue may not be sufficient to support the submission of a new drug application, or NDA, or other submission for regulatory approval in the United States or elsewhere;
- we may be unable to demonstrate to the FDA or comparable foreign regulatory authorities that a product candidate's risk-benefit ratio for its proposed indication is acceptable;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes, test procedures and specifications, or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may change in a manner that renders our clinical trial design or data insufficient for approval.

The lengthy approval process, as well as the unpredictability of the results of clinical trials, may result in our failure to obtain regulatory approval to market AG10 or any other product candidates that we may pursue in the United States or elsewhere, which would significantly harm our business, prospects, financial condition and results of operations.

We may encounter substantial delays in our clinical trials, or may not be able to conduct or complete our clinical trials on the timelines we expect, if at all.

Clinical testing is expensive, time consuming, and subject to uncertainty. We cannot guarantee that any of our ongoing and planned clinical trials will be conducted as planned or completed on schedule, if at all. Moreover, even if these trials are initiated or conducted on a timely basis, issues may arise that could suspend or terminate such clinical trials. A failure of one or more clinical trials can occur at any stage of testing, and our ongoing and future clinical trials may not be successful. Events that may prevent successful or timely initiation or completion of clinical trials include:

- inability to generate sufficient preclinical, toxicology, or other *in vivo* or *in vitro* data to support the initiation or continuation of clinical trials;
- delays in confirming target engagement, patient selection or other relevant biomarkers to be utilized in preclinical and clinical product candidate development;
- delays in reaching a consensus with regulatory agencies on study design;
- delays in reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- delays in identifying, recruiting and training suitable clinical investigators;
- delays in obtaining required Institutional Review Board, or IRB, approval at each clinical trial site;
- imposition of a temporary or permanent clinical hold by regulatory agencies for a number of reasons, including after review of an IND or amendment, clinical trial application, or CTA, or amendment, or equivalent application or amendment; as a result of a new safety finding that presents unreasonable risk to clinical trial participants; a negative finding from an inspection of our clinical trial operations or study sites;
- developments in marketed drugs for ATTR or in clinical trials conducted by competitors for other drug candidates targeting ATTR that raise regulatory or safety concerns about risk to patients of the treatment, including the approach of TTR stabilization;
- a finding by the FDA or foreign regulatory agency that the investigational protocol or plan is clearly deficient to meet its stated objectives;
- delays in identifying, recruiting and enrolling suitable patients to participate in our clinical trials, and delays caused by patients withdrawing from clinical trials or failing to return for post-treatment follow-up;
- difficulty collaborating with patient groups and investigators;
- failure by our CROs, other third parties, or us to adhere to clinical trial requirements;
- failure to perform in accordance with the FDA's or any other regulatory authority's current good clinical practices, or cGCP, requirements, or regulatory guidelines in other countries;
- occurrence of adverse events associated with the product candidate that are viewed to outweigh its potential benefits;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols;
- changes in the standard of care on which a clinical development plan was based, which may require new or additional trials;
- the cost of clinical trials of AG10 or any our product candidates that we may identify and pursue being greater than we anticipate;
- clinical trials of AG10 or any other product candidates that we may identify and pursue producing negative or inconclusive results, which may result in our deciding, or regulators requiring us, to conduct additional clinical trials or abandon product development programs;
- transfer of manufacturing processes to larger-scale facilities operated by a contract manufacturing organization, or CMO, or by us, and delays or failure by our CMOs or us to make any necessary changes to such manufacturing process; and
- delays in manufacturing, testing, releasing, validating, or importing/exporting sufficient stable quantities of AG10 or other product candidates that we may identify for use in clinical trials or the inability to do any of the foregoing.

Any inability to successfully initiate or complete clinical trials could result in additional costs to us or impair our ability to generate revenue. In addition, if we make manufacturing or formulation changes to AG10 or other product candidates that we may identify, we may be required to or we may elect to conduct additional studies to bridge our modified product candidates to earlier versions. Clinical trial delays could also shorten any periods during which our products have patent protection and may allow our competitors to bring products to market before we do, which could impair our ability to successfully commercialize AG10 or other product candidates that we may identify and may harm our business and results of operations.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the data safety monitoring board, or DSMB, for such trial or by the FDA or other regulatory authority, or if the IRBs of the institutions in which such trials are being conducted suspend or terminate the participation of their clinical investigators and sites subject to their review. Such authorities may suspend or terminate a clinical trial due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a product candidate, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial.

Delays in the initiation, conduct or completion of any clinical trial of AG10 or other product candidates that we may develop will increase our costs, slow down our product candidate development and approval process and delay or potentially jeopardize our ability to commence product sales and generate revenue. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of AG10 or any future product candidates which we may develop. In the event we identify any additional product candidates to pursue, we cannot be sure that submission of an IND or a CTA will result in the FDA or comparable foreign regulatory authority allowing clinical trials to begin in a timely manner, if at all. Any of these events could have a material adverse effect on our business, prospects, financial condition and results of operations.

Our clinical trials may fail to demonstrate substantial evidence of the safety and effectiveness of AG10 or any other product candidates that we may identify and pursue, which would prevent, delay or limit the scope of regulatory approval and commercialization.

Before obtaining regulatory approvals for the commercial sale of AG10 or any other product candidate that we may identify and pursue, we must demonstrate through lengthy, complex and expensive preclinical studies and clinical trials that the applicable product candidate is both safe and effective for use in each target indication. Each product candidate must demonstrate an adequate risk versus benefit profile in its intended patient population and for its intended use.

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical development process. Most product candidates that begin clinical trials are never approved by regulatory authorities for commercialization. We have limited experience in designing clinical trials and may be unable to design and execute a clinical trial to support marketing approval. We cannot be certain that our current clinical trials or any other future clinical trials will be successful. Additionally, any safety concerns observed in any one of our clinical trials in our targeted indications could limit the prospects for regulatory approval of our product candidates in those and other indications, which could have a material adverse effect on our business, financial condition and results of operations. In addition, even if such clinical trials are successfully completed, we cannot guarantee that the FDA or comparable foreign regulatory authorities will interpret the results as we do, and more trials could be required before we submit our product candidates for approval. To the extent that the results of the trials are not satisfactory to the FDA or comparable foreign regulatory authorities for support of a marketing application, we may be required to expend significant resources, which may not be available to us, to conduct additional trials in support of potential approval of our product candidates. Even if regulatory approval is secured for AG10 or any other product candidate we may identify and pursue, the terms of such approval may limit the scope and use of our product candidate. For example, in the event another therapy in the same class as AG10 is approved with one or more claims with respect to efficacy endpoints that are demonstrated with greater statistical significance than the same or similar claim(s) in our clinical trials for AG10, the scope of the approval for AG10 could be limited to a second-line claim for patients who cannot tolerate the first-line product. Any of these events could limit the commercial potential of AG10 and have a material adverse effect on our business, prospects, financial condition and results of operations.

Results of earlier studies or clinical trials, including cross-trial comparisons of results that are not derived from head-to-head clinical trials, may not be predictive of future clinical trial results, and initial studies or clinical trials may not establish an adequate safety or efficacy profile for AG10 and other product candidates that we may pursue to justify proceeding to advanced clinical trials or an application for regulatory approval.

The results of nonclinical and preclinical studies and Phase 1 or Phase 2 clinical trials of AG10 or any other product candidates that we may pursue may not be predictive of the results of later-stage clinical trials, and interim results of a clinical trial do not necessarily predict final results. For example, our preclinical and preliminary clinical observations that AG10 potently stabilizes TTR in human serum may not be replicated in later stage clinical trials.

Additionally, some of our preclinical studies in which AG10 demonstrated greater TTR stabilization and inhibition of amyloid fibril formation than tafamidis were conducted using synthesized, research-grade tafamidis and therefore may not be indicative of the comparative efficacy of AG10 to commercially available tafamidis. The results of clinical trials in one set of patients or disease indications may not be predictive of those obtained in another. In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, changes in and adherence to the dosing regimen and other clinical trial protocols and the rate of dropout among clinical trial participants. In addition, certain of our hypotheses regarding the potential clinical and therapeutic benefit of AG10 compared to other TTR stabilizers are based on cross-trial comparisons of results that were not derived from head-to-head preclinical studies or clinical trials. These observations, which do not reflect robust comparative analyses, may suggest misleading similarities or differences due to differences in study protocols, conditions and patient populations, and may not be reliable predictors of the relative efficacy or other benefits of AG10 compared to other product candidates that may be approved or are in development for the treatment of ATTR.

Further, preclinical and clinical data are often susceptible to various interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy profile despite having progressed through nonclinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier studies, and we cannot be certain that we will not face similar setbacks. Even if early stage clinical trials are successful, we may need to conduct additional clinical trials of AG10 or other product candidates that we may pursue in additional patient populations or under different treatment conditions before we are able to seek approvals from the FDA and regulatory authorities outside the United States to market and sell these product candidates. Our failure obtain marketing approval for AG10 or any other product candidate we may choose to develop in our ongoing and any future clinical trials would substantially harm our business, prospects, financial condition and results of operations.

We may encounter difficulties enrolling patients in our clinical trials, and our clinical development activities could thereby be delayed or otherwise adversely affected.

The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the trial until its conclusion. We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons, including:

- the size and nature of the patient population;
- the patient eligibility criteria defined in the applicable clinical trial protocols, which may limit the patient populations eligible for our clinical trials to a greater extent than competing clinical trials for the same indication;
- the size of the study population required for analysis of the trial's primary endpoints;
- the proximity of patients to a trial site;
- the design of the trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;

- the approval of competing products approved for the treatment of ATTR or product candidates currently under development for ATTR, or competing clinical trials for similar therapies or targeting patient populations meeting our patient eligibility criteria;
- clinicians' and patients' perceptions as to the potential advantages and side effects of the product candidate being studied in relation to other available therapies and product candidates;
- our ability to obtain and maintain patient consents; and
- the risk that patients enrolled in clinical trials will not complete such trials, for any reason.

If we have difficulty enrolling sufficient numbers of patients to conduct our clinical trials as planned, we may need to delay or terminate ongoing or planned clinical trials, either of which would have an adverse effect on our business.

If serious adverse events or unacceptable side effects are identified during the development of AG10 or other product candidates that we may develop, we may need to delay, limit or terminate our clinical development activities.

Clinical trials by their nature utilize a sample of the potential patient population. To date, we have only evaluated AG10 in a limited number of subjects at a limited duration of exposure in our Phase 1 and Phase 2 clinical trials and the duration of exposure in our Phase 3 clinical trials is expected to be significantly longer. Accordingly, any rare and severe side effects of AG10 may be uncovered in our ongoing studies or in larger, subsequent trials that we may conduct, such as our ongoing Phase 2 OLE and Phase 3 trials of AG10 in ATTR-CM and our planned Phase 3 clinical trial in ATTR-PN. Additionally, although our animal safety pharmacology studies of AG10 demonstrated a wide safety margin between anticipated therapeutic exposures and doses associated with toxicity and no dose limiting toxicities were established in the 9 month GLP toxicology dog study, in prior toxicology studies of shorter duration, at doses above the no adverse effect level, dogs experienced dose limiting toxicities of gastrointestinal effects including vomiting, dehydration and weight loss. Many product candidates that initially showed promise in early stage testing have later been found to cause side effects that prevented their further development. If AG10 or any product candidates that we may develop are associated with undesirable side effects in clinical trials or have characteristics that are unexpected, we may need to abandon their development or limit their development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective, which could adversely affect our business, prospects, financial condition and results of operations.

We intend to conduct clinical trials for AG10 or other product candidates that we may identify outside the United States, and the FDA and comparable foreign regulatory authorities may not accept data from such trials.

We intend to conduct one or more of our clinical trials outside the United States, including in Europe. For instance, subject to authorization from applicable regulatory authorities, we plan to initiate a Phase 3 clinical trial of AG10 in ATTR-PN in 2019. We do not intend to file an IND with the FDA in connection with this clinical trial as it will be conducted outside of the United States. The acceptance of study data from clinical trials conducted outside the United States or another jurisdiction by the FDA or comparable foreign regulatory authority may be subject to certain conditions. In cases where data from foreign clinical trials are intended to serve as the basis for marketing approval in the United States, the FDA will generally not approve the application on the basis of foreign data alone unless (i) the data are applicable to the U.S. population and U.S. medical practice; and (ii) the trials were performed by clinical investigators of recognized competence and pursuant to cGCP regulations. Additionally, the FDA's clinical trial requirements, including sufficient size of patient populations and statistical powering, must be met. Many foreign regulatory authorities have similar approval requirements. In addition, such foreign trials would be subject to the applicable local laws of the foreign jurisdictions where the trials are conducted. There can be no assurance that the FDA or any comparable foreign regulatory authority will accept data from trials conducted outside of the United States or the applicable jurisdiction, including our planned Phase 3 clinical trial of AG10 in ATTR-PN. If the FDA or any comparable foreign regulatory authority does not accept such data, it would result in the need for additional trials, which would be costly and time-consuming and delay aspects of our business plan, and which may result in AG10 or other product candidates that we may develop not receiving approval or clearance for commercialization in the applicable jurisdiction.

Even if we obtain FDA approval for AG10 or any other product candidates that we may identify and pursue in the United States, we may never obtain approval to commercialize AG10 or other product candidates that we may develop outside of the United States, which would limit our ability to realize their full market potential.

In order to market any products outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding safety and effectiveness. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not mean that regulatory approval will be obtained in any other country. Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approval could result in difficulties and costs for us and require additional non-clinical studies or clinical trials which could be costly and time-consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of AG10 or any other product candidates that we may identify and pursue in those countries. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. We do not have any product candidates approved for sale in any jurisdiction, including international markets, and we do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, or if regulatory approval in international markets is delayed, our target market will be reduced and our ability to realize the full market potential of our products will be harmed.

Although the FDA and EMA have granted orphan drug designation for AG10 for the treatment of transthyretin amyloidosis, we may not receive orphan drug designation for any other product candidates for which we may submit orphan drug designation requests, and any orphan drug designations that we have received or may receive in the future may not confer marketing exclusivity or other expected commercial benefits for AG10 or any of our other product candidates.

Our business strategy focuses on the development of product candidates for the treatment of transthyretin amyloidosis that may be eligible for FDA or EU orphan drug designation. Regulatory authorities in some jurisdictions, including the United States and the EU, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug as an orphan drug if it is intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. In the EU, the Committee for Orphan Medicinal Products of the EMA grants orphan drug designation to promote the development of medical products that are intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition affecting not more than five in 10,000 persons in the EU (or where it is unlikely that the development of the medicine would generate sufficient return to justify the investment) and for which no satisfactory method of diagnosis, prevention, or treatment is authorized or, if a method exists, the product would be of significant benefit to those affected by the condition. In October 2018, the FDA granted orphan drug designation to AG10 in the United States for the treatment of transthyretin amyloidosis, or ATTR, and in November 2018, the EMA granted the designation of AG10 as an orphan medicinal product in the EU for the treatment of transthyretin amyloidosis, or ATTR. Although the diagnosed ATTR patient population in the United States is currently below 200,000, if the size of the population is shown to be greater as a result of increased rates of diagnosis or otherwise, ATTR may not in the future qualify as an orphan indication for any other product candidate we pursue.

Generally, if a drug with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the drug is entitled to a period of marketing exclusivity, which precludes the FDA, the EMA or comparable foreign regulatory authority from approving another marketing application for the same drug for the same indication for that time period. The applicable period is seven years in the United States and 10 years in the EU. The EU exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA, the EMA or comparable foreign regulatory authority 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.

Although the FDA and EMA have granted orphan drug designation for AG10 for the treatment of ATTR, we may apply for orphan drug designation for AG10 in other jurisdictions, or for other product candidates we may develop and pursue in the future. Applicable regulatory authorities may not grant us these additional designations. In addition, the exclusivity granted under any orphan drug designation that we have received from the FDA and EMA or may receive from any other regulatory authorities, may not effectively protect AG10 or any other product

candidate that we may develop and pursue from competition because different drugs can be approved for the same condition and the same drug can be approved for different conditions but used off-label. Even after an orphan drug is approved, the FDA can subsequently approve the same drug for the same condition if the FDA 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. In addition, a designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. Further, orphan drug designation neither shortens the development or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process.

Any inability to secure or maintain orphan drug designation or the exclusivity benefits of this designation would have an adverse impact on our ability to develop and commercialize our product candidates. In addition, even if any orphan drug designations we receive are maintained, we may be unable to realize significant commercial benefits from these orphan drug designations or exclusivities for AG10 (if approved) or any other product candidate we pursue.

We may not elect or be able to take advantage of any expedited development or regulatory review and approval processes available to product candidates granted breakthrough therapy or fast track designation by the FDA.

We intend to evaluate and continue ongoing discussions with the FDA on regulatory strategies to rapidly advance the development of AG10. For example, potential expedited development pathways include breakthrough therapy or fast track designation. The breakthrough therapy program is designed for product candidates intended to treat a serious or life-threatening condition, and preliminary clinical evidence indicates that the product candidate may demonstrate substantial improvement on a clinically significant endpoint(s) over available therapies. The fast track program is designed for product candidates that treat a serious or life-threatening condition, and nonclinical or clinical data demonstrate the potential to address an unmet medical need. Although we believe AG10 could potentially qualify under either or both of the breakthrough therapy and fast track programs, we may elect not to pursue either of these programs, and the FDA has broad discretion whether or not to grant these designations. Accordingly, even if we believe a particular product candidate is eligible for breakthrough therapy or fast track designation, we cannot assure you that the FDA would decide to grant it. Even if we do receive breakthrough therapy or fast track designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw breakthrough therapy or fast track designation if it believes that the product no longer meets the qualifying criteria. Our business may be harmed if we are unable to avail ourselves of these or any other expedited development and regulatory pathways.

Even if we obtain regulatory approval for a product candidate, our products will remain subject to extensive regulatory scrutiny.

If AG10 or other product candidates that we may develop are approved, they will be subject to ongoing regulatory requirements for manufacturing, labeling, packaging, storage, advertising, promotion, sampling, record-keeping, conduct of post-marketing studies, and submission of safety, efficacy, and other post-market information, including both federal and state requirements in the United States and requirements of comparable foreign regulatory authorities.

Manufacturers and manufacturers' facilities are required to comply with extensive requirements imposed by the FDA and comparable foreign regulatory authorities, including ensuring that quality control and manufacturing procedures conform to current good manufacturing practices, or cGMP, regulations. As such, we and our contract manufacturers will be subject to continual review and inspections to assess compliance with cGMP and adherence to commitments made in any NDA or marketing authorization application, or MAA. Accordingly, we and others with whom we work must continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, production and quality control.

Any regulatory approvals that we receive for AG10 or other product candidates that we may develop will be subject to limitations on the approved indicated uses for which the product may be marketed and promoted or to the conditions of approval, or contain requirements for potentially costly post-marketing testing. We will be required to report certain adverse reactions and production problems, if any, to the FDA and comparable foreign regulatory authorities. Any new legislation addressing drug safety issues could result in delays in product development or commercialization, or increased costs to assure compliance. The FDA and other agencies, including the Department of Justice, closely regulate and monitor the post-approval marketing and promotion of products to ensure that they are manufactured, marketed and distributed only for the approved indications and in accordance with the provisions of the approved labeling. We will have to comply with requirements concerning advertising and promotion for our products. Promotional communications with respect to prescription drugs are

subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved label. As such, we may not promote our products for indications or uses for which they do not have approval. The holder of an approved NDA or MAA must submit new or supplemental applications and obtain approval for certain changes to the approved product, product labeling, or manufacturing process. We could also be asked to conduct post-marketing clinical trials to verify the safety and efficacy of our products in general or in specific patient subsets. If original marketing approval was obtained via the accelerated approval pathway, we could be required to conduct a successful post-marketing clinical trial to confirm clinical benefit for our products. An unsuccessful post-marketing study or failure to complete such a study could result in the withdrawal of marketing approval.

If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, such regulatory agency may impose restrictions on that product or us, including requiring withdrawal of the product from the market. If we fail to comply with applicable regulatory requirements, a regulatory agency or enforcement authority may, among other things:

- issue warning letters that would result in adverse publicity;
- impose civil or criminal penalties;
- suspend or withdraw regulatory approvals;
- suspend any of our ongoing clinical trials;
- refuse to approve pending applications or supplements to approved applications submitted by us;
- impose restrictions on our operations, including closing our contract manufacturers' facilities;
- seize or detain products; or
- require a product recall.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely affect our ability to commercialize and generate revenue from our products. If regulatory sanctions are applied or if regulatory approval is withdrawn, the value of our company and our operating results will be adversely affected.

The FDA and other regulatory agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses.

If AG10 or other product candidates that we may identify are approved and we are found to have improperly promoted off-label uses of those products, we may become subject to significant liability. The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about prescription products, such as AG10 if approved. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in the product's approved labeling. If we are found to have promoted such off-label uses, we may become subject to significant liability. The federal government has levied large civil and criminal fines against companies for alleged improper promotion of off-label use and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed. If we cannot successfully manage the promotion of our product candidates, if approved, we could become subject to significant liability, which would materially adversely affect our business and financial condition.

If we engage in acquisitions or strategic partnerships, this may increase our capital requirements, dilute our stockholders, cause us to incur debt or assume contingent liabilities, and subject us to other risks.

We may engage in various acquisitions and strategic partnerships in the future, including licensing or acquiring complementary products, intellectual property rights, technologies, or businesses. Any acquisition or strategic partnership may entail numerous risks, including:

- increased operating expenses and cash requirements;
- the assumption of indebtedness or contingent liabilities;
- the issuance of our equity securities which would result in dilution to our stockholders;

- assimilation of operations, intellectual property, products and product candidates of an acquired company, including difficulties associated with integrating new personnel;
- the diversion of our management's attention from our existing product programs and initiatives in pursuing such an acquisition or strategic partnership;
- retention of key employees, the loss of key personnel, and uncertainties in our ability to maintain key business relationships;
- risks and uncertainties associated with the other party to such a transaction, including the prospects of that party and their existing products or product candidates and regulatory approvals; and
- our inability to generate revenue from acquired intellectual property, technology and/or products sufficient to meet our objectives or even to offset the associated transaction and maintenance costs.

In addition, if we undertake such a transaction, we may issue dilutive securities, assume or incur debt obligations, incur large one-time expenses and acquire intangible assets that could result in significant future amortization expense.

Risks related to our reliance on third parties

We expect to rely on third parties to conduct our clinical trials and some aspects of our research and preclinical testing, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, research, or testing.

We currently rely and expect to continue to rely on third parties, such as CROs, clinical data management organizations, medical institutions, and clinical investigators, to conduct some aspects of our research and preclinical testing and our clinical trials. Any of these third parties may terminate their engagements with us or be unable to fulfill their contractual obligations. If any of our relationships with these third parties terminate, we may not be able to enter into arrangements with alternative third parties on commercially reasonable terms, or at all. If we need to enter into alternative arrangements, it would delay our product development activities.

Our reliance on these third parties for research and development activities reduces our control over these activities but does not relieve us of our responsibilities. For example, we remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA and comparable foreign regulatory authorities require us to comply with cGCPs for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible, reproducible and accurate and that the rights, integrity, and confidentiality of trial participants are protected. For any violations of laws and regulations during the conduct of our clinical trials, we could be subject to untitled and warning letters or enforcement action that may include civil penalties up to and including criminal prosecution. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database within certain timeframes. Failure to do so can result in fines, adverse publicity, and civil and criminal sanctions.

If these third parties do not successfully carry out their contractual duties, meet expected deadlines, or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for any product candidates we may develop and will not be able to, or may be delayed in our efforts to, successfully commercialize our medicines. Our failure or the failure of these third parties to comply applicable regulatory requirements or our stated protocols could also subject us to enforcement action.

We also expect to rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of any product candidates we may develop or commercialization of our medicines, producing additional losses and depriving us of potential product revenue.

We rely entirely on third parties for the manufacturing of AG10 or other product candidates that we may develop for preclinical studies and clinical trials and expect to continue to do so for commercialization. Our business could be harmed if those third parties fail to provide us with sufficient quantities of drug product, or fail to do so at acceptable quality levels or prices.

We do not currently have, nor do we plan to acquire, the infrastructure or capability internally to manufacture drug supplies for our ongoing and planned Phase 3 clinical trials of AG10 or any other future clinical trials that we may conduct, and we lack the resources to manufacture any product candidates on a commercial scale. We rely, and expect to continue to rely, on third-party manufacturers to produce AG10 or other product candidates that we may identify for our clinical trials, as well as for commercial manufacture if any of our product candidates receives marketing approval. Although we generally do not begin a clinical trial unless we believe we have a sufficient supply of a product candidate to complete the trial, any significant delay or discontinuity in the supply of a product candidate, or the raw material components thereof, for an ongoing clinical trial due to the need to replace a third-party manufacturer could considerably delay the clinical development and potential regulatory approval of our product candidates, which could harm our business and results of operations. We also expect to rely on third parties for the manufacturing of commercial supply of AG10 or any other product candidates, if approved.

We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possible termination or non-renewal of the agreement by the third party at a time that is costly or inconvenient for us.

Furthermore, all of our contract manufacturers are engaged with other companies to supply and/or manufacture materials or products for such companies, which exposes our manufacturers to regulatory risks for the production of such materials and products. As a result, failure to meet the regulatory requirements for the production of those materials and products may affect the regulatory clearance of our contract manufacturers' facilities generally. If the FDA or a comparable foreign regulatory agency does not approve these facilities for the manufacture of our product candidates or if any agency withdraws its approval in the future, we may need to find alternative manufacturing facilities, which would negatively impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

AG10 and any future product candidates that we may develop may compete with other product candidates and marketed drugs for access to manufacturing facilities. Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. We are currently manufacturing AG10 through a third party and have adequate supplies to conduct our ongoing Phase 3 clinical trial of AG10 in ATTR-CM and planned Phase 3 clinical trial of AG10 in ATTR-PN. If we are unable to enter into relationships with additional contract manufacturers, or our current or future contract manufacturers cannot perform as agreed, we may experience delays and incur additional costs in our clinical development and commercialization activities. Our current and anticipated future dependence upon others for the manufacturing of AG10 or other product candidates that we may identify, or marketed drugs may adversely affect our future profit margins and our ability to commercialize any product candidates that receive marketing approval on a timely and competitive basis.

If the contract manufacturing facilities on which we rely do not continue to meet regulatory requirements or are unable to meet our supply demands, our business will be harmed.

All entities involved in the preparation of therapeutics for clinical trials or commercial sale, including our existing contract manufacturers for AG10, are subject to extensive regulation. Components of a finished therapeutic product approved for commercial sale or used in late-stage clinical trials must be manufactured in accordance with cGMP, or similar regulatory requirements outside the United States. These regulations govern manufacturing processes and procedures, including recordkeeping, and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Poor control of production processes can lead to the introduction of contaminants or to inadvertent changes in the properties or stability of AG10. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, suspension of production, seizures or recalls of product candidates or marketed drugs, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect clinical or commercial supplies of AG10.

We or our contract manufacturers must supply all necessary documentation in support of an NDA or MAA on a timely basis and must adhere to regulations enforced by the FDA and other regulatory agencies through their facilities inspection program. Some of our contract manufacturers have never produced a commercially approved pharmaceutical product and therefore have not obtained the requisite regulatory authority approvals to do so. The facilities and quality systems of some or all of our third-party contractors must pass a pre-approval inspection for compliance with the applicable regulations as a condition of regulatory approval of AG10 or any of our other potential products. In addition, the regulatory authorities may, at any time, audit or inspect a manufacturing facility involved with the preparation of AG10 or our other potential products or the associated quality systems for compliance with the regulations applicable to the activities being conducted. Although we oversee the contract manufacturers, we cannot control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with the regulatory requirements. If these facilities do not pass a pre-approval plant inspection, regulatory approval of the products may not be granted or may be substantially delayed until any violations are corrected to the satisfaction of the regulatory authority, if ever.

The regulatory authorities also may, at any time following approval of a product for sale, audit the manufacturing facilities of our third-party contractors. If any such inspection or audit identifies a failure to comply with applicable regulations or if a violation of our product specifications or applicable regulations occurs independent of such an inspection or audit, we or the relevant regulatory authority may require remedial measures that may be costly and/or time consuming for us or a third party to implement, and that may include the temporary or permanent suspension of a clinical study or commercial sales or the temporary or permanent closure of a facility. Any such remedial measures imposed upon us or third parties with whom we contract could materially harm our business.

Additionally, if supply from one approved manufacturer is interrupted, an alternative manufacturer would need to be qualified through an NDA supplement or MAA variation, or equivalent foreign regulatory filing, which could result in further delay. The regulatory agencies may also require additional studies if a new manufacturer is relied upon for commercial production. Switching manufacturers may involve substantial costs and is likely to result in a delay in our desired clinical and commercial timelines.

These factors could cause us to incur higher costs and could cause the delay or termination of clinical trials, regulatory submissions, required approvals, or commercialization of AG10 or other product candidates that we may identify. Furthermore, if our suppliers fail to meet contractual requirements and we are unable to secure one or more replacement suppliers capable of production at a substantially equivalent cost, our clinical trials may be delayed or we could lose potential revenue.

Risks related to our intellectual property

If we are unable to obtain and maintain sufficient intellectual property protection for AG10 or other product candidates that we may identify, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize product candidates similar or identical to ours, and our ability to successfully commercialize AG10 and other product candidates that we may pursue may be impaired.

As is the case with other biopharmaceutical companies, our success depends in large part on our ability to obtain and maintain protection of the intellectual property we may own solely and jointly with others, particularly patents, in the United States and other countries with respect to our product candidates and technology. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to AG10 or other product candidates that we may identify.

Obtaining and enforcing biopharmaceutical patents is costly, time consuming and complex, and we may not be able to file and prosecute all necessary or desirable patent applications, or maintain, enforce and license any patents that may issue from such 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. We may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the rights to patents licensed to third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal, technological 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, or vice versa. Further, we may not be aware of all third-party intellectual property rights potentially relating to our product candidates. Publications of discoveries in the scientific literature often lag behind the actual

discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing or, in some cases, not at all. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in our patents or pending patent applications, or that we were the first to file for patent protection of such inventions. 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 product candidates, in whole or in part, or which effectively prevent others from commercializing competitive product candidates. Even if our patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our patents by developing similar or alternative product candidates in a non-infringing manner.

Moreover, we may be subject to a third-party preissuance submission of prior art to the United States Patent and Trademark Office, or the USPTO, or become involved in opposition, derivation, reexamination, inter partes review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our product candidates and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize drugs without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

In addition, the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges 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 product candidates, or limit the duration of the patent protection of our product candidates. 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 patent portfolio may not provide us with sufficient rights to exclude others from commercializing drugs similar or identical to ours.

If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties or these agreements are terminated or we otherwise experience disruptions to our business relationships with our licensors, we could lose intellectual property rights that are important to our business.

We are a party to an exclusive license agreement with Stanford and may need to obtain additional licenses from others to advance our research and development activities or allow the commercialization of AG10 or any other product candidates we may identify and pursue. Our license agreement with Stanford imposes, and we expect that future license agreements will impose, various development, diligence, commercialization, and other obligations on us. For example, under our license agreement with Stanford we are required to use commercially reasonable efforts to engage in various development and commercialization activities with respect to licensed products, and must satisfy specified milestone and royalty payment obligations. In spite of our efforts, our licensors might conclude that we have materially breached our obligations under such license agreements and might therefore terminate the license agreements, thereby removing or limiting our ability to develop and commercialize products and technology covered by these license agreements. If our license agreement with Stanford is terminated, competitors or other third parties would have the freedom to seek regulatory approval of, and to market, products identical to AG10 and we may be required to cease our development and commercialization of AG10. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations and prospects.

Moreover, disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our product candidates, technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;

- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

In addition, certain provisions in our license agreement with Stanford 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 agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates, which could have a material adverse effect on our business, financial conditions, results of operations and prospects.

Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. However, our research, development and commercialization activities may be subject to claims that we infringe or otherwise violate patents or other intellectual property rights owned or controlled by third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions and inter partes reexamination proceedings before the USPTO, and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are pursuing development candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that AG10 or other product candidates that we may identify may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of AG10 or other product candidates that we may identify. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that AG10 or other product candidates that we may identify may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of AG10 or other product candidates that we may identify, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire.

Similarly, if any third-party patents were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy, the holders of any such patents may be able to block our ability to develop and commercialize the applicable product candidate unless we obtained a license or until such patent expires. In either case, such a license may not be available on commercially reasonable terms or at all, or it may be non-exclusive, which could result in our competitors gaining access to the same intellectual property.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize AG10 or other product candidates that we may identify. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

Parties making claims against us may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a risk

that some of our confidential information could be compromised by disclosure. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have material adverse effect on our ability to raise additional funds or otherwise have a material adverse effect on our business, results of operations, financial condition and prospects.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including generics or biosimilars. 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.

If we are not able to obtain patent term extension or non-patent exclusivity in the United States under the Hatch-Waxman Act and in foreign countries under similar legislation, thereby potentially extending the term of our marketing exclusivity for AG10 or other product candidates that we may identify, our business may be materially harmed.

Depending upon the timing, duration and specifics of FDA marketing approval of AG10 or other product candidates that we may identify, one of the U.S. patents covering each of such product candidates or the use thereof may be eligible for up to five years of patent term extension under the Hatch-Waxman Act. The Hatch-Waxman Act allows a maximum of one patent to be extended per FDA approved product as compensation for the patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. Patent term extension also may be available in certain foreign countries upon regulatory approval of our product candidates. Nevertheless, we may not be granted patent term extension either in the United States or in any foreign country because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the term of extension, as well as the scope of patent protection during any such extension, afforded by the governmental authority could be less than we request.

If we are unable to obtain patent term extension or restoration, or the term of any such extension is less than we request, the period during which we will have the right to exclusively market our product may be shortened and our competitors may obtain approval of competing products following our patent expiration sooner, and our revenue could be reduced, possibly materially.

It is possible that we will not obtain patent term extension under the Hatch-Waxman Act for a U.S. patent covering AG10 or other product candidates that we may identify even where that patent is eligible for patent term extension, or if we obtain such an extension, it may be for a shorter period than we had sought. Further, for our licensed patents, we do not have the right to control prosecution, including filing with the USPTO, a petition for patent term extension under the Hatch-Waxman Act. Thus, if one of our licensed patents is eligible for patent term extension under the Hatch-Waxman Act, we may not be able to control whether a petition to obtain a patent term extension is filed, or obtained, from the USPTO.

Also, there are detailed rules and requirements regarding the patents that may be submitted to the FDA for listing in the Approved Drug Products with Therapeutic Equivalence Evaluations, or the Orange Book. We may be unable to obtain patents covering our product candidates that contain one or more claims that satisfy the requirements for listing in the Orange Book. Even if we submit a patent for listing in the Orange Book, the FDA may decline to list the patent, or a manufacturer of generic drugs may challenge the listing. If one of our product candidates is approved and a patent covering that product candidate is not listed in the Orange Book, a manufacturer of generic drugs would not have to provide advance notice to us of any abbreviated new drug application filed with the FDA to obtain permission to sell a generic version of such product candidate.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business would be harmed.

We seek to protect our confidential proprietary information, in part, by confidentiality agreements and invention assignment agreements with our employees, consultants, scientific advisors, contractors and collaborators. These agreements are designed to protect our proprietary information. However, we cannot be certain that such agreements have been entered into with all relevant parties, and we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. For example, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. We also seek to preserve the integrity and confidentiality of our confidential proprietary information by maintaining physical security of our premises and physical and electronic security of our information technology systems, but it is possible that these security measures could be breached. If any of our confidential proprietary information were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position.

Although we are not currently involved in any litigation, we may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents or other intellectual property. Although we are not currently involved in any litigation, if we were to initiate legal proceedings against a third party to enforce a patent covering AG10 or other product candidates that we may identify, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, written description or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. The outcome following legal assertions of invalidity and unenforceability is unpredictable. Interference or derivation proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and our competitors gain access to the same technology. Our defense of litigation or interference or derivation proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to continue our clinical trials, continue our research programs, license necessary technology from third parties, or enter into development partnerships that would help us bring AG10 or other product candidates that we may identify to market. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

We or our licensors may be subject to claims that former employees, collaborators or other third parties have an interest in our owned or in-licensed patents, trade secrets, or other intellectual property as an inventor or co-inventor. For example, we or our licensors may have inventorship disputes arise from conflicting obligations of employees, consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship or our or our licensors' ownership of our owned or in-licensed patents, trade secrets or other intellectual property. If we or our licensors fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, intellectual property that is important to our product candidates. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court.

If we or one of our licensing partners initiated legal proceedings against a third party to enforce a patent covering one of AG10 or other product candidates that we may identify, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover AG10 or other product candidates that we may identify. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection would have a material adverse impact on our business.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

As is common in the biotechnology and pharmaceutical industry, we employ individuals who were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any of our employee's former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm and rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The USPTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on our product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions.

Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and may also export infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. Assuming that other requirements for patentability are met, prior to March 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. After March 2013, under the Leahy-Smith America Invents Act, or the America Invents Act, enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. A third party that files a patent application in the USPTO after March 2013, but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we or our licensors were the first to either (i) file any patent application related to our product candidates or (ii) invent any of the inventions claimed in our or our licensor's patents or patent applications.

The America Invents Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also may affect patent litigation. These include allowing third party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, inter partes review, and derivation proceedings. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. Therefore, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our owned or in-licensed patent applications and the enforcement or defense of our owned or in-licensed issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

In addition, the patent positions of companies in the development and commercialization of pharmaceuticals are particularly uncertain. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. This combination of events has created uncertainty with respect to the validity and enforceability of patents, once obtained. Depending on future actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could have a material adverse effect on our existing patent portfolio and our ability to protect and enforce our intellectual property in the future.

Risks related to commercialization

Even if AG10 or any other product candidates we may develop receive marketing approval, they may fail to achieve the degree of market acceptance by physicians, patients, healthcare payors, and others in the medical community necessary for commercial success.

The commercial success of AG10 or other product candidates that we may identify will depend upon its degree of market acceptance by physicians, patients, third-party payors, and others in the medical community. Even if any product candidates we may develop receive marketing approval, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, healthcare payors, and others in the medical community. The degree of market acceptance of any product candidates we may develop, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and safety of such product candidates as demonstrated in pivotal clinical trials and published in peer-reviewed journals;
- the potential and perceived advantages compared to alternative treatments;
- the ability to offer our products for sale at competitive prices;
- the ability to offer appropriate patient access programs, such as co-pay assistance;
- the extent to which physicians recommend our products to their patients;
- convenience and ease of dosing and administration compared to alternative treatments;
- the clinical indications for which the product candidate is approved by FDA or comparable regulatory agencies;
- product labeling or product insert requirements of the FDA or other comparable foreign regulatory authorities, including any limitations, contraindications or warnings contained in a product's approved labeling;
- restrictions on how the product is distributed;
- the timing of market introduction of competitive products;
- publicity concerning our products or competing products and treatments;
- the strength of marketing and distribution support;
- favorable third-party coverage and sufficient reimbursement; and
- the prevalence and severity of any side effects.

If AG10 or any other product candidates we may develop do not achieve an adequate level of acceptance, we may not generate significant product revenue, and we may not become profitable.

If, in the future, we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market any product candidates we may develop, we may not be successful in commercializing those product candidates if and when they are approved.

We do not have a sales or marketing infrastructure and have little experience in the sale, marketing, or distribution of pharmaceutical products. To achieve commercial success for any approved product for which we retain sales and marketing responsibilities, we must either develop a sales and marketing organization or outsource these functions to third parties. In the future, we may choose to build a focused sales, marketing, and commercial support infrastructure to market and sell AG10 and any other product candidates we may identify, if and when they are approved. We may also elect to enter into collaborations or strategic partnerships with third parties to engage in commercialization activities, although there is no guarantee we will be able to enter into these arrangements even if we intend to do so.

There are risks involved with both establishing our own commercial capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force or reimbursement specialists is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing and other commercialization capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our commercialization personnel.

Factors that may inhibit our efforts to commercialize any approved product on our own include:

- our inability to recruit and retain adequate numbers of effective sales, marketing, reimbursement, customer service, medical affairs, and other support personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future approved products;
- the inability of reimbursement professionals to negotiate arrangements for formulary access, reimbursement, and other acceptance by payors;
- the inability to price our products at a sufficient price point to ensure an adequate and attractive level of profitability;
- restricted or closed distribution channels that make it difficult to distribute our products to segments of the patient population;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent commercialization organization.

If we enter into arrangements with third parties to perform sales, marketing, commercial support, and distribution services, our product revenue or the profitability of product revenue may be lower than if we were to market and sell any products we may develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to commercialize AG10 or other product candidates that we may identify or may be unable to do so on terms that are favorable to us. We may have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we do not establish commercialization capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates if approved.

The insurance coverage and reimbursement status of newly-approved products is uncertain. AG10 and any other product candidates that we may develop may become subject to unfavorable pricing regulations, third-party reimbursement practices, or healthcare reform initiatives, which would harm our business. Failure to obtain or maintain adequate coverage and reimbursement for new or current products could limit our ability to market those products and decrease our ability to generate revenue.

Our ability to successfully commercialize AG10 or any other products that we may develop also will depend in part on the extent to which reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers, and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. The availability and extent of reimbursement by governmental and private payors is essential for most patients to be able to afford treatments such as AG10. Sales of AG10 or other product candidates that we may identify will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or reimbursed by government health administration authorities, private health coverage insurers and other third-party payors. If reimbursement is not available, or is available only to limited levels, we may not be able to successfully commercialize AG10 or any other product candidates we may identify. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. In general, the prices of medicines under such systems are substantially lower than in the United States. Other countries allow companies to fix their own prices for medicines, but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for AG10 or other product candidates that we may identify. Accordingly, in markets outside the United States, the reimbursement for our products may be reduced compared with the United States and may be insufficient to generate commercially reasonable revenues and profits.

There is also significant uncertainty related to the insurance coverage and reimbursement of newly approved products and coverage may be more limited than the purposes for which the medicine is approved by the FDA or comparable foreign regulatory authorities. In the United States, the principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services, or CMS, an agency within the U.S. Department of Health and Human Services. CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare and private payors tend to follow CMS to a substantial degree. No uniform policy of coverage and reimbursement for products exists among third-party payors and coverage and reimbursement levels for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time consuming and costly process that may require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. It is difficult to predict what CMS will decide with respect to reimbursement for fundamentally novel products such as ours, as there is no body of established practices and precedents for these new products. Reimbursement agencies in Europe may be more conservative than CMS. For example, a number of cancer drugs have been approved for reimbursement in the United States and have not been approved for reimbursement in certain European countries. Moreover, eligibility for reimbursement does not imply that any drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale, and distribution. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Our inability to promptly obtain coverage and profitable payment rates from both government-funded and private payors for any approved products we may develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize product candidates, and our overall financial condition.

Government authorities currently impose mandatory discounts for certain patient groups, such as Medicare, Medicaid and Veterans Affairs, or VA, hospitals, and may seek to increase such discounts at any time. Future regulation both domestically and abroad may negatively impact the price of our products, if approved. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot be sure that reimbursement will be available for any product candidate that we commercialize and, if reimbursement is available, the level of reimbursement. Reimbursement may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. In order to obtain reimbursement, physicians may need to show that patients have superior treatment outcomes with our products compared to standard of care drugs, including lower-priced generic versions of standard of care drugs. We expect to experience pricing pressures in connection with the sale of any of our product candidates, due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products.

The regulations that govern marketing approvals, pricing and reimbursement for new drugs vary widely from country to country. In the United States, recently enacted legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenue we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if any product candidates we may develop obtain marketing approval.

If we fail to comply with healthcare laws, we could face substantial penalties and our business, operations and financial conditions could be adversely affected.

Our ongoing and planned operations, including clinical research, sales, marketing and promotion of AG10 or other product candidates that we may identify and begin commercializing in the United States, may subject us to various federal and state fraud and abuse laws and other healthcare laws. The laws that may impact our operations include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, either the referral of an individual, or the purchase, lease, order or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- federal civil and criminal false claims laws and civil monetary penalty laws, including the False Claims Act, which impose criminal and civil penalties, including through civil “qui tam” or “whistleblower” actions, against individuals or entities for, among other things, knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid, or other federal health care programs that are false or fraudulent; knowingly making or causing a false statement material to a false or fraudulent claim or an obligation to pay money to the federal government; or knowingly concealing or knowingly and improperly avoiding or decreasing such an obligation. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of these statutes or specific intent to violate them in order to have committed a violation;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization;
- the federal Physician Payments Sunshine Act, created under the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, the ACA, and its implementing regulations, which require manufacturers of drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance Program to report annually to the U.S. Department of Health and Human Services under the Open Payments Program, information related to payments or other transfers of value made to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers; and
- analogous state and foreign laws and regulations, such as state and foreign anti-kickback, false claims, consumer protection and unfair competition laws which may apply to pharmaceutical business practices, including but not limited to, research, distribution, sales and marketing arrangements as well as submitting claims involving healthcare items or services reimbursed by any third-party payer, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government that otherwise restricts payments that may be made to healthcare providers and other potential

referral sources; state laws that require drug manufacturers to file reports with states regarding pricing and marketing information, such as the tracking and reporting of gifts, compensations and other remuneration and items of value provided to healthcare professionals and entities; state and local laws requiring the registration of pharmaceutical sales representatives; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available, it is possible that some of our business activities could, despite our efforts to comply, be subject to challenge under one or more of such laws. Efforts to ensure that our business arrangements will comply with applicable healthcare laws may involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, disgorgement, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, integrity and oversight agreements to resolve allegations of non-compliance, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. In addition, the approval and commercialization of any of our product candidates outside the United States will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

Healthcare legislative measures aimed at reducing healthcare costs may have a material adverse effect on our business and results of operations.

Third-party payors, whether domestic or foreign, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to the health care system that could impact our ability to sell our products profitably. In particular, in 2010 the ACA was enacted, which, among other things increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, and provided incentives to programs that increase the federal government's comparative effectiveness research.

There have been a number of significant changes to the ACA and its implementation. The Tax Cuts and Jobs Act of 2017, or Tax Act, includes a provision repealing effective January 1, 2019 the tax-based shared responsibility payment imposed by the ACA 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". Since January 2017, the Trump administration has signed two Executive Orders designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. One Executive Order directs federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The second Executive Order terminates the cost-sharing subsidies that reimburse insurers under the ACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017.

Further, on June 14, 2018, U.S. Court of Appeals for the Federal Circuit ruled that the federal government was not required to pay more than $12 billion in ACA risk corridor payments to third-party payors who argued were owed to them. The effects of this gap in reimbursement on third-party payors, the viability of the ACA marketplace, providers, and potentially our business, are not yet known. Moreover, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. The Bipartisan Budget Act of 2018 also amends the ACA, effective January 1, 2019, by increasing the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and closing the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole".

In July 2018, the Centers for Medicare and Medicaid Services, or CMS, published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. In addition, CMS has recently published a final rule that would give states greater flexibility, starting in 2020, in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces.

Since its enactment, some of the provisions of the ACA have yet to be fully implemented, while certain provisions have been subject to judicial, congressional, or executive challenges. As a result, there have been delays in the implementation of, and action taken to repeal or replace, certain aspects of the ACA. The U.S. Supreme Court has upheld certain key aspects of the legislation, including a tax-based shared responsibility payment imposed on certain individuals who fail to maintain qualifying health coverage for all or part of a year or pay a penalty, which is commonly known as the "individual mandate." However, as a result of tax reform legislation passed in December 2017, the tax-based shared responsibility payment imposed on certain individuals who fail to maintain qualifying health coverage for all or part of a year or pay a penalty, which is commonly known as the "individual mandate" has been eliminated effective January 1, 2019. On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas, or the Texas District Court Judge, ruled that the individual mandate is a critical and inseverable feature of the ACA, and therefore, because it was repealed as part of the Tax Cuts and Jobs Act of 2017, the remaining provisions of the ACA are invalid as well. The Trump Administration and CMS have both stated that the ruling will have no immediate effect, and on December 30, 2018 the Texas District Court Judge issued an order staying the judgment pending appeal. The implications of the ACA, its possible repeal, replacement, or modification, and the political uncertainty surrounding these matters for our business and financial condition, if any, are not yet clear.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in 2013, and, due to subsequent legislative amendments, will remain in effect through 2027 unless additional Congressional action is taken. The American Taxpayer Relief Act of 2012 further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for AG10 or other product candidates that we may identify, if we obtain regulatory approval;
- our ability to receive or set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, lower reimbursement, and new payment methodologies. This could lower the price that we receive for any approved product. Any denial in coverage or reduction in reimbursement from Medicare or other government-funded programs may result in a similar denial or reduction in payments from private payors, which may prevent us from being able to generate sufficient revenue, attain profitability or commercialize AG10 or other product candidates that we may identify, if approved.

We face significant competition in an environment of rapid technological and scientific change, and there is a possibility that our competitors may achieve regulatory approval before us or develop therapies that are safer, more advanced or more effective than ours, which may negatively impact our ability to successfully market or commercialize any product candidates we may develop and ultimately harm our financial condition.

The development and commercialization of new drug products is highly competitive. We may face competition with respect to any product candidates that we seek to develop or commercialize in the future from major pharmaceutical companies, specialty pharmaceutical companies, and biotechnology companies worldwide. 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.

There are a number of large pharmaceutical and biotechnology companies that are currently pursuing the development of products for the treatment of ATTR. Companies that we are aware are developing therapeutics for ATTR include large companies with significant financial resources, such as Pfizer Inc., Alnylam Pharmaceuticals Inc., Ionis Pharmaceuticals Inc./Akcea Therapeutics, Inc., Corino Therapeutics Inc./SOM Innovation Biotech, S.L., Intellia Therapeutics Inc., Arcturus Therapeutics Inc., Neurimmune Holding AG and Prothena Therapeutics plc. In particular, in January 2019, the FDA accepted Pfizer's two NDAs for tafamidis to treat ATTR-CM. If tafamidis receives FDA approval for one or both forms of ATTR-CM, AG10 would not be the first treatment on the market for ATTR-CM, and its market share may be limited. AG10 will not be the first treatment on the market for ATTR-PN as tafamidis, patisiran, and inotersen are approved for the treatment of ATTR-PN in a variety of countries globally. In addition to competition from other companies targeting ATTR, any products we may develop may also face competition from other types of therapies.

Many of our current or potential competitors, either alone or with their strategic partners, have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals, and marketing approved products than we do.

Mergers and acquisitions in the pharmaceutical and biotechnology 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. 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 any products that we may develop. Furthermore, currently approved products could be discovered to have application for treatment of TTR, which could give such products significant regulatory and market timing advantages over AG10 or other product candidates that we may identify. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours and may obtain orphan product exclusivity from the FDA for indications that AG10 or other product candidates that we may identify are targeting, which could result in our competitors establishing a strong market position before we are able to enter the market. Additionally, products or technologies developed by our competitors may render our potential product candidates uneconomical or obsolete and we may not be successful in marketing any product candidates we may develop against competitors.

In addition, we could face litigation or other proceedings with respect to the scope, ownership, validity and/or enforceability of our patents relating to our competitors' products and our competitors may allege that our products infringe, misappropriate or otherwise violate their intellectual property. The availability of our competitors' products could limit the demand, and the price we are able to charge, for any products that we may develop and commercialize. See "Risks related to our intellectual property."

If the market opportunities for AG10 are smaller than we believe they are, our revenue may be adversely affected, and our business may suffer. Our ability to successfully identify patients and acquire a significant market share will be necessary for us to achieve profitability and growth.

We focus our research and product development on treatments for ATTR. Our projections of both the number of individuals who have a form of ATTR, as well as the subset of individuals with a form of ATTR who have the potential to benefit from treatment with AG10 or other product candidates that we may identify, are based on our beliefs and estimates, including our belief that the availability of minimally invasive diagnostics will result in increased rates of diagnosis for ATTR. These estimates have been derived from a variety of sources, including

the scientific literature, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these diseases. The number of patients may turn out to be lower than expected. The effort to identify patients with diseases we seek to treat is in early stages, and we cannot accurately predict the number of patients for whom treatment might be possible. Additionally, the potentially addressable patient population for AG10 or other product candidates that we may identify may be limited or may not be amenable to treatment with AG10 or other product candidates that we may identify, and new patients may become increasingly difficult to identify or gain access to, which would adversely affect our results of operations and our business. Further, even if we obtain significant market share for AG10 or other product candidates that we may identify, because the potential target populations are small, we may never achieve profitability despite obtaining such significant market share. In addition, our market share could be limited by the availability of other treatments for ATTR, such as tafamidis, that could receive regulatory approval or otherwise be commercially launched before AG10.

Risks related to our business and industry

Certain of our directors and officers may have actual or potential conflicts of interest because of their positions with BridgeBio and may not be able to or may choose not to devote sufficient time and attention to our company.

Neil Kumar, founder and Chief Executive Officer of BridgeBio, Eric Aguiar, a member of the Board of Managers of BridgeBio, and Ali Satvat, a member of the Board of Managers of BridgeBio, serve on our board of directors and retain their positions and affiliations with BridgeBio. Dr. Kumar spends a significant portion of his time on other BridgeBio matters, including involvement with other BridgeBio subsidiaries. Additionally, Christine Siu, our Chief Financial Officer, serves as the Chief Operating Officer for other BridgeBio subsidiaries; Uma Sinha, our Chief Scientific Officer, serves as the Chief Scientific Officer of BridgeBio and other BridgeBio subsidiaries; Jonathan Fox, our Chief Medical Officer, serves as the Therapeutic Area Lead of Cardiovascular and Renal Diseases for BridgeBio and Cameron Turtle, our Chief Business Officer, serves as Senior Vice President, Portfolio Management and Corporate Development of BridgeBio. As a result, these executive officers may not be able to devote their full time and attention to our company, which could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Since joining us, all of our executives, including Dr. Kumar, have each spent the majority of their time devoted to us. While none of the executives has a minimum time commitment to us, each retains flexibility to ensure that he or she can re-allocate his or her time based on the needs of each business. The particulars of these executives' time-allocation strategy may change over time based on these needs or the executives' individual incentives to provide services to us relative to other businesses. In addition, certain of these individuals own equity interests in BridgeBio, which represent a significant portion of these individuals' net worth, while Dr. Kumar, in particular, does not currently receive any cash or equity compensation from us and does not hold any direct equity interest in us. These individuals' respective positions at BridgeBio and the ownership of any BridgeBio equity or equity awards creates, or may create the appearance of, conflicts of interest when we ask these individuals to make decisions that could have different implications for BridgeBio than the decisions have for us.

Our future success depends on our ability to retain key management, employees, consultants and advisors and to attract, retain and motivate qualified personnel.

We are highly dependent on the management, research and development, clinical, financial and business development expertise of our executive officers, as well as the other members of our scientific and clinical teams. However, some of these executive officers and other personnel are not our full-time employees. The risks related to our dependence upon Dr. Kumar are compounded by BridgeBio's significant ownership percentage and Dr. Kumar's role in our company, as well as the absence of any contract between us and Dr. Kumar for his services. If we were to lose Dr. Kumar or any of our other executives or key personnel, we may not be able to find appropriate replacements on a timely basis and our financial condition and results of operations could be materially adversely affected. Furthermore, although we have employment offer letters with each of our executive officers other than Dr. Kumar, each of them may terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or employees. Recruiting and retaining qualified scientific and clinical personnel and, if we progress the development of our drug pipeline toward scaling up for commercialization, sales and marketing personnel, will also be critical to our success. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval for and commercialize AG10 or other product candidates that we may identify. Competition to hire qualified personnel in our industry is intense, and we may be unable to hire,

train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. Furthermore, to the extent we hire personnel from competitors, we may be subject to allegations that they have been improperly solicited or that they have divulged proprietary or other confidential information, or that their former employers own their research output. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

We will need to expand our organization and we may experience difficulties in managing this growth, which could disrupt our operations.

As of December 31, 2018, we had 24 full-time employees. As we mature, we expect to expand our full-time employee base and to hire more consultants and contractors. Our management may need to divert a disproportionate amount of its attention away from our day-to-day activities and devote a substantial amount of time toward managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to generate and/or grow revenues could be reduced, and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize product candidates and compete effectively will depend, in part, on our ability to effectively manage any future growth.

We may expend our limited resources to pursue a particular product candidate and fail to capitalize on development opportunities or product candidates that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and personnel resources, we are placing significant focus on the development of our product candidate, AG10. As a result, we may forgo or delay pursuit of opportunities with other future product candidates that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and other future product candidates for specific indications may not yield any commercially viable future product candidates. If we do not accurately evaluate the commercial potential or target market for a particular future product candidate, we may relinquish valuable rights to that future product candidates through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such future product candidates.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any product candidates that we may develop.

We face an inherent risk of product liability exposure related to the testing of AG10 or other product candidates that we may identify in human clinical trials and will face an even greater risk if we commercially sell any medicines that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or medicines caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or medicines that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- the inability to commercialize AG10 or any other product candidates that we may develop.

Although we maintain product liability insurance, including coverage for clinical trials that we sponsor, it may not be adequate to cover all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage as we commence additional clinical trials and if we successfully commercialize any product candidates. The market for insurance coverage is increasingly expensive, and the costs of insurance coverage will increase as our clinical programs increase in size. 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.

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 generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. 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 workers' compensation 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 in order 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.

Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.

Our ability to invest in and expand our business and meet our financial obligations, to attract and retain third-party contractors and collaboration partners and to raise additional capital depends on our operating and financial performance, which, in turn, is subject to numerous factors, including the prevailing economic and political conditions and financial, business and other factors beyond our control, such as the rate of unemployment, the number of uninsured persons in the United States, political influences and inflationary pressures. For example, an overall decrease in or loss of insurance coverage among individuals in the United States as a result of unemployment, underemployment or the repeal of certain provisions of the ACA, may decrease the demand for healthcare services and pharmaceuticals. If fewer patients are seeking medical care because they do not have insurance coverage, we may experience difficulties in any eventual commercialization of our product candidates and our business, results of operations, financial condition and cash flows could be adversely affected.

In addition, our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets upon which biopharmaceutical companies such as us are dependent for sources of capital. In the past, global financial crises have caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including a reduced ability to raise additional capital when needed on acceptable terms, if at all, and weakened demand for AG10 or other product candidates that we may identify. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption. 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.

Our internal computer systems, or those used by our third-party research institution collaborators, CROs or other contractors or consultants, may fail or suffer security breaches.

Despite the implementation of security measures, our internal computer systems and those of our future CROs and other contractors and consultants may be vulnerable to damage from computer viruses and unauthorized access. Although to our knowledge we have not experienced any such material system failure or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed, ongoing or future clinical trials could result in delays in our regulatory approval efforts and

significantly increase our costs to recover or reproduce the data. Likewise, we rely on our third-party research institution collaborators for research and development of AG10 and other third parties for the manufacture of AG10 and to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or systems, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development and commercialization of AG10 could be delayed.

Certain data breaches must also be reported to affected individuals and the government, and in some cases to the media, under provisions of HIPAA, as amended by HITECH, other U.S. federal and state law, and requirements of non-U.S. jurisdictions, including the European Union Data Protection Directive, and financial penalties may also apply.

Our insurance policies may not be adequate to compensate us for the potential losses arising from breaches, failures or disruptions of our infrastructure, catastrophic events and disasters or otherwise. In addition, such insurance may not be available to us in the future on economically reasonable terms, or at all. Further, our insurance may not cover all claims made against us and defending a suit, regardless of its merit, could be costly and divert management's attention.

Furthermore, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on other third parties for the manufacture of AG10 and to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business.

We or the third parties upon whom we depend may be adversely affected by earthquakes or other natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Earthquakes or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place currently are limited and are unlikely to prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which, particularly when taken together with our lack of earthquake insurance, could have a material adverse effect on our business.

Our anticipated international operations may expose us to business, regulatory, political, operational, financial, pricing and reimbursement and economic risks associated with doing business outside of the United States.

We currently have no international operations, but our business strategy incorporates potential international expansion to target ATTR patient populations outside the United States. If we receive regulatory approval for and commercialize AG10 in patient populations outside the United States, we may hire sales representatives and conduct physician and patient association outreach activities outside of the United States. Doing business internationally involves a number of risks, including but not limited to:

- multiple, conflicting, and changing laws and regulations such as privacy regulations, tax laws, export and import restrictions, employment laws, regulatory requirements, and other governmental approvals, permits, and licenses;
- failure by us to obtain and maintain regulatory approvals for the use of our products in various countries;
- additional potentially relevant third-party patent rights;
- complexities and difficulties in obtaining protection and enforcing our intellectual property;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payor reimbursement regimes, government payors, or patient self-pay systems;

- limits in our ability to penetrate international markets;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products, and exposure to foreign currency exchange rate fluctuations;
- natural disasters, political and economic instability, including wars, terrorism, and political unrest, outbreak of disease, boycotts, curtailment of trade, and other business restrictions;
- certain expenses including, among others, expenses for travel, translation, and insurance; and
- regulatory and compliance risks that relate to maintaining accurate information and control over sales and activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act, its books and records provisions, or its anti-bribery provisions.

Any of these factors could significantly harm our potential international expansion and operations and, consequently, our results of operations.

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we will be required to maintain internal control over financial reporting and to report any material weaknesses in such internal controls. Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, requires that we evaluate and determine the effectiveness of our internal control over financial reporting and, provide a management report on internal control over financial reporting. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm.

Any failure to develop or maintain effective controls, or any difficulties encountered in their implementation or improvement, could harm our results of operations, cause us to fail to meet our reporting obligations, result in a restatement of our financial statements for prior periods, or adversely affect the results of management evaluations and independent registered public accounting firm audits of our internal control over financial reporting that we will eventually be required to include in our periodic reports that will be filed with the SEC. Ineffective disclosure controls and procedures and internal controls over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our common stock.

We are in the process of designing and implementing the internal control over financial reporting required to comply with Section 404 of the Sarbanes-Oxley Act. This process will be time consuming, costly, and complicated. If we are unable to assert that our internal control over financial reporting is effective or when required in the future, if our independent registered public accounting firm issues an adverse opinion on the effectiveness of our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports, the market price of our common stock could be adversely affected and we could become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, which could require additional financial and management resources.

Risks related to our equity securities

We are an "emerging growth company," and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act, and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- being permitted to provide only two years of audited financial statements prior to our first filing of our Annual Report on Form 10-K, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's discussion and analysis of financial condition and results of operations" disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;

- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- not being required to hold a non-binding advisory vote on executive compensation or obtain stockholder approval of any golden parachute payments not previously approved.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of our initial public offering, or IPO, (b) in which we have total annual gross revenue of at least $1.07 billion or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior September 30th and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

Under Section 107(b) of the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We have identified a material weakness in our internal control over financial reporting and may identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, which may result in material misstatements of our financial statements or cause us to fail to meet our periodic reporting obligations.

Prior to the IPO, we were a private company and had limited accounting and financial reporting personnel and other resources with which to address our internal controls and procedures. In connection with the audit of our financial statements for the year ended December 31, 2018, we and our independent registered public accounting firm identified a material weakness in our internal control over financial reporting. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

The material weakness related to a deficiency in the operation of our internal controls over the accounting for complex debt and equity transactions and ineffective disclosure controls.

Neither we nor our independent registered public accounting firm has performed or was required to perform an evaluation of our internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act. We have taken steps to remediate the material weakness, including increasing the depth and experience within our accounting and finance organization. In addition, we are continuing to work on designing and implementing additional improved processes and internal controls. While we intend to implement a plan to remediate the material weakness, we have not completed the implementation of this plan, and we can give no assurance that our current and planned implementation will remediate this deficiency in internal control or that additional material weaknesses or significant deficiencies in our internal control over financial reporting will not be identified in the future. Our failure to implement and maintain effective internal control over financial reporting could result in errors in our financial statements that could result in a restatement of our financial statements and cause us to fail to meet our reporting obligations.

We have restated our unaudited condensed financial statements previously issued in our quarterly reports on Form 10-Q for the periods ended March 31, June 30 and September 30, 2018.

As further described in Note 15, Restatement of 2018 unaudited condensed financial statements and related financial information, to the audited financial statements included in this Annual Report on Form 10-K, during the course of the audit of our annual financial statements for the fiscal year ended December 31, 2018, we discovered certain errors related to the accounting for complex debt and equity transactions. As a result, our management concluded, after discussion with our independent registered public accounting firm, Ernst & Young

LLP, that we were required to restate our unaudited financial information for the quarterly periods ended March 31, 2018, June 30, 2018 and September 30, 2018, which our Audit Committee determined should no longer be relied upon. This Annual Report includes the restatement of our unaudited financial statements for the quarterly periods ended March 31, 2018, June 30, 2018 and September 30, 2018 in Note 15 described above. If we are required to restate previously issued financial statements for any additional periods, our reputation could be impaired which could cause a loss of investor confidence and adversely materially affect our business, operating results and financial condition.

We are obligated to develop and maintain proper and effective internal controls over financial reporting and any failure to maintain the adequacy of these internal controls may adversely affect investor confidence in our company and, as a result, the value of our common stock.

We will be required, pursuant to Section 404 of the Sarbanes-Oxley Act (Section 404), to furnish a report by management on the effectiveness of our internal control over financial reporting for the year ending December 31, 2019. This assessment will need to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting. Once we are no longer an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act") or, if prior to such date, we opt to no longer take advantage of the applicable exemption, we will be required to include an opinion from our independent registered public accounting firm on the effectiveness of our internal control over financial reporting. At such time as we are required to obtain auditor attestation, if we then have a material weakness, we would receive an adverse opinion regarding our internal control over financial reporting from our independent registered accounting firm.

We have begun the costly and challenging process of compiling the system and processing documentation necessary to perform the evaluation needed to comply with Section 404, and we may not be able to complete our evaluation, testing and any required remediation in a timely fashion. Our compliance with Section 404 will require that we incur substantial accounting expense and expend significant management efforts. We currently do not have an internal audit group, and we will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge and compile the system and process documentation necessary to perform the evaluation needed to comply with Section 404.

During our evaluation of our internal control, if we identify one or more material weaknesses in our internal control over financial reporting or fail to remediate our current material weaknesses, we will be unable to assert that our internal control over financial reporting is effective. We cannot assure you that there will not be material weaknesses in our internal control over financial reporting in the future. Any failure to maintain internal control over financial reporting could severely inhibit our ability to accurately report our financial condition or results of operations. If we are unable to conclude that our internal control over financial reporting is effective, or if our independent registered public accounting firm determines we have a material weakness in our internal control over financial reporting, we could lose investor confidence in the accuracy and completeness of our financial reports, the market price of our ordinary shares could decline, and we could be subject to sanctions or investigations by NASDAQ, the SEC or other regulatory authorities. Failure to remedy any material weakness in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

The market price of our common stock may be highly volatile.

The market price of our common stock is likely to be volatile. Our stock price could be subject to wide fluctuations in response to a variety of factors, including the following:

- adverse results or delays in our preclinical studies or clinical trials;
- reports of adverse events or other negative results in clinical trials of third parties' product candidates for ATTR or similar indications;
- inability to obtain additional funding;
- any delay in filing an NDA for AG10 or an IND or NDA for other product candidates that we may identify and pursue, and any adverse development or perceived adverse development with respect to the FDA's review of that IND or NDA;
- failure to develop successfully and commercialize AG10 or other product candidates that we may identify;

- failure to maintain our existing license arrangements or enter into new licensing and collaboration agreements;
- failure by us or our licensors to prosecute, maintain or enforce our intellectual property rights;
- changes in laws or regulations applicable to future products;
- inability to obtain adequate clinical or commercial supply for our product candidates or the inability to do so at acceptable prices;
- adverse regulatory decisions, including failure to reach agreement with applicable regulatory authorities on the design or scope of our planned clinical trials;
- failure to obtain and maintain regulatory exclusivity for our product candidates;
- regulatory approval or commercialization of new products or other methods of treating our target disease indications by our competitors;
- failure to meet or exceed financial projections we may provide to the public or to the investment community;
- the perception of the pharmaceutical industry by the public, legislatures, regulators and the investment community;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us, our strategic collaboration partner or our competitors;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- additions or departures of key scientific or management personnel;
- significant lawsuits, including patent or stockholder litigation;
- changes in the market valuations of similar companies;
- sales of our common stock by us or our stockholders in the future; and
- trading volume of our common stock.

In addition, companies trading in the stock market in general, and Nasdaq, in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans, would result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We will need additional capital in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. These sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

Pursuant to our Amended and Restated 2018 Stock Option and Incentive Plan, or the 2018 Plan, which became effective upon the completion of our IPO, we are authorized to grant stock options and other equity-based awards to our employees, directors and consultants. In December 2018, our board of directors approved an increase in the number of shares reserved for future grant under the 2018 Plan. If our board of directors elects to further increase the number of shares available for future grant, and our stockholders approve any increase in the number of shares reserved under our equity incentive plans, including the increase approved by our board of directors in December 2018, our stockholders may experience additional dilution, and our stock price may fall.

A significant portion of our total outstanding shares is restricted from immediate resale but may be sold into the market in the near future, which could cause the market price of our common stock to decline significantly.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. In particular, sales following the expiration of market standoff and lock-up agreements entered into by us and certain of our stockholders in connection with our IPO or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. In the past, the representatives of the underwriters in our IPO, in their discretion, released a portion of the shares subject to lock-up agreements, which resulted in sales by certain of our stockholders prior to the expiration of the lock-up period. Shares issued upon the exercise of stock options outstanding under our equity incentive plans or pursuant to future awards granted under those plans will become available for sale in the public market to the extent permitted by the provisions of applicable vesting schedules, any applicable market standoff and lock-up agreements, and Rule 144 and Rule 701 under the Securities Act of 1933, as amended, or the Securities Act. If any of these additional shares are sold, or if it is perceived that they will be sold in the public market, the market price of our common stock could decline.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock could decline.

The trading market for our common stock will rely in part on the research and reports that industry or financial analysts publish about us or our business. If no or few analysts commence or continue coverage of us, the trading price of our stock could decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our stock, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Our executive officers, directors, five percent stockholders and their affiliates beneficially own approximately 75.5% of our voting stock as of December 31, 2018. Therefore, these stockholders, and in particular, our controlling stockholder, BridgeBio, will have the ability to influence us through their ownership positions. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders, acting together, may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may believe are in your best interest as one of our stockholders.

BridgeBio owns a significant percentage of our common stock, will be able to exert significant control over matters subject to stockholder approval and may have interests that conflict with those of our other stockholders.

BridgeBio is currently our majority stockholder and we will continue to be controlled by BridgeBio. BridgeBio beneficially owns approximately 61.4% of the voting power of our outstanding common stock as of December 31, 2018. As such, BridgeBio has the ability to substantially influence us and exert significant control through this ownership position. For example, BridgeBio will be able to control elections of directors, amendments of our organizational documents, or approval of any merger, amalgamation, sale of assets or other major corporate transaction. Any transferees or successors of all or a significant portion of BridgeBio's ownership in us will be able to exert a similar amount of control over us through their ownership position.

Furthermore, certain of our directors and officers may have actual or potential conflicts of interest with us because of their positions or affiliations with BridgeBio or their equity ownership in BridgeBio. For example, Neil Kumar, founder and Chief Executive Officer of BridgeBio, Eric Aguiar, a member of the Board of Managers of BridgeBio, and Ali Satvat, a member of the Board of Managers of BridgeBio, serve on our board of directors and retain their positions and affiliations with BridgeBio. Additionally, Christine Siu, our Chief Financial Officer, Uma Sinha, our Chief Scientific Officer, Jonathan Fox, our Chief Medical Officer and Cameron Turtle, our Chief Business Officer, also have roles within BridgeBio and/or its other subsidiaries. Our other stockholders may not have visibility into the BridgeBio ownership positions or other affiliations of any of our directors or officers with BridgeBio or its other subsidiaries, which may change at any time through acquisition, disposition, dilution, or otherwise. Any change in our directors' or officers' ownership in BridgeBio or its other subsidiaries could impact the interests of those

holders. BridgeBio's interests may not always coincide with our corporate interests or the interests of other stockholders, and it may exercise its voting and other rights in a manner with which you may not agree or that may not be in the best interests of our other stockholders. So long as it continues to own a significant amount of our equity, BridgeBio will continue to be able to strongly influence and significantly control our decisions.

Although we do not currently rely on the "controlled company" exemption under the rules and regulations of Nasdaq, we expect to have the right to use such exemption and therefore we could in the future avail ourselves of certain reduced corporate governance requirements.

BridgeBio holds a majority of the voting power of our outstanding capital stock, and therefore we are considered a "controlled company" as that term is set forth in the rules and regulations of Nasdaq. Under these rules, a company of which more than 50% of the voting power is held by a person or group of persons acting together is a "controlled company" and may elect not to comply with certain rules and regulations of Nasdaq regarding corporate governance, including:

- the requirement that a majority of its board of directors consist of independent directors;
- the requirement that its director nominees be selected or recommended for the board's selection by a majority of the board's independent directors in a vote in which only independent directors participate or by a nominating committee comprised solely of independent directors, in either case, with board resolutions or a written charter, as applicable, addressing the nominations process and related matters as required under the federal securities laws; and
- the requirement that its compensation committee be composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities.

These requirements would not apply to us if, in the future, we choose to avail ourselves of the "controlled company" exemption. Although we qualify as a "controlled company," we do not currently rely on these exemptions and intend to fully comply with all corporate governance requirements under the rules and regulations of Nasdaq. However, if we were to utilize some or all of these exemptions, we would not comply with certain of the corporate governance standards of Nasdaq, which could adversely affect the protections for our other stockholders.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders or remove our current management.

Our restated certificate of incorporation, amended and restated bylaws and Delaware law contain provisions that may have the effect of delaying or preventing a change in control of us or changes in our management. Our restated certificate of incorporation and amended and restated bylaws, which became effective upon the completion of our IPO, include provisions that:

- authorize "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;
- specify that special meetings of our stockholders can be called only by our board of directors or stockholders holding at least 25% of our outstanding voting stock;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum, or by the holders of a majority of the outstanding shares of capital stock then entitled to vote at an election of directors;
- specify that no stockholder is permitted to cumulate votes at any election of directors; and
- expressly authorize our board of directors to modify, alter or repeal our amended and restated bylaws.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. Any provision of our restated certificate of incorporation or amended and restated bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or our guidance.

Our quarterly and annual operating results may fluctuate significantly in the future, which makes it difficult for us to predict our future operating results. Our operating results may fluctuate due to a variety of factors, many of which are outside of our control and may be difficult to predict, including the following:

- the timing, results and cost of, and level of investment in, our clinical development activities for AG10 and any other product candidates we may identify and pursue, which may change from time to time;
- the cost of manufacturing AG10 or other product candidates that we may identify, which may vary depending on the quantity of production and the terms of our agreements with manufacturers;
- our ability to conduct clinical trials of AG10 in accordance with our plans and to obtain regulatory approval for AG10 or other product candidates that we may identify, and the timing and scope of any such approvals we may receive;
- the timing and success or failure of clinical trials for competing product candidates, or any other change in the competitive landscape of our industry, including consolidation among our competitors or partners;
- expenditures that we will or may incur to acquire or develop additional product candidates and technologies;
- our ability to attract, hire and retain qualified personnel;
- the level of demand for AG10 or other product candidates that we may identify, should they receive approval, which may vary significantly;
- future accounting pronouncements or changes in our accounting policies;
- the risk/benefit profile, cost and reimbursement policies with respect to AG10 or other product candidates that we may identify, if approved, and existing and potential future drugs that compete with our product candidates; and
- the changing and volatile U.S., European and global economic environments.

The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially.

Our future ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred substantial losses during our history and do not expect to become profitable in the near future and we may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset a portion of future taxable income, if any, subject to expiration of such carryforwards in the case of carryforwards generated prior to 2018. In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an “ownership change,” generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation’s ability to use its pre-change net operating loss carryforwards, or NOLs, and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. Our prior equity offerings and other changes in our stock ownership may have resulted in ownership changes. In addition, we may experience ownership changes in the future as a result of future offerings or subsequent shifts in our stock ownership, some of which are outside of our control. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. At the state level, there may also be

periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. In addition, under the Tax Act, the amount of post 2017 NOLs that we are permitted to deduct in any taxable year is limited to 80% of our taxable income in such year, where taxable income is determined without regard to the NOL deduction itself. The Tax Act generally eliminates the ability to carry back any NOL to prior taxable years, while allowing post 2017 unused NOLs to be carried forward indefinitely. There is a risk that due to changes under the Tax Act, regulatory changes, or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income tax liabilities. For these reasons, we may not be able to realize a tax benefit from the use of our NOLs, whether or not we attain profitability.

Comprehensive tax reform legislation could adversely affect our business and financial condition.

On December 22, 2017, the Tax Act was signed into law. The Tax Act, among other things, contains significant changes to corporate taxation, including (i) reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, (ii) limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), (iii) limitation of the deduction for net operating losses to 80% of current year taxable income in respect of net operating losses generated during or after 2018 and elimination of net operating loss carrybacks, (iv) one-time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, (v) immediate deductions for certain new investments instead of deductions for depreciation expense over time, and (vi) modifying or repealing many business deductions and credits. Any federal net operating loss incurred in 2018 and in future years may now be carried forward indefinitely pursuant to the Tax Act. It is uncertain if and to what extent various states will conform to the newly enacted federal tax law. We will continue to examine the impact the Tax Act may have on our business.

We do not currently intend to pay dividends on our common stock, and, consequently, our stockholders' ability to achieve a return on their investment will depend on appreciation in the price of our common stock.

We do not currently intend to pay any cash dividends on our common stock for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Therefore, you are not likely to receive any dividends on your common stock for the foreseeable future. Since we do not intend to pay dividends, your ability to receive a return on your investment will depend on any future appreciation in the market value of our common stock. There is no guarantee that our common stock will appreciate or even maintain the price at which our holders have purchased it.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk of fraud, misconduct or other illegal activity by our employees, independent contractors, consultants, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and negligent conduct that fails to: comply with the laws of the FDA and comparable foreign regulatory authorities; provide true, complete and accurate information to the FDA and comparable foreign regulatory authorities; comply with manufacturing standards we have established; comply with healthcare fraud and abuse laws in the United States and similar foreign fraudulent misconduct laws; or report financial information or data accurately or to disclose unauthorized activities to us. If we obtain FDA approval of AG10 or other product candidates that we may identify and begin commercializing those products in the United States, our potential exposure under such laws will increase significantly, and our costs associated with compliance with such laws are also likely to increase. In particular, research, sales, marketing, education and other business arrangements in the healthcare industry are subject to extensive laws designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, educating, marketing and promotion, sales and commission, certain customer incentive programs and other business arrangements generally. Activities subject to these laws also involve the improper use of information obtained in the course of patient recruitment for clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of business conduct and ethics, but it is not always possible to identify and deter misconduct by employees and third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

We will incur significant costs as a result of operating as a new public company, and our management will devote substantial time to new compliance initiatives.

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which require, among other things, that we file with the SEC, annual, quarterly and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and Nasdaq to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, in July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, was enacted. There are significant corporate governance and executive compensation-related provisions in the Dodd-Frank Act that require the SEC to adopt additional rules and regulations in these areas such as “say on pay” and proxy access. Recent legislation permits emerging growth companies to implement many of these requirements over a longer period and up to five years from the pricing of an initial public offering. We intend to take advantage of this new legislation, but cannot guarantee that we will not be required to implement these requirements sooner than budgeted or planned and thereby incur unexpected expenses. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We expect the rules and regulations applicable to public companies to substantially increase our legal and financial compliance costs and to make some activities more time-consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will decrease our net income or increase our net loss, and may require us to reduce costs in other areas of our business. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 2. Properties.

We lease approximately 4,659 square feet of office space in San Francisco, California under a lease agreement that expires in November 2022. We believe that our existing facilities are adequate to meet our business needs for at least the next 12 months and that additional space will be available on commercially reasonable terms, if required.

Item 3. Legal Proceedings.

As of the date of this Annual Report on Form 10-K, we were not party to any material legal proceedings. In the future, we may become party to legal proceedings and claims arising in the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we do not believe we are party to any claim or litigation the outcome of which, if determined adversely to us, would individually or in the aggregate be reasonably expected to have a material adverse impact on our financial position, results of operations or cash flows. Regardless of the outcome, litigation can have an adverse effect on us because of defense and settlement costs, diversion of management resources and other factors.

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.

Market Information

Our common stock trades on The Nasdaq Global Select Market under the symbol "EIDX."

Stockholders

As of April 9, 2019, we had approximately 30 record holders of our common stock.

Dividend Policy

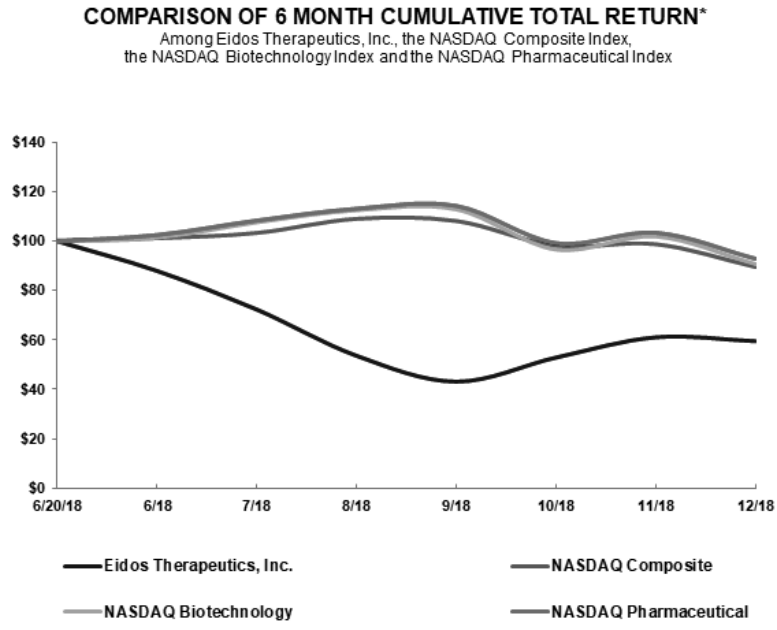
We have never declared or paid any cash dividends. We currently expect to retain all future earnings, if any, for use in the operation and expansion of our business, and therefore do not anticipate paying any cash dividends in the foreseeable future.

Securities Authorized for Issuance under Equity Compensation Plans

Information about our equity compensation plans is incorporated by reference to Item 12 of Part III of this Annual Report on Form 10-K.

Performance Graph

The following is not deemed "filed" with the Securities and Exchange Commission and is not to be incorporated by reference into any filing we make under the Securities Act of 1933, as amended, whether made before or after the date hereof and irrespective of any general incorporation by reference language in such filing. The graph below shows the cumulative total stockholder return assuming investment on the date specified in each of our common stock, the Nasdaq Composite Index, the Nasdaq Biotechnology Index, and the Nasdaq Pharmaceutical Index. The graph tracks the performance of a $100 investment in our common stock and in each index (with the reinvestment of all dividends) from June 20, 2018 to December 31, 2018.



	6/20/2018	6/30/2018	7/31/2018	8/31/2018	9/30/2018	10/31/2018	11/30/2018	12/31/2018
Eidos Therapeutics, Inc.	$ 100.00	$ 87.98	$ 72.36	$ 53.63	$ 43.17	$ 52.90	$ 61.12	$ 59.52
NASDAQ Composite	$ 100.00	$ 101.00	$ 103.13	$ 108.81	$ 107.96	$ 97.96	$ 98.59	$ 89.36
NASDAQ Biotechnology	$ 100.00	$ 101.51	$ 107.79	$ 112.72	$ 113.06	$ 96.78	$ 102.08	$ 90.77
NASDAQ Pharmaceutical	$ 100.00	$ 102.51	$ 108.42	$ 113.28	$ 114.44	$ 99.18	$ 103.43	$ 92.75

The stock price performance included in this graph is not necessarily indicative of future stock price performance

Sale of Unregistered Securities

During the year ended December 31, 2018, we did not issue or sell any unregistered securities not previously disclosed in a Quarterly Report on Form 10-Q or in a Current Report on Form 8-K.

Issuer Purchases of Equity Securities

None.

Item 6. Selected Financial Data.

The following selected statement of operations data for the years ended December 31, 2018, 2017 and 2016 and the balance sheet data as of December 31, 2018 and 2017 are derived from our audited financial statements that are included elsewhere in this report. The selected balance sheet data at December 31, 2016 has been derived from our audited financial statements which are not included in this report. The data set forth below is not necessarily indicative of results of future operations and should be read in conjunction with "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Item 8. Financial Statements and Supplementary Data" included in this Annual Report on Form 10-K to fully understand factors that may affect the comparability of the information presented below:

	Year Ended December 31		
	2018	2017	2016
	(In thousands, except for share and per share data)		
Statement of Operations Data:			
Operating expenses:			
Research and development	$ 28,539	$ 9,286	$ 1,734
General and administrative	9,240	2,730	651
Total operating expenses	37,779	12,016	2,385
Loss from operations	(37,779)	(12,016)	(2,385)
Other income (expense), net	(2,946)	75	(157)
Net and comprehensive loss	(40,725)	(11,941)	(2,542)
Deemed dividend related to redemption feature embedded in convertible promissory notes payable to stockholders	(6,523)	-	-
Gain on extinguishment of convertible promissory notes payable to stockholders	7,436	-	-
Net loss attributable to common stockholders	$ (39,812)	$ (11,941)	$ (2,542)
Net loss per share attributable to common stockholders	$ (1.86)	$ (3.32)	$ (0.98)
Weighted-average shares used in computing net loss per share basic, and diluted	21,366,995	3,596,673	2,599,641

	Year Ended December 31		
	2018	2017	2016
		(In thousands)	
Balance Sheet Data:			
Cash and cash equivalents	$ 157,147	$ 5,497	$ 1,956
Working capital	154,181	3,810	1,675
Total assets	160,112	6,343	1,975
Accumulated deficit	(65,270)	(14,532)	(2,591)
Redeemable convertible preferred stock tranche liability	—	—	315
Redeemable convertible preferred stock	—	17,028	3,795
Total stockholders' equity (deficit)	155,007	(13,196)	(2,473)

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

You should read the following discussion and analysis of our financial condition and results of operations together with "Item 6. Selected Financial Data" and the financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those discussed in "Item 1A. Risk Factors" and in other parts of this Annual Report.

Overview

We are a clinical stage biopharmaceutical company focused on addressing the large and growing unmet need in transthyretin, or TTR, amyloidosis, or ATTR. We are advancing our product candidate, AG10, to treat ATTR, a progressive and fatal family of diseases.

Our financial information includes allocations of expenses attributable to certain corporate functions that were provided to us by BridgeBio and its affiliates, including expenses attributable to certain executive personnel, facility-related costs, advisory services, insurance costs and other general corporate expenses. These allocations were made based on direct usage or estimates which are considered to be reasonable by our management and in accordance with our services agreement with BridgeBio. We have moved into our own leased facility and expect to reduce the services provided by BridgeBio as we hire additional personnel.

Since the commencement of our operations, we have devoted substantially all of our resources to research and development activities in support of our product development efforts, hiring personnel, raising capital to support and expand such activities and general and administrative support for these operations. We have funded our operations to date primarily from the issuance and sale of shares of common stock, redeemable convertible preferred stock and notes convertible into shares of redeemable convertible preferred stock.

In April 2016, we entered into a license agreement with the Board of Trustees of the Leland Stanford Junior University, or Stanford, for rights relating to novel transthyretin aggregation inhibitors. Under the license agreement, Stanford has granted us an exclusive worldwide license to make, use and sell products that are covered by the licensed patent rights.

In connection with the execution of the license agreement, we paid an upfront license fee in April 2016 and issued Stanford shares of common stock, which were recorded as research and development expense during the year ended December 31, 2016. During the years ended December 31, 2018, 2017 and 2016, we recorded $60,000, $10,000 and $25,000 under the license agreement related to annual maintenance fees, and milestone payments, respectively. We are obligated to make future payments to Stanford upon the achievement of specific intellectual property, clinical and regulatory milestone events, as well as pay royalties in the low single digits on future net sales, if any.

In October 2018, the FDA granted orphan drug designation in the United States to AG10 for the treatment of ATTR, and the Committee for Orphan Medicinal Products of the European Medicines Agency, or EMA, adopted a positive opinion for the designation of AG10 as an orphan medicinal product in the European Union, or EU, for the treatment of ATTR. The EMA also granted a product-specific pediatric investigational plan waiver to us for AG10.

We have not generated any revenue to date. Since inception, we have incurred significant operating losses. We have incurred net losses of $2.5 million, $11.9 million and $40.7 million during the years ended December 31, 2016, 2017 and 2018, respectively, and we expect to continue to incur significant losses for the foreseeable future. As of December 31, 2018, we had an accumulated deficit of $65.3 million. We expect these losses to increase as we continue our development of, and seek regulatory approvals for our product candidate, AG10, begin to commercialize AG10, if approved, and engage in any other research and development activities. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical trials and our expenditures on other research and development activities.

In June 2018, we completed our initial public offering (IPO) of our common stock pursuant to which we issued 7,187,500 shares of our common stock at a price of $17.00 per share and received $111.0 million in cash, net of underwriting discounts and commissions and offering costs.

As of December 31, 2018, we had $157.1 million in cash and cash equivalents.

We will need to obtain additional financing in the future and may seek financing through the issuance of our common stock, through other equity or debt financings or through collaborations or partnerships with other companies. The amount and timing of our future funding requirements will depend on many factors, including the pace and results of our clinical development efforts for AG10 and other research and development activities. We may not be able to raise additional capital on terms acceptable to us, or at all, and any failure to raise capital as and when needed would compromise our ability to execute on our business plan and we may have to significantly delay, scale back, or discontinue the development of AG10 or curtail any efforts to expand our product pipeline. We cannot assure you that we will ever be profitable or generate positive cash flow from operating activities

Financial operations overview

Research and development expense

Research and development expense consist primarily of costs incurred for the development of AG10, which include:

- employee-related expenses, including salaries, benefits and stock-based compensation;
- laboratory, manufacturing and other vendor expenses related to the execution of preclinical studies and clinical trials;
- the costs related to the production of clinical supplies and the engagement of consultants and other third-party service providers that conduct research and development activities on our behalf;
- fees paid under our license agreement with Stanford; and
- facilities and other allocated expenses, expenses for rent, depreciation and amortization, maintenance of facilities and other supplies.

We expense all research and development costs in the periods in which they are incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors, collaborators and third-party service providers. Nonrefundable payments made prior to the receipt of goods or services that will be used or rendered for future research and development activities are deferred and capitalized. The capitalized amounts are recognized as expense as the goods are delivered or the related services are performed.

The following table summarizes our research and development expenses incurred during the respective periods (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Clinical development	$ 11,963	$ 1,272	$ —
Contract manufacturing	6,960	1,888	—
Preclinical, discovery and other research and development costs	3,188	3,919	1,429
Compensation and related personnel costs	6,012	2,032	305
Facility and other costs	416	175	—
	$ 28,539	$ 9,286	$ 1,734

We expect our research and development expenses to increase substantially for the foreseeable future as we continue to conduct research and development activities related to AG10 and advance AG10 into later stages of clinical development, including our ongoing Phase 2 and Phase 3 clinical trials of AG10 in ATTR-CM and our planned Phase 3 clinical trial of AG10 in ATTR-PN and any subsequent preclinical or clinical development activities. The process of conducting the necessary clinical research to obtain regulatory approval is costly and time-consuming, and the successful development of AG10 is highly uncertain. As a result, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization of our product candidate, if at all.

General and administrative expense

Our general and administrative expenses consist primarily of personnel costs, allocated facility costs and other expenses for outside professional services, including legal, human resource, audit and accounting services. Personnel costs consist of salaries, benefits and stock-based compensation. We expect to incur additional expenses as a result of operating as a public company, including expenses related to compliance with the rules and regulations of the Securities and Exchange Commission, or SEC, and listing standards applicable to companies listed on a national securities exchange, additional insurance expenses, investor relations activities and other administrative and professional services. We also expect to increase the size of our administrative function to support the growth of our business.

Other income (expense), net

Other income (expense), net primarily includes gains and losses from the remeasurement of our liabilities related to our redeemable convertible preferred stock tranche liabilities and our redeemable convertible preferred stock warrant liability. We continued to adjust these liabilities for changes in estimated fair value until the settlement of the related redeemable convertible preferred stock tranche liability and redeemable convertible preferred stock warrant liability. At such time, the related redeemable convertible preferred stock tranche liability was reclassified to redeemable convertible preferred stock and we no longer recorded any related periodic fair value adjustments. We continued to record adjustments to the estimated fair value of the redeemable convertible preferred stock warrants until these were net exercised upon the completion of an IPO. Accordingly, the associated warrant liability was revalued and reclassed into equity.

Deemed dividend

In February 2018, we recognized a deemed dividend of $6.5 million related to the fair value of the redemption feature embedded within the Convertible Promissory Notes payable with stockholders and separately treated as a derivative liability. The charge was recognized in additional paid in capital.

Gain on extinguishment of convertible promissory notes

In March 2018, upon the conversion of the Convertible Promissory Notes into Series B redeemable convertible stock, we recognized a gain on debt extinguishment. As the Convertible Promissory Notes were issued to stockholders, we treated the gain on debt extinguishment as a capital contribution included in additional paid in capital.

Results of Operations

Comparison of the years ended December 31, 2018 and December 31, 2017

Research and development expense

	Years ended December 31,		Increase (Decrease)	
(in thousands)	2018	2017	$	%
Research and development	$ 28,539	$ 9,286	19,253	207%

Research and development expense increased by $19.3 million, or 207%, during the year ended December 31, 2018, compared to the year ended December 31, 2017. The increase was primarily attributable to an increase of $15.2 million in clinical trial related activities and contract manufacturing activities for our clinical trials and drug supply, increased personnel costs of $3.2 million due to a higher headcount, and an increase in stock-based compensation of $0.8 million.

General and administrative expense

	Years ended December 31,		Increase (Decrease)	
(in thousands)	2018	2017	$	%
General and administrative	$ 9,240	$ 2,730	6,510	238%

General and administrative expense increased by $6.5 million, or 238%, during the year ended December 31, 2018, compared to the year ended December 31, 2017. The increase was primarily attributable to an increase of $4.3 million in professional service fees and consulting services, primarily for financial, legal and accounting fees and an increase of $1.7 million in personnel-related expenses due to an increase in headcount to support the growth of our operations and an increase in stock-based compensation of $0.6 million.

Other income (expense), net

	Years ended December 31,		Increase (Decrease)	
(in thousands)	2018	2017	$	%
Other income (expense), net	$ (2,946)	$ 75	(3,021)	-4028%

Other income (expense), net was an expense of $2.9 million during the year ended December 31, 2018, compared to income of $75,000 during the year ended December 31, 2017. The expense during the year ended December 31, 2018 is primarily from the amortization of the debt discount of $1.0 million related to the convertible promissory note payable which was converted into Series B redeemable convertible preferred stock in March 2018 and the increase to fair value of the redeemable convertible preferred stock warrant liability and tranche liability of $3.2 million, partially offset by the interest income of $1.2 million. The other income during the year ended December 31, 2017 was due to the decrease in fair value of the redeemable convertible preferred stock tranche liability which was remeasured prior to settlement of in March 2017.

Deemed dividend

In February 2018, we recognized a deemed dividend of $6.5 million related to the fair value of the redemption feature embedded in the Convertible Promissory Notes payable with stockholders and separately treated as a derivative liability. The charge was recognized in additional paid in capital.

Gain on extinguishment of convertible promissory notes

In March 2018, upon the conversion of the Convertible Promissory Notes into Series B redeemable convertible stock, we recognized a gain on debt extinguishment. As the Convertible Promissory Notes were issued to stockholders, we treated the gain on debt extinguishment as a capital contribution included in additional paid in capital.

Comparison of the years ended December 31, 2017 and December 31, 2016

Research and development expense

	Years ended December 31,		Increase (Decrease)	
(in thousands)	2017	2016	$	%
Research and development	$ 9,286	$ 1,734	7,552	436%

Research and development expense increased by $7.6 million, or 436%, during the year ended December 31, 2017, compared to the year ended December 31, 2016. The increase was related to an increase of $2.5 million primarily in preclinical activities for AG10, an increase of $1.9 million in contract manufacturing activities for AG10 to supply our Phase 1 clinical trial, an increase of $1.7 million in salaries and employee-related expenses due to an increase in headcount, an increase of $1.3 million in clinical research organization and related costs for the Phase 1 clinical trial, which were incurred primarily in the second half of 2017, and an increase in $0.2 million in facility-related costs due to increased costs for our office and lab facilities.

General and administrative expense

	Years ended December 31,		Increase (Decrease)	
(in thousands)	2017	2016	$	%
General and administrative	$ 2,730	$ 651	2,079	319%

General and administrative expense increased by $2.1 million, or 319%, during the year ended December 31, 2017, compared to the year ended December 31, 2016. The increase was attributable to an increase of $1.2 million in professional service fees, primarily for financial and accounting consulting fees and an increase of $0.9 million in personnel-related expenses due to an increase in headcount to support the growth of our operations.

Other income (expense), net

	Years ended December 31,		Increase (Decrease)	
(in thousands)	**2017**	**2016**	**$**	**%**
Other income (expense), net	$ 75	$ (157)	232	-148%

Other income (expense), net was $0.2 million expense during the year ended December 31, 2016, compared to $75,000 income the year ended December 31, 2017. The change resulted from the final settlement of the redeemable convertible preferred stock tranche liability in March 2017. We will no longer record any related periodic fair value adjustments for the liability.

Critical accounting policies and estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with United States generally accepted accounting principles, or U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

While our significant accounting policies are described in the notes to our financial statements included elsewhere in this Annual Report on Form 10-K, we believe that the following critical accounting policies are most important to understanding and evaluating our reported financial results.

Accrued research and development

We record accrued expenses for estimated costs of our research and development activities conducted by third-party service providers, which include preclinical studies and clinical trials and contract manufacturing activities. We record the estimated costs of research and development activities based upon the estimated amount of services provided but not yet invoiced and include these costs in accrued expenses and other current liabilities in the balance sheets and within research and development expense in the statements of operations. These costs are a significant component of our research and development expenses.

We estimate the amount of work completed through discussions with internal personnel and external service providers as to the progress or stage of completion of the services and the agreed-upon fee to be paid for such services. We make significant judgments and estimates in determining the accrued balance in each reporting period. As actual costs become known, we adjust our accrued estimates. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed, and the number of patients enrolled and the rate of patient enrollment in our clinical trials may vary from our estimates and could result in us reporting amounts that are too high or too low in any particular period. Our accrued expenses are dependent, in part, upon the receipt of timely and accurate reporting from clinical research organizations and other third-party service providers. We record advance payments to service providers as prepaid assets, which are expensed as the contracted services are performed. To date, there have been no material differences from our accrued expenses to actual expenses.

Redeemable convertible preferred stock tranche liabilities

We determined that our obligations to issue additional shares of redeemable convertible preferred stock upon the achievement of certain milestones or at the option of the respective holders of such shares represent freestanding financial instruments. These instruments are subject to remeasurement with changes in fair value recognized in other income (expense), net in the statements of operations at each balance sheet date and prior to settlement.

Redeemable convertible preferred stock warrant liability

We issued freestanding warrants to purchase shares of redeemable convertible preferred stock in connection with the issuance of the Convertible Promissory Notes issued to stockholders that was converted into Series B redeemable convertible preferred stock (Series B Preferred Stock). We account for these warrants as a liability in our financial statements because the underlying instrument, Series B Preferred Stock, into which the warrants are exercisable contains redemption provisions that are outside our control.

The fair value of the warrants at the issuance date and at March 31, 2018 was determined using a probability-weighted expected return model in combination with an option pricing model. The warrants are remeasured at each financial reporting period prior to the settlement with any changes in fair value being recognized in other income (expense) in the statements of operations. Upon the completion of our IPO in June 2018, the outstanding warrants were net exercised.

Embedded derivative liability

We determined that the automatic conversion of the convertible promissory notes issued in 2018 into new shares of preferred stock at 70% of the issuance price of such shares upon the closing of a qualified financing is an embedded derivative liability. As this instrument was issued to stockholders, we treated the initial recognition as a deemed dividend included in additional paid in capital. This instrument was subject to remeasurement with changes in fair value recognized in other income (expense), net in the statements of operations. The embedded derivative liability balance was settled upon the conversion of the Convertible Promissory Notes into Series B Preferred Stock in March 2018.

Stock-based compensation

We recognize compensation costs related to stock options granted to employees and non-employees based on the estimated fair value of the awards on the date of grant. Prior to January 1, 2017, the fair value of the portion of the award that is ultimately expected to vest was recognized as expense over the requisite service periods in our statements of operations. Upon the adoption of ASU 2016-09 on January 1, 2017, we elected to recognize the actual forfeitures by reducing the employee stock-based compensation expense in the same period as the forfeitures occur. We estimate the grant date fair value, and the resulting stock-based compensation expense, using the Black-Scholes option-pricing model. The grant date fair value of the stock-based awards is recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective awards.

The Black-Scholes option-pricing model requires the use of highly subjective assumptions which determine the fair value of stock-based awards. These assumptions include:

- *Expected term*—The expected term represents the period that the stock-based awards are expected to be outstanding. We used the simplified method, which calculates the expected term as the average of the time-to-vesting and the contractual life of the options. For non-employees we use the contractual term.
- *Expected volatility*— Since we have only recently become a public company and have only a limited trading history for our common stock, the expected volatility was estimated based on the average historical volatilities of common stock of comparable publicly traded entities over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their size, stage in the life cycle or area of specialty. We will continue to apply this process until a sufficient amount of historical information regarding the volatility of our own stock price becomes available.
- *Risk-free interest rate*—The risk-free interest rate is based on the U.S. Treasury yield in effect at the time of grant for zero coupon U.S. Treasury notes with maturities approximately equal to the expected term of the awards.
- *Expected Dividend*—We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we used an expected dividend yield of zero.

We will continue to use judgment in evaluating the expected volatility, and expected terms utilized for our stock-based compensation calculations on a prospective basis.

Historically, for all periods prior to our IPO, the fair value of the shares of common stock underlying our share-based awards were estimated on each grant date by our board of directors. In order to determine the fair value of our common stock underlying option grants, our board of directors considered, among other things, timely valuations of our common stock prepared by an unrelated third-party valuation firm in accordance with the guidance provide by the American Institute of Certified Public Accountants Practice Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. Given the absence of a public trading market for our common stock prior to our IPO, our board of directors exercised reasonable judgment and considered a number of objective and subjective factors to determine the best estimate of the fair value of our common stock, including our stage of development; progress of our research and development efforts; the rights, preferences and privileges of our redeemable convertible preferred stock relative to those of our common stock; equity market conditions affecting comparable public companies and the lack of marketability of our common stock.

Since the completion of our IPO, our board of directors (or a committee thereof) determines the fair value of each share of common stock underlying stock option grants based on the closing price of our common stock on the Nasdaq Global Select Market as reported on the date of grant.

Income taxes

We use the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial reporting and the tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. We assess the likelihood that the resulting deferred tax assets will be realized. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized. Due to the net losses incurred and the uncertainty of realizing the deferred tax assets, for all the periods presented, we have a full valuation allowance against our deferred tax assets.

As of December 31, 2018, we had federal net operating loss carryforwards of $46.3 million and research and development credits totaling $0.5 million, as well as state net operating loss carryforwards of $47.4 million and state research and development credits of $0.3 million. If not utilized, the federal credits will expire at various dates beginning in 2037. The federal net operating loss carries forward indefinitely, subject to potential limitations as noted below. As of December 31, 2018, we had federal orphan drug credits of $1.5 million available to offset future taxable income.

Utilization of the net operating loss carryforwards may be subject to a substantial annual limitation due to the ownership change limitations provided by the Code, and similar state provisions. These ownership change limitations may limit the amount of net operating loss carryforwards and other tax attributes that can be utilized annually to offset future taxable income and tax, respectively. In general, an “ownership change” as defined by Section 382 of the Code results from a transaction or series of transactions over a three-year period resulting in an ownership change of more than 50 percentage points (by value) of the outstanding stock of a company by certain stockholders. The annual limitation may result in the expiration of net operating losses and credits before utilization.

We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained upon examination by the taxing authorities based on the technical merits of the position. The tax benefit recognized in the financial statements for a particular tax position is based on the largest benefit that is more likely than not to be realized. The amount of unrecognized tax benefits is adjusted as appropriate for changes in facts and circumstances, such as significant amendments to existing tax law, new regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. It is our policy to recognize both accrued interest and penalties, if any, related to unrecognized tax benefits in income tax expense.

Liquidity and Capital Resources

Liquidity and Capital Expenditures

Liquidity

As of December 31, 2018, we had $157.1 million of cash and cash equivalents and an accumulated deficit of $65.3 million. In June 2018, we completed our IPO of our common stock pursuant to which we issued 7,187,500 shares of our common stock at a price of $17.00 per share and received $111.0 million in cash, net of underwriting discounts and commissions and offering costs paid by us.

Our primary uses of cash are to fund operating expenses, primarily research and development expenditures. Cash used to fund operating expenses is impacted by the timing of when we pay these expenses, as reflected in the change in our outstanding accounts payable and accrued expenses.

We believe, based on our current operating plan and expected expenditures, that our existing cash and cash equivalents will be sufficient to meet our anticipated operating and capital expenditure requirements for at least the next 12 months from the filing of this Annual Report on Form 10-K. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. Our ultimate success depends on the outcome of our research and development activities. We expect to incur additional losses in the future and we anticipate the need to raise additional capital to fully implement our business plan.

We expect to further increase our research and development activities, which will increase the amount of cash used during 2019 and beyond. Specifically, we expect continued spending on clinical trials, continued manufacturing activities and higher payroll expenses as we increase our professional and scientific staff and research and development activities and advance AG10 into later-stage clinical development, including our ongoing and planned Phase 3 clinical trials. We will require additional financing to fund working capital and pay our obligations. We may pursue financing opportunities through the issuance of debt or equity to private investors. There can be no assurance that we will be successful in acquiring additional funding at levels sufficient to fund our operations or on terms favorable to us. Our future funding requirements will depend on many factors, including the following:

- the progress, timing, scope, results and costs of our ongoing and planned clinical trials and other research and development activities related to AG10 and any other product candidates we may identify and pursue, including the ability to enroll patients in a timely manner in our clinical trials;
- the costs of obtaining AG10 in amounts sufficient for our ongoing and planned clinical trials and, if approved, for commercialization;
- the cost, timing and outcomes of any regulatory approvals for AG10;
- our ability to successfully commercialize AG10, if approved;
- the extent to which we may acquire or in-license other product candidates and technologies;
- our ability to attract, hire and retain qualified personnel; and
- the cost of obtaining, maintaining, preparing, filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights related to AG10 and any other product candidates we may identify and pursue.

If we need to raise additional capital to fund our operations, funding may not be available to us on acceptable terms, or at all. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of or suspend one or more of our preclinical studies, research and development programs or commercialization efforts. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements.

To the extent that we raise additional capital through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our product candidates, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us. If we do raise additional capital through public or private equity offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

Cash flows

The following table summarizes our cash flows for the periods indicated (in thousands):

	Year Ended December 31,		
		June 30,	
	2018	2017	2016
Net cash used in operating activities	$ (33,141)	$ (9,717)	$ (2,059)
Net cash used in investing activities	(150)	(53)	-
Net cash provided by financing activities	184,941	13,311	3,990

Cash flows from operating activities

During the year ended December 31, 2018, cash used in operating activities was $33.1 million and consisted primarily of a net loss of $40.7 million. Our non-cash charges of $6.8 million primary consisted of embedded derivative revaluation of $0.1 million, a cost of $2.6 million related to the revaluation of the convertible redeemable preferred stock warrant liability, $2.5 million for stock-based compensation expense, amortization of debt discount of $1.0 million, and a cost of $0.6 million related to the redeemable convertible preferred stock tranche liability. The change in our net operating assets of $0.8 million was primarily due to an increase in accounts payable and accrued expenses of $3.0 million, as a result of an increase in operating expenses and timing of payments, partially offset by the change in prepaid expenses and other current assets of $2.1 million, due to timing of payments and the timing of activities for which payments were made.

During 2017, cash used in operating activities was $9.7 million, which consisted of a net loss of $11.9 million, adjusted by non-cash charges of $1.1 million and a net change of $1.1 million in our net operating assets and liabilities. The non-cash charges are primarily comprised of $1.1 million for stock-based compensation, offset by a gain of $0.1 million for the remeasurement of the redeemable convertible preferred stock tranche liability. The change in our net operating assets and liabilities was primarily due to an increase in accounts payable, accrued expenses and other liabilities and related party payable of $1.9 million as a result of an increase in operating expenses and timing of payments, offset by $0.5 million increase in cash used for prepaid and other current assets related to payments associated with clinical trials and studies and $0.2 million increase in cash used for other assets related to the security deposit for our facility leases.

Cash flows from investing activities

During 2018, cash used in investing activities was $0.2 million, which consisted of our purchase of property and equipment for our office and employees.

During 2017, cash used in investing activities was $0.1 million, which consisted of our purchase of property and equipment for our office and lab facilities.

Cash flows from financing activities

During the year ended December 31, 2018, cash provided by financing activities was $184.9 million, which consisted of the receipt of funds in connection with our IPO of $111.0 million, the net proceeds from the issuance of Series B redeemable convertible preferred stock of $63.9 million, proceeds from the issuance of convertible promissory notes of $10.0 million, and $0.1 million related to the receipt of funds from the exercise of options.

During the year ended December 31, 2017, cash provided by financing activities was $13.0 million, which consisted primarily of net proceeds from the issuance of Series Seed redeemable convertible preferred stock and $0.3 million related to the receipt of funds from the exercise of options.

Contractual Obligations and Other Commitments

The following table summarizes our contractual obligations as of December 31, 2018 (in thousands):

	Payments Due by Period				
Contractual Obligations:	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
Operating lease obligations.....	$ 1,346	$ 335	$ 1,011	$ -	$ -
Total contractual obligations....	$ 1,346	$ 335	$ 1,011	$ -	$ -

In September 2017, we entered into a one-year operating lease for laboratory facilities in San Francisco, California. In November 2017, we entered into an operating lease for a facility in San Francisco, California, which expires in November 2022. We provided a security deposit of $158,000 as collateral for the lease, which is included in other assets on the balance sheet.

Potential Obligations Not Included in the Table Above

We enter into agreements in the normal course of business with contract research organizations for clinical trials and with vendors for preclinical studies and other services and products for operating purposes, which are cancelable at any time by us, generally upon 30 to 60 days prior written notice. These payments are not included in this table of contractual obligations.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not have any off-balance sheet arrangements, as defined under SEC rules, including the use of structured finance, special purpose entities or variable interest entities.

Recent Accounting Pronouncements

Information regarding recent accounting pronouncements applicable to us is included in the notes to our financial statements included elsewhere in this Annual Report.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We are exposed to market risks in the ordinary course of our business. These risks primarily include interest rate sensitivities.

Our exposure to market risk is limited primarily to interest income sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because a significant portion of our investments are in interest bearing cash accounts and a mutual fund consisting of short-term debt securities issued by the U.S. government. The primary objective of our investment activities is to preserve principal. At December 31, 2018, we do not have any marketable securities, and therefore we believe that we are not exposed to any material market risk. We do not have any derivative financial instruments or foreign currency instruments. If interest rates had varied by 10% in the year ended December 31, 2018, it would not have had a material effect on our results of operations or cash flows for that period.

Item 8. Financial Statements and Supplementary Data.

Our financial statements and supplementary data and the report of our independent registered public accounting firm are included in Item 15 of this Annual Report on Form 10-K on pages F-1 through F-32.

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) and chief financial officer (CFO), has 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 (Exchange Act)), as of the end of the period covered by this Annual Report on Form 10-K. Based on such evaluation, our CEO and CFO have concluded that as of December 31, 2018, our disclosure controls and procedures were not effective as a result of the material weakness discussed below to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission (SEC), and that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure.

Material Weakness

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our financial statements will not be prevented or detected on a timely basis.

As of December 31, 2018, we identified a material weakness in our internal control over financial reporting related to a lack of sufficient qualified accounting personnel to properly analyze and conclude on the accounting for complex debt and equity transactions. This deficiency in the design and operating effectiveness of our controls failed to detect errors that resulted in the restatement of previously issued 2018 interim financial information.

Changes in Internal Control

Other than the material weakness noted above, there were no changes in our internal control over financial reporting identified in management's evaluation pursuant to Rules 13a-15(f) or 15d-15(f) of the Exchange Act during our fourth fiscal quarter ended December 31, 2018 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

The Annual Report on Form 10-K does not include a report of management's assessment regarding internal control over financial reporting or an attestation report of our independent registered public accounting firm due to a transition period established by the rules of the SEC for newly public companies.

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Remediation Plans

The Company is in the process of remediating this material weakness and improving its disclosure controls by hiring additional finance and accounting personnel and implementing processes to strengthen its internal technical accounting capabilities and disclosure controls processes and procedures

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Except as set forth below, the information required by this item is incorporated by reference from our definitive Proxy Statement to be filed with the SEC in connection with our 2019 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2018.

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A current copy of the code is posted on the Code of Conduct section of our website, which is located at www.eidostx.com. If we make any substantive amendments to, or grant any waivers from, the code of business conduct and ethics for our principal executive officer, principal financial officer, principal accounting officer, controller or persons performing similar functions, or any officer or director, we will disclose the nature of such amendment or waiver on our website or in a current report on Form 8-K.

Item 11. Executive Compensation.

The information required by this item is incorporated by reference from our definitive Proxy Statement to be filed with the SEC in connection with our 2019 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2018.

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

The information required by this item is incorporated by reference from our definitive Proxy Statement to be filed with the SEC in connection with our 2019 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2018.

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

The information required by this item is incorporated by reference from our definitive Proxy Statement to be filed with the SEC in connection with our 2019 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2018.

Item 14. Principal Accounting Fees and Services.

The information required by this item is incorporated by reference from our definitive Proxy Statement to be filed with the SEC in connection with our 2019 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2018.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) The following documents are filed as part of this report:

(1) FINANCIAL STATEMENTS

The financial statements filed as part of this Annual Report on Form 10-K are included in Part II, Item 8 of this Annual Report on Form 10-K.

(2) FINANCIAL STATEMENT SCHEDULES

Financial statement schedules have been omitted in this Annual Report on Form 10-K because they are not applicable, not required under the instructions, or the information requested is set forth in the financial statements or related notes thereto.

(3) EXHIBITS

The exhibits listed in the accompanying Exhibit Index are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K.

Item 16. Form 10-K Summary

Not applicable.

Exhibit Index

Exhibit Number	Exhibit Description	Incorporated by Reference		
		Form	Date	Number
3.1	Amended and Restated Certificate of Incorporation	S-1/A	6/15/2018	3.2
3.2	Amended and Restated Bylaws	S-1/A	6/15/2018	3.4
4.1	Specimen Common Stock Certificate	S-1/A	6/8/2018	4.1
4.2	Amended and Restated Investors' Rights Agreement by and among the Registrant and certain of its stockholders dated March 29, 2018	S-1	5/25/2018	4.2
4.3	Convertible Promissory Note, dated February 22, 2018	S-1	5/25/2018	4.3
4.4	Warrant to Purchase Shares of Capital Stock, dated February 22, 2018	S-1/A	6/8/2018	4.4
10.1#	Amended and Restated 2016 Equity Incentive Plan and forms of award agreements thereunder	S-1/A	6/8/2018	10.1
10.2#+	Form of Non-Qualified Stock Option Agreement for Company Consultants under the 2018 Stock Option and Incentive Plan			
10.3#	2018 Employee Stock Purchase Plan	S-1/A	6/8/2018	10.3
10.4#	Senior Executive Cash Incentive Bonus Plan	S-1/A	6/8/2018	10.4
10.5#	Employment Offer Letter Agreement, by and between the Registrant and Jonathan C. Fox, M.D., Ph.D., dated October 25, 2016	S-1	5/25/2018	10.5
10.6#	Non-Employee Director Compensation Policy	S-1	5/25/2018	10.6
10.7#	Employment Offer Letter Agreement, by and between the Registrant and Christine Siu, dated December 12, 2017	S-1	5/25/2018	10.7
10.8#	Employment Offer Letter Agreement, by and between the Registrant and Uma Sinha, Ph.D., dated June 1, 2016, as amended on May 24, 2018	S-1	5/25/2018	10.8
10.9†	Exclusive (Equity) Agreement, by and between the Registrant and the Board of Trustees of the Leland Stanford Junior University, effective as of April 10, 2016, as amended by Amendment No. 1 effective September 25, 2017	S-1	5/25/2018	10.9
10.10	Form of Indemnification Agreement by and between the Registrant and each of its directors and officers	S-1	5/25/2018	10.10
10.11	Intercompany Services Agreement, by and between the Registrant and BridgeBio Services Inc., dated as of May 1, 2017	S-1	5/25/2018	10.11
10.12	Office Lease, by and between the Registrant and 101 Montgomery Street Co., dated as of November 14, 2017	S-1	5/25/2018	10.12
10.13	QB3@953 Sublease Agreement, by and between the Registrant and QB3 Incubator Partners, LP, dated as of August 17, 2017	S-1	5/25/2018	10.13
10.14+	Employment Offer Letter Agreement, by and between the Registrant and Cameron Turtle, dated June 12, 2018			
10.15+	Lease Amendment Number One to the Office Lease, by and between the Registrant and 101 Montgomery Street Co., dated as of November 14, 2017, dated March 27, 2019			
21.1	List of Subsidiaries	S-1	5/25/2018	21.1
23.1+	Consent of Independent Registered Public Accounting Firm			
24.1+	Power of Attorney (included on signature page to this Annual Report on Form 10-K)			
31.1+	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			

31.2+	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1+*	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2+*	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS+	XBRL Instance Document
101.SCH+	XBRL Taxonomy Extension Schema Document
101.CAL+	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF+	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB+	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE+	XBRL Taxonomy Extension Presentation Linkbase Document

Represents management compensation plan, contract or arrangement.

+ Filed herewith.

† An order for confidential treatment of certain provisions has been granted by the Securities and Exchange Commission. Omitted material for which confidential treatment has been granted has been filed separately with the Securities and Exchange Commission.

* The certifications attached as Exhibit 32.1 and Exhibit 32.2 that accompany this Annual Report on Form 10-K are not deemed filed with the SEC and are not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Form 10-K, irrespective of any general incorporation language contained in such filing.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

Company Name

Date: April 15, 2019

By: /s/ Neil Kumar, Ph.D.
Neil Kumar, Ph.D.
Chief Executive Officer and Director
(Principal Executive Officer)

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Neil Kumar, Ph.D., and Christine Siu, and each of them, each with the power of substitution, their attorney-in-fact, to sign any amendments to this Annual Report on Form 10-K (including post-effective amendments), 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 their substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

Name	Title	Date
/s/ Neil Kumar, Ph.D. Neil Kumar, Ph.D.	Chief Executive Officer and Director *(Principal Executive Officer)*	April 15, 2019
/s/ Christine Siu Christine Siu	Chief Financial Officer *(Principal Financial and Accounting Officer)*	April 15, 2019
/s/ Eric Aguiar, M.D. Eric Aguiar, M.D.	Director	April 15, 2019
/s/ Rajeev Shah Rajeev Shah	Director	April 15, 2019
/s/ Ali Satvat Ali Satvat	Director	April 15, 2019
/s/ William Lis William Lis	Director	April 15, 2019

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Eidos Therapeutics, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Eidos Therapeutics, Inc. (the Company) as of December 31, 2018 and 2017, the related statements of operations and comprehensive loss, redeemable convertible preferred stock and stockholders' equity (deficit), and cash flows for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2019.
Redwood City, California
April 15, 2019.

EIDOS THERAPEUTICS, INC.
Balance Sheets
(in thousands, except share data)

	December 31, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	$ 157,147	$ 5,497
Related party receivable	34	67
Prepaid expenses and other current assets	1,789	484
Total current assets	158,970	6,048
Property and equipment, net	209	114
Other assets	933	181
Total assets	$ 160,112	$ 6,343
Liabilities, Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)		
Current liabilities:		
Accounts payable	$ 1,956	$ 566
Related party payable	256	372
Accrued expenses and other current liabilities	2,577	1,300
Total current liabilities	4,789	2,238
Other liabilities	316	273
Total liabilities	5,105	2,511
Commitments and contingencies		
Redeemable convertible preferred stock, $0.001 par value; 0 and 14,000,000 shares authorized as of December 31, 2018 and December 31, 2017, respectively; 0 and 12,856,325 shares issued and outstanding as of December 31, 2018 and December 31, 2017, respectively; aggregate liquidation preference of $17,032 as of December 31, 2017;	—	17,028
Stockholders' equity (deficit):		
Preferred stock, $0.001 par value, 5,000,000 and 0 shares authorized as of December 31, 2018 and December 31, 2017, respectively; and no shares issued and outstanding as of December 31, 2018 and December 31, 2017, respectively;	—	—
Common stock, $0.001 par value; 150,000,000 and 20,000,000 shares authorized as of December 31, 2018 and December 31, 2017, respectively; 36,760,536 and 5,137,771 shares issued and outstanding as of December 31, 2018 and December 31, 2017, respectively;	37	4
Additional paid-in capital	220,240	1,332
Accumulated deficit	(65,270)	(14,532)
Total stockholders' equity (deficit)	155,007	(13,196)
Total liabilities, redeemable convertible preferred stock and stockholders' equity (deficit)	$ 160,112	$ 6,343

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

EIDOS THERAPEUTICS, INC.
Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)

	Year Ended December 31		
	2018	**2017**	**2016**
Operating expenses:			
Research and development (includes related party expense (benefit) of ($66), $118 and zero, respectively)	$ 28,539	$ 9,286	$ 1,734
General and administrative (includes related party expense of $1,225, $679, and $161, respectively)	9,240	2,730	651
Total operating expenses	37,779	12,016	2,385
Loss from operations	(37,779)	(12,016)	(2,385)
Other income (expense), net	(2,946)	75	(157)
Net and comprehensive loss	(40,725)	(11,941)	(2,542)
Deemed dividend related to redemption feature embedded in Convertible Promissory Notes payable to stockholders	(6,523)	—	—
Gain on extinguishment of Convertible Promissory Notes payable to stockholders	7,436	—	—
Net loss attributable to common stockholders	$ (39,812)	$ (11,941)	$ (2,542)
Net loss per share attributable to common stockholders	$ (1.86)	$ (3.32)	$ (0.98)
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	21,366,995	3,596,673	2,599,641

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

EIDOS THERAPEUTICS, INC.
Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)
(in thousands, except share and per share data)

	Redeemable convertible preferred stock		Common stock		Additional paid in capital	Accumulated deficit	Total stockholders' equity (deficit)
	Share	Amount	Share	Amount			
Balance—December 31, 2015	—	—	**3,588,000**	**2**	—	**(49)**	**(47)**
Issuance of Series Seed redeemable convertible preferred stock, net of issuance costs of $73 and redeemable convertible preferred stock tranche liability of $287	3,019,323	3,640	—	—	—	—	—
Issuance of Series Seed redeemable convertible preferred stock upon conversion of redeemable convertible notes payable and accrued interest	24,202	32	—	—	—	—	—
Settlement of fair value of redeemable convertible preferred stock tranche liability	—	123	—	—	—	—	—
Issuance of common stock to founders and Stanford University in exchange for services and technology	—	—	56,809	1	8	—	9
Issuance of common stock upon early exercise of stock options	—	—	414,706	—	—	—	—
Stock-based compensation expense	—	—	—	—	107	—	107
Net loss and comprehensive loss	—	—	—	—	—	(2,542)	(2,542)
Balance—December 31, 2016	**3,043,525**	**3,795**	**4,059,515**	**3**	**115**	**(2,591)**	**(2,473)**
Issuance of Series Seed redeemable convertible preferred stock, net of issuance costs of $7	9,812,800	12,993	—	—	—	—	—
Settlement of fair value of redeemable convertible preferred stock tranche liability	—	240	—	—	—	—	—
Issuance of common stock to consultant for services	—	—	35,880	—	5	—	5
Issuance of restricted common stock to founders in connection with anti-dilution rights	—	—	390,546	—	—	—	—
Issuance of common stock upon exercise of stock options and restricted stock	—	—	651,830	1	26	—	27
Vesting of restricted stock and early exercised options	—	—	—		38	—	38
Stock-based compensation expense	—	—	—		1,148	—	1,148
Net loss and comprehensive loss	—	—	—			(11,941)	(11,941)
Balance—December 31, 2017	**12,856,325**	**17,028**	**5,137,771**	**4**	**1,332**	**(14,532)**	**(13,196)**
Issuance of Series B redeemable convertible preferred stock upon conversion of redeemable convertible promissory notes payable to stockholders	1,324,823	14,354	—	—	—	—	—
Recognition of beneficial conversion feature related to convertible promissory notes payable to stockholders	—	—	—	—	9,122	—	9,122
Deemed dividend related to embedded derivative liability on Convertible Promissory Notes payable to stockholders	—	—	—	—	(6,523)	—	(6,523)
Issuance of common stock to Stanford University	—	—	45,889	—	7	—	7
Issuance of common stock upon exercise of stock options and restricted stock	—	—	184,871	—	21	—	21
Issuance of common stock under employee stock plans	—	—	13,354	—	160	—	160
Reacquisition of beneficial conversion feature related to Convertible Promissory Notes payable to stockholders	—	—	—	—	(4,341)	(10,013)	(14,354)
Gain on extinguishment of Convertible Promissory Notes payable to stockholders	—	—	—	—	7,436	—	7,436
Issuance of Series B redeemable convertible preferred stock, net of issuance costs of $125 and fair value of redeemable convertible preferred stock tranche liability of $64	1,476,715	15,811	—	—	—	—	—
Issuance of Series B redeemable convertible preferred stock, net of issuance costs of $0	4,430,162	48,000	—	—	—	—	—
Settlement of fair value of redeemable convertible preferred stock tranche liability upon exercise of put option to stockholders into Series B redeemable convertible preferred stock	—	694	—	—	—	—	—
Net exercise of redeemable convertible preferred stock warrant liability	—	—	206,247	—	3,506	—	3,506
Conversion of redeemable convertible preferred stock to common stock at closing of initial public offering	(20,088,025)	(95,887)	24,025,270	25	95,862	—	95,887
Issuance of common stock upon initial public offering, net of issuance costs	—	—	7,187,500	8	110,962	—	110,970
Repurchase of early exercised stock options	—	—	(40,366)	—	—	—	—
Vesting of restricted stock and early exercised options	—	—	—	—	170	—	170
Stock-based compensation expense	—	—	—	—	2,526	—	2,526
Net loss and comprehensive loss	—	—	—	—	—	(40,725)	(40,725)
Balance—December 31, 2018	**—**	**$ —**	**36,760,536**	**$ 37**	**$ 220,240**	**$ (65,270)**	**$ 155,007**

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

EIDOS THERAPEUTICS, INC.
Statements of Cash Flows
(in thousands)

	Years Ended December 31,		
	2018	**2017**	**2016**
Cash Flows From Operating Activities:			
Net loss	$ (40,725)	$ (11,941)	$ (2,542)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	56	4	—
Stock-based compensation expense	2,526	1,148	107
Accrued interest on Convertible Promissory Notes payable	48	—	1
Change in fair value of derivative liability	(100)	—	6
Change in fair value of redeemable convertible preferred stock tranche liabilities	630	(75)	151
Change in fair value of redeemable convertible preferred stock warrant liability	2,628	—	—
Issuance of common stock in exchange for services and technology	7	5	9
Amortization of debt discount on Convertible Promissory Notes payable	963	—	—
Changes in assets and liabilities:			
Related party receivable	33	(62)	(5)
Prepaid expenses and other current assets	(1,305)	(477)	(7)
Other assets	(752)	(174)	(7)
Accounts payable	1,390	472	52
Accrued expenses and other liabilities	1,576	1,070	117
Related party payable	(116)	313	59
Net cash used in operating activities	(33,141)	(9,717)	(2,059)
Cash Flows From Investing Activities:			
Purchases of property and equipment	(150)	(53)	—
Net cash used in investing activities	(150)	(53)	—
Cash Flows From Financing Activities:			
Proceeds from issuance of redeemable convertible preferred stock, net of issuance costs	63,875	12,993	3,927
Proceeds from issuance of Convertible Promissory Notes payable	10,000	—	—
Proceeds from issuance of common stock upon exercise of stock options and restricted stock	96	318	63
Proceeds from issuance of common stock in initial public offering, net of issuance costs	110,970	—	—
Net cash provided by financing activities	184,941	13,311	3,990
Net increase in cash and cash equivalents	151,650	3,541	1,931
Cash and cash equivalents, beginning of period	5,497	1,956	25
Cash and cash equivalents, end of period	$ 157,147	$ 5,497	$ 1,956
Supplemental disclosure of non-cash financing activities:			
Settlement of redeemable convertible preferred stock tranche liability through issuance of preferred stock	$ 694	$ 240	$ 123
Vesting of restricted stock and early exercised options	170	38	—
Conversion of Convertible Promissory Notes payable and accrued interest into redeemable convertible preferred stock	14,354	—	32
Conversion of redeemable convertible preferred stock to common stock at closing of initial public offering	95,887	—	—
Reclassification of redeemable convertible preferred stock warrant liability to common stock at closing of initial public offering	3,506		
Issuance of common stock to employees under employee stock purchase	160	—	—

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

Note 1. Organization and description of business

Eidos Therapeutics, Inc., or the Company, was incorporated as an S corporation in the state of Delaware on August 6, 2013. The Company was converted into a C corporation on April 4, 2016 in conjunction with its Series Seed redeemable convertible preferred stock financing. The Company is advancing a drug candidate to treat multiple forms of transthyretin amyloidosis, which leads to organ damage, loss of organ function and eventual death from abnormal buildup of protein deposits predominantly in the heart and peripheral nervous system. The Company has been primarily engaged in business planning, research and development, recruiting personnel, and raising capital. The Company is headquartered in San Francisco, California and it operates as one operating segment.

Stock split

In June 2018, the Company's board of directors approved an amendment to the Company's amended and restated certificate of incorporation to effect a stock-split of the Company's issued and outstanding common stock at a 1.196-for-1 ratio, which was effected on June 7, 2018. In connection with the stock split, the authorized shares of common stock were increased from 27,000,000 to 32,292,000. The par value of common stock and redeemable convertible preferred stock was not adjusted as a result of the stock split. All issued and outstanding common stock, options to purchase common stock and per share amounts contained in the financial statements have been adjusted to reflect the stock split for all periods presented.

Liquidity

The Company has incurred net losses from operations since inception and has an accumulated deficit of $65.3 million as of December 31, 2018. The Company's ultimate success depends on the outcome of its research and development activities. The Company expects to incur additional losses in the future and it anticipates the need to raise additional capital to fully implement its business plan. Through December 31, 2018, the Company has financed its operations through private placements of redeemable convertible preferred stock, convertible promissory notes, and an initial public offering (IPO) of common stock.

On June 19, 2018, the Company's registration statement on Form S-1 (File No. 333-225235) relating to its IPO of common stock became effective. The IPO closed on June 22, 2018, at which time the Company issued 7,187,500 shares of its common stock at a price of $17.00 per share, which included shares issued upon the underwriters' exercise of their overallotment option to purchase 937,500 additional shares. In addition, upon closing the IPO, all outstanding shares of the redeemable convertible preferred stock and warrants converted into 24,231,517 shares of common stock. As of December 31, 2018, there are no shares of redeemable convertible preferred stock outstanding. Upon completion of the IPO, the Company received an aggregate of $111.0 million in cash, net of underwriting discounts and commissions, and after deducting offering costs paid by the Company.

The Company will continue to seek funds through equity or debt financings, or through other sources of financing, but there is no assurance that such financing will be available at terms acceptable to the Company, if at all.

Note 2. Summary of significant accounting policies

Basis of preparation

These financial statements have been prepared in accordance with United States generally accepted accounting principles, or GAAP. These financial statements include transactions with BridgeBio Pharma LLC and its affiliates, or BBP LLC, a controlling stockholder in the Company. For the periods presented, BBP LLC has provided consulting and management services to the Company in the ordinary course of business, including certain executive personnel, facility related costs, advisory services, insurance costs, and other general corporate expenses. These allocations were made based on direct usage, when identifiable, with the remainder allocated primarily based on a proportional share of headcount. The Company's historical financial statements do not purport to reflect what the Company's results of operations, financial position, or cash flows would have been if the Company had operated as an independent entity during the periods presented. Management believes the basis on which the expenses have been allocated to be a reasonable reflection of the utilization of services provided to or the benefit received by the Company during the periods presented. For more information on the allocated costs and related party transactions, see Note 6.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of expenses during the reporting period. On an ongoing basis, management evaluates its estimates, including those related the fair value of the redemption feature embedded derivative liability, the fair value of the redeemable convertible preferred stock tranche liability, the fair value of the redeemable convertible preferred stock warrant liability, the fair value of the Company's common stock, stock-based compensation, the useful lives of fixed assets, accruals for research and development activities, and income taxes. Management bases its estimates on historical experience and on other relevant assumptions that management believes to be reasonable under the circumstances. Actual results could differ from those estimates.

Concentrations of credit risk

Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash and cash equivalents and short-term investments. All the Company's funds are held by one financial institution that management believes is of high credit quality. Such deposits may, at times, exceed federally insured limits. The Company's cash equivalents are invested in highly-rated money market funds.

Cash and cash equivalents

All highly-liquid investments with an original maturity date of three months or less when purchased that are readily convertible into cash and have an insignificant interest rate risk are considered to be cash equivalents. There were no cash equivalents at December 31, 2017. As of December 31, 2018, the Company had cash and cash equivalents of $157.1 million.

Fair value of financial instruments

The carrying amount of the Company's financial instruments, including accounts payable and accrued expenses and other payables approximate fair value due to their short-term maturities. See Note 3 Fair value measurements regarding the fair value of the Company's embedded derivative liability related to its convertible promissory notes, redeemable convertible preferred stock tranche liability, and redeemable convertible preferred stock warrant liability.

Property and equipment, net

Property and equipment are stated at cost, net of accumulated depreciation and amortization. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, ranging from three to five years. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful lives of the assets. Maintenance and repairs are charged to expense as incurred. When assets are retired or otherwise disposed of, the cost and accumulated depreciation are removed from the balance sheet and any resulting gain or loss is reflected in operations in the period realized.

Impairment of long-lived assets

The Company reviews long-lived assets, primarily comprised of property and equipment, for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is measured by comparison of the carrying amount to the estimated undiscounted future cash flows which the assets or asset groups are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is the amount by which the carrying amount of the assets or asset groups exceeds the estimated discounted future cash flows arising from the assets or asset groups. There have been no such impairments of long-lived assets for any of the periods presented.

Research and development costs and accrued research and development

Research and development costs are expensed as incurred and consist of salaries and benefits, stock-based compensation expense, lab supplies and facility costs, as well as fees paid to others that conduct certain research and development activities on the Company's behalf.

The Company accrues for estimated costs of research and development activities conducted by third-party service providers, which include the conduct of preclinical studies and clinical trials, and contract manufacturing activities.

The Company records the estimated costs of research and development activities based upon the estimated amount of services provided but not yet invoiced and includes these costs in accrued expenses and other payables in the balance sheets and within research and development expense in the statements of operations. These costs are a significant component of the Company's research and development expenses. The Company accrues for these costs based on factors such as estimates of the work completed and in accordance with agreements established with its third-party service providers. The Company makes significant judgments and estimates in determining the accrued liabilities balance at each reporting date. As actual costs become known, the Company adjusts its accrued liabilities. The Company has not experienced any material differences between accrued costs and actual costs incurred. However, the status and timing of actual services performed, number of patients enrolled, and the rate of patient enrollments may vary from the Company's estimates, resulting in adjustments to expense in future periods. Changes in these estimates that result in material changes to the Company's accruals could materially affect the Company's results of operations.

Accrued repurchase liability for common stock

The Company records as a liability, within accrued expenses and other current liabilities, the purchase price of unvested common stock that the Company has a right to repurchase if and when the stockholder ceases to be a service provider to the Company before the end of the requisite service period. The proceeds are recorded as a liability and the proceeds related to the vested common stock is reclassified to additional paid-in capital as the Company's repurchase right lapses.

Redeemable convertible preferred stock tranche liabilities

The Company determined that its obligations to issue additional shares of preferred stock upon the achievement of certain milestones or at the option of the respective holders of such shares represent freestanding financial instruments. These instruments initially measured at fair value and are subject to remeasurement with changes in fair value recognized in other income (expense), net in the statements of operations. There were no such liabilities outstanding at December 31, 2018 or 2017, respectively.

Embedded derivative liability and deemed dividend

The Company determined that the automatic conversion of the Convertible Promissory Notes payable issued in 2018 into new shares of preferred stock at 70% of the issuance price of such shares upon the closing of a qualified financing is an embedded derivative liability to be measured at fair value. As this instrument was issued to stockholders, the Company treated the initial recognition as a deemed dividend included in additional paid in capital at its fair value of $6.5 million. The embedded derivative liability was subject to remeasurement with changes in fair value recognized in other income (expense), net in the statements of operations. The embedded derivative liability balance was settled upon the conversion of the convertible promissory notes into Series B redeemable convertible preferred stock (Series B Preferred Stock) in March 2018.

The deemed dividend impacted loss available to common stockholders and earnings per share for the year ended December 31, 2018.

Gain on extinguishment of convertible promissory notes payable

In March 2018, upon the conversion of the Convertible Promissory Notes into Series B Preferred Stock the Company recognized a gain on debt extinguishment. As the Convertible Promissory Notes were issued to stockholders, we treated the gain on debt extinguishment as a capital contribution included in additional paid in capital.

The gain on extinguishment of convertible promissory notes payable impacted loss available to common stockholders and earnings per share for the year ended December 31, 2018.

Net Loss per Attributable to Common Stockholders and Net Loss per Share

Basic net loss per common share is calculated by dividing net loss attributable to common stockholders taking into account the deemed dividend and gain on extinguishment of convertible promissory notes payable by

the weighted-average number of shares of common stock outstanding during the period, without consideration for potentially dilutive securities. Diluted net loss per common share is the same as basic net loss attributable to common stockholders per share since the effects of potentially dilutive securities are antidilutive given the Company's loss position.

Stock-based compensation

The Company periodically grants stock options and awards to employees and non-employees in non-capital raising transactions as compensation for services rendered. The Company accounts for stock option grants to employees, whereby the fair value of the award is measured on the date of grant and recognized over the vesting period. The Company accounts for stock option grants to non-employees whereby the amount of stock compensation expense recognized is determined based upon the measurement date at either a) the date at which a performance commitment is reached, or b) at the date at which the necessary performance to earn the equity instruments is complete. The Company believes that the estimated fair value of stock options is more readily measurable than the fair value of the services rendered. Non-employee stock-based compensation expenses are generally amortized over the related vesting period on a straight-line basis. In certain circumstances where there are no future performance requirements by the non-employee, option grants are immediately vested, and the total stock-based compensation charge is recognized at the measurement date.

The fair value of the Company's common stock option grants is estimated using a Black-Scholes option pricing model, which uses certain assumptions related to risk-free interest rates, expected volatility, expected life of the common stock options, and future dividends. Compensation expense is recognized based upon the value derived from the Black-Scholes option pricing model and based on actual experience. The Company has elected to recognize the actual forfeitures by reducing the employee stock-based compensation expense in the same period as the forfeitures occur. The assumptions used in the Black-Scholes option pricing model could materially affect compensation expense recognized in future periods.

The Company has in the past issued restricted shares of its common stock for share-based compensation programs. The Company measures compensation cost with respect to restricted shares issued to employees based upon the estimated fair value of the equity instruments at the date of the grant, with expenses recognized over the period which an employee is required to provide services in exchange for the award.

Income taxes

The Company uses the asset and liability method to account for income taxes. Under this method, deferred tax assets and liabilities are determined based on future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, and tax loss and credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates applied to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in operations in the period that includes the enactment date. A valuation allowance is established when necessary to reduce deferred tax assets to the amount expected to be realized.

The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that has a greater than 50% likelihood of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company records interest and penalties related to unrecognized tax benefits in income tax expense. To date, there have been no interest or penalties recorded for unrecognized tax benefits.

Recent accounting pronouncements

In February 2016, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, No. 2016-02, *Leases (Topic 842*), which for operating leases requires the lessee to recognize a right-of-use asset and a lease liability, initially measured at the present value of the lease payments, in its balance sheet. The guidance also requires a lessee to recognize single lease costs, calculated so that the cost of the lease is allocated over the lease term, on a generally straight-line basis. A modified retrospective transition approach is required for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements, including a number of optional practical expedients that entities may elect to apply. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. The Company adopted this ASU effective as of January 1, 2019 with a cumulative adjustment to accumulated

deficit rather than retrospectively adjusting prior periods. This adoption approach will result in a balance sheet presentation that is not comparable to the prior period in the first year of adoption. To illustrate the magnitude of this change, the amount of the Company's off-balance sheet operating leases at December 31, 2018 is disclosed in "Note 13 - Commitments and Contingencies." Beginning on January 1, 2019, the Company's operating leases, excluding those with terms less than 12 months, will be discounted and recorded as assets and liabilities on the Company's balance sheet. At January 1, 2019 the Company has one operating lease with a term greater than 12 months.

In June 2018, the FASB issued ASU No. 2018-07, *Stock-based Compensation: Improvements to Nonemployee Share-based Payment Accounting*, which amends the existing accounting standards for share-based payments to nonemployees. This ASU aligns much of the guidance on measuring and classifying nonemployee awards with that of awards to employees. Under the new guidance, the measurement of nonemployee equity awards is fixed on the grant date. This ASU becomes effective in the first quarter of fiscal year 2019 and early adoption is permitted but no earlier than an entity's adoption date of Revenue from Contracts with Customers (Topic 606). Entities will apply the ASU by recognizing a cumulative-effect adjustment to retained earnings as of the beginning of the annual period of adoption. The Company is currently evaluating the impact that ASU 2018-07 will have on its financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement*, which amends ASC 820, Fair Value Measurement. This ASU modifies the disclosure requirements for fair value measurements by removing, modifying, or adding certain disclosures. The effective date is the first quarter of fiscal year 2020, with early adoption permitted for the removed disclosures and delayed adoption until fiscal year 2020 permitted for the new disclosures. The removed and modified disclosures will be adopted on a retrospective basis and the new disclosures will be adopted on a prospective basis. The Company is currently evaluating the impact that ASU 2018-07 will have on its financial statements.

Note 3. Fair value measurements

Financial assets and liabilities are recorded at fair value. The accounting guidance for fair value provides a framework for measuring fair value, clarifies the definition of fair value and expands disclosures regarding fair value measurements. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the reporting date. The accounting guidance establishes a three-tiered hierarchy, which prioritizes the inputs used in the valuation methodologies in measuring fair value as follows:

Level 1—Quoted prices in active markets for identical assets or liabilities;

Level 2—Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

In determining fair value, the Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible as well as considers counterparty credit risk in its assessment of fair value.

There were no transfers between Level 1, Level 2 and Level 3 categories during the periods presented.

Financial assets measured and recognized at fair value are as follows (in thousands):

	December 31, 2018			
	Total	Level 1	Level 2	Level 3
Assets:				
Money Market Funds	$ 157,147	$ 157,147	$ —	$ —
Total	$ 157,147	$ 157,147	$ —	$ —

There were no financial liabilities at either December 31, 2017 or 2018, and no financial assets outside of cash in an operating account as of December 31, 2017.

Following is the activity related to Level 3 financial assets and liabilities of the Company.

Embedded derivative liability in the convertible promissory notes payable

The Convertible Promissory Notes payable issued in February 2018 had a redemption feature which was determined to be an embedded derivative requiring bifurcation and separate accounting. The fair value of the derivative was determined based on an income approach that identified the cash flows using a "with-and-without" valuation methodology. The inputs used to determine the estimated fair value of the derivative instrument were based primarily on the probability of an underlying event triggering the embedded derivative occurring and the timing of such event. The following table sets forth a summary of the changes in the fair value of the Company's embedded derivative liability in the Convertible Promissory Notes payable (in thousands):

	Year Ended December 31,	
	2018	2017
Derivative instrument:		
Beginning balance	$ —	$ —
Initial fair value of the embedded derivative liability issued with the Convertible Promissory Notes payable	6,523	—
Change in fair value upon revaluation recognized in other income (expense), net	(100)	—
Settlement of the embedded derivative liability	(6,423)	—
Ending balance	$ —	$ —

Redeemable convertible preferred stock tranche liabilities

Series seed redeemable convertible preferred stock tranche liability

The fair value of the Series Seed redeemable convertible preferred stock tranche liabilities were based on significant inputs not observed in the market and thus represents a Level 3 measurement. The Company estimated the fair value of the Series Seed redeemable convertible preferred stock warrant liability using a Black-Scholes option pricing model.

Series B redeemable convertible preferred stock tranche liability

The fair value of the Series B redeemable convertible preferred stock tranche liability was based on significant inputs not observed in the market and thus represents a Level 3 measurement. The Company estimated the fair value of the redeemable convertible preferred stock warrant liability using a PWERM that included probabilities of three scenarios, The PWERM included probabilities of three scenarios, including a scenario in which an IPO occurs in June 2018. The scenarios were weighted based on the Company's estimate of each event occurring in deriving the estimated fair value. The redeemable convertible preferred stock warrant liability was remeasured upon the IPO using the value of the underlying share based on the IPO price less the warrant strike price.

The following table sets forth a summary of the changes in the fair value of the Company's Level 3 financial instrument as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Redeemable convertible preferred stock tranche liability:			
Beginning balance	$ —	$ 315	$ —
Issuance of Series B redeemable convertible preferred stock tranche liability	64	—	287
Change in fair value upon revaluation recognized in other income (expense), net	630	(75)	151
Settlement of redeemable convertible preferred stock tranche liability due to the issuance of redeemable convertible preferred stock	(694)	(240)	(123)
Ending balance	$ —	$ —	$ 315

Redeemable convertible preferred stock warrant liability

The fair value of the redeemable convertible preferred stock warrant liability (see Note 5) is based on significant inputs not observed in the market and thus represents a Level 3 measurement. The Company estimated the fair value of the redeemable convertible preferred stock warrant liability using the Black-Scholes option pricing model (see Note 8). The following table sets forth a summary of the changes in the fair value of the Company's redeemable convertible preferred stock warrant liability (in thousands):

	Year Ended December 31,	
	2018	2017
Redeemable convertible preferred stock warrant liability:		
Beginning balance	$ —	$ —
Issuance of redeemable convertible preferred stock warrant liability	878	—
Change in fair value upon revaluation recognized in other income (expense), net	2,628	—
Reclassification of redeemable convertible preferred stock warrant liability to common stock at closing of initial public offering	(3,506)	—
Ending balance	$ —	$ —

Note 4. Balance sheet components

Property and equipment, net

Property and equipment, net consisted of the following (in thousands):

	December 31,	
	2018	2017
Leasehold improvements	$ 86	$ 77
Computer equipment	87	29
Office furniture and equipment	96	12
Total property and equipment, cost	269	118
Less: accumulated depreciation and amortization	(60)	(4)
Total property and equipment, net	$ 209	$ 114

All the Company's property and equipment is located in the United States. Depreciation and amortization expense for the years ended December 31, 2018, 2017 and 2016 was $56,000, $4,000 and zero, respectively.

Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consisted of the following (in thousands):

	December 31,	
	2018	2017
Accrued research and development costs	$ 2,055	$ 564
Accrued employee related expenses	78	606
Liability for unvested stock, short-term	142	109
Accrued other current liabilities	302	21
Total accrued expenses and other current liabilities	$ 2,577	$ 1,300

As of December 31, 2018, and 2017, balances of $244,000 and $208,000, respectively, in other liabilities related to the long-term liability for unvested stock.

Note 5. Convertible promissory notes

September 2015 Convertible Note

In September 2015, the Company entered into a convertible note with a related party, a stockholder of the Company. The principal amount of the convertible note was $25,000 with a fixed interest rate of 5% per annum. The note was convertible at the option of the holder at the next equity financing of at least $1.5 million at a price of 80% of the new equity price. The redemption feature was deemed to be a freestanding derivative with an initial fair value of $6,000. In April 2016, the entire amount due, including accrued interest of $1,000, was converted into 24,202 shares of Series Seed redeemable convertible preferred stock.

February 2018 Promissory Notes

In February 2018, the Company entered into a Note and Warrant Purchase Agreement with BBP LLC and Stanford University (the Convertible Promissory Notes). The Company issued two Convertible Promissory Notes in an aggregate principal amount of $10.0 million. The Convertible Promissory Notes had a maturity date of the earliest of a qualified financing, a deemed liquidation event, a qualified initial public offering, or February 2019. The Convertible Promissory Notes had an annual interest rate of 5.0%. The Convertible Promissory Notes were convertible into future preferred stock at a 30% discount to the price paid by investors in the Company's next preferred equity financing of at least $10.0 million or convertible into common stock at the price per share in an IPO with aggregate proceeds of at least $30.0 million.

In connection with the Convertible Promissory Notes, the Company issued warrants for the purchase of $4.0 million in shares of the Company's Series Seed redeemable convertible preferred stock or the Company's preferred stock in the next equity financing. The warrant exercise period commenced upon the earlier of the closing of the next qualified financing and the consummation of a deemed liquidation event. The exercise price of the warrant was the price per share in the next equity financing if the warrant was exercisable for the Company's redeemable convertible preferred stock in the next qualified financing, or $1.3248 per share if the warrant was exercisable for shares of Series Seed redeemable convertible preferred stock.

Upon issuance of the Convertible Promissory Notes, the Company recorded the fair value of the warrants of $0.9 million as a debt discount and redeemable convertible preferred stock warrant liability.

The Company also determined that a beneficial conversion feature existed at the time the Convertible Promissory Notes were issued because the fair value of the securities into which the Convertible Promissory Notes were convertible at the time of issuance, Series Seed redeemable convertible preferred stock, was greater than the effective conversion price on the borrowing date. Accordingly, the Company recorded a beneficial conversion feature of $9.1 million. The beneficial conversion feature was recorded as a debt discount with an offset to additional paid-in capital.

The discounts associated with both the warrants and beneficial conversion feature were amortized to interest expense using the effective interest method through February 2019, the contractual maturity date of the Convertible Promissory Notes. During the year ended December 31, 2018, the Company recognized interest expense of $1.0 million.

The Convertible Promissory Notes also contained a redemption feature that was determined to be an embedded derivative requiring bifurcation. The fair value of the embedded derivative liability at issuance was determined to be $6.5 million and was recorded as a deemed dividend as the transaction was with stockholders.

Changes in the fair value of the redeemable convertible preferred stock warrant liability and embedded derivative liability have been recorded within other income (expense), net, in the statement of operations.

Upon completion of the Series B redeemable convertible preferred stock (Series B Preferred Stock) offering in March 2018, the Convertible Promissory Notes were redeemed under their qualified financing redemption feature whereby the aggregate of the outstanding principal and accrued interest balance of the Convertible Promissory Notes of $10.0 million was converted into 1,324,823 shares of Series B preferred stock at a conversion price of $7.5844 per share resulting in issuance of $14.4 million of Series B Preferred Stock. The redemption of the Convertible Promissory Notes was accounted for as a debt extinguishment, which resulted in a gain of $7.4 million. The extinguishment gain was recognized in equity and included the reacquisition of the beneficial conversion feature which was measured using the intrinsic value of the conversion option at the extinguishment date of $14.4 million and the settlement of the embedded derivative liability of $6.5 million. This gain was recorded in additional paid-in capital since the holders of the Convertible Promissory Notes were stockholders and the arrangement was considered a capital transaction.

The warrants associated with the Convertible Promissory Notes also became warrants to purchase 369,180 shares of the Company's Series B redeemable convertible preferred stock at an exercise price of $10.8348 per share. These warrants were net exercised upon the completion of the IPO into 206,247 shares of the Company's common stock.

Note 6. Related party transactions

BridgeBio Pharma LLC

BridgeBio Pharma LLC and its affiliates, or BBP LLC, is a controlling stockholder in the Company, as it owned 61% and 75% of the Company's total outstanding shares as of December 31, 2018 and 2017, respectively. In April 2016, the Company began receiving consulting, management, facility and infrastructure services pursuant to a services agreement with BBP LLC. The initial agreement was entered into on March 1, 2016 and was superseded by the subsequent agreement effective as of May 1, 2017.

The Company incurred the following expenses under the agreement with BBP LLC (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Rent	$ 39	$ 76	$ 23
Facility	121	65	15
Consulting	999	656	123
	$ 1,159	$ 797	$ 161

As of December 31, 2018, and 2017, the Company had outstanding receivables from BBP LLC of $34,000 and $67,000, respectively, related to providing services to other related companies of BBP LLC. As of December 31, 2018, and 2017, the Company had outstanding liabilities due to BBP LLC of $0.2 million and $0.4 million, respectively.

Founders

Dr. Graef Consulting Agreement

In April 2016, the Company entered into a consulting agreement with Dr. Graef, one of the Company's founders. Pursuant to the consulting agreement, Dr. Graef agreed to provide consulting services in connection with the discovery and development of novel TTR stablizers. As compensation for these services, Dr. Graef is entitled to an annual fee in the amount of up to $150,000 and reimbursement by the Company for pre-approved expenses. The consulting agreement has a term of four years but may be terminated by either party for any reason with thirty days' prior notice.

In September 2017, the Company issued to Dr. Graef 195,273 shares of common stock in order to offset dilution to her ownership in connection with the Company's issuance of additional shares of Series Seed Preferred Stock in financing transactions. The Company recognized the entire expense for these awards upon the closing of the fourth tranche of the Series Seed Preferred Stock financing due to the awards being associated with the anti-dilution rights related to the Series Seed Preferred Stock financings, and determined the vesting related to these awards to be non substantive. In addition, the Company agreed to make a "gross-up" payment of $83,073 to Dr. Graef for the taxes owed by Dr. Graef as a result of such issuance of common stock, which payment was made in January 2018. Starting on June 20, 2018, Dr. Graef is not considered a related party.

Dr. Alhamadsheh Consulting Agreement

In August 2016, the Company entered into a consulting agreement with Dr. Alhamadsheh, one of the Company's founders. Pursuant to the consulting agreement, Dr. Alhamadsheh agreed to provide consulting services in connection with the discovery and development of novel TTR stablizers. As compensation for these services, Dr. Alhamadsheh is entitled to an annual fee in the amount of up to $115,000 and reimbursement by the Company for pre-approved expenses. The consulting agreement has a term of four years but may be terminated by either party for any reason with thirty days' prior notice.

In September 2017, the Company issued to Dr. Alhamadsheh 195,273 shares of common stock in order to offset dilution to his ownership in connection with the Company's issuance of additional shares of Series Seed Preferred Stock in financing transactions. The Company recognized the entire expense for these awards upon the closing of the fourth tranche of the Series Seed Preferred Stock financing due to the awards being associated with the anti-dilution rights related to the Series Seed Preferred Stock financings, and determined the vesting related to these awards to be non substantive. In addition, the Company agreed to make a "gross-up" payment of $83,073 to Dr. Alhamadsheh for the taxes owed by Dr. Alhamadsheh as a result of such issuance of common stock, which payment was made in January 2018. Starting on June 20, 2018, Dr. Alhamadsheh is not considered a related party.

The Company incurred the following research and development expenses for services under these consulting agreements and stock-based compensation (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Dr. Graef	$ 150	$ 279	$ 163
Dr. Alhamadsheh	115	244	134
	$ 265	$ 523	$ 297

Option Award to Dr. Huh

In May 2018, the Company's board of directors approved a grant to Dr. Huh (a member of the board of directors) of an option to purchase 83,720 shares of common stock pursuant to the Company's Amended and Restated 2018 Stock Option and Incentive Plan (the "2018 Plan"). The option was subject to vesting in equal annual installments over three years from the grant date, subject to Dr. Huh's continued service as a director through the applicable vesting dates. The award is subject to full accelerated vesting upon a "sale event," as defined in the 2018 Plan. Dr. Huh resigned from the Company's board of directors in December 2018, at which time all options were cancelled.

Note 7. Redeemable convertible preferred stock

Series Seed Preferred Stock Financing

In April 2016, the Company completed a Series Seed redeemable convertible preferred stock (Series Seed Preferred Stock) financing. The initial total committed amount was $8.0 million to be received in three tranches. The first tranche of $1.0 million was received and 754,831 shares were issued in April 2016 and the second tranche of $3.0 million was received and 2,264,492 shares were issued in September 2016. The third tranche of $4.0 million was received and 3,019,323 shares were issued in March 2017. In September 2017, the Company completed an extension of its Series Seed Preferred Stock financing for a total of $9.0 million and 6,793,477 shares of Series Seed Preferred Stock were issued. The Company also converted its related party note payable, tranche liability and accrued interest of $32,000 into 24,202 shares of Series Seed Preferred Stock concurrently with the closing of the first tranche of this financing in April 2016 (see Note 8).

Series B Preferred Stock Financing

In March 2018, the Company sold an aggregate of 1,476,715 shares of Series B redeemable convertible preferred stock financing in an initial closing for total gross proceeds of $16.0 million. An additional 4,430,162 shares of Series B Preferred Stock in an additional closing was contingent upon the release of specified data study either upon the request of the Company for investors to purchase the shares or the investors to call for the purchase of such shares. The Company determined that right to cause the Series B stockholders to purchase additional shares of redeemable convertible preferred stock upon the achievement of the specified milestone represents a freestanding financial instrument that was recorded as a redeemable convertible preferred stock tranche liability.

The Company recorded the redeemable convertible preferred stock tranche liability incurred in connection with its Series B Preferred Stock at fair value of $0.1 million on the date of issuance and remeasured the liability on each subsequent balance sheet date and prior to settlement and issuance of the additional shares. Changes in fair value are recognized as a gain or loss within other income (expense), net in the statements of operations.

In May 2018, the Company issued 4,430,162 shares of Series B Preferred Stock at a purchase price of $10.8348 per share, for total proceeds of $48.0 million. The Company exercised its option to issue the Series B Preferred Stock and thus the tranche liability of $0.7 million was reclassified to Series B redeemable convertible preferred stock upon the closing of the sale of additional shares.

Following the closing of the IPO, all outstanding shares of the Series Seed and Series B Preferred Stock converted into 24,025,270 shares of common stock and the related carrying value was reclassified to common stock and additional paid-in capital. There were no shares of redeemable convertible preferred stock outstanding as of December 31, 2018.

The table below provides information on the Company's redeemable convertible preferred stock as of December 31, 2017 (in thousands, except shares and original issue price):

Series	Shares authorized	Shares outstanding	Price per share	Proceeds, net of issuance cost (in thousands)	Liquidation amount (in thousands)
Seed	14,000,000	12,856,325	$ 1.3248	$ 16,920	$ 17,032

Note 8. Redeemable convertible preferred stock tranche liabilities

Series Seed Preferred Stock

In April 2016, the Company entered into a Series Seed Preferred Stock Purchase Agreement, or the Series Seed Agreement, for the issuance of up to 6,062,848 shares of Series Seed Preferred Stock at a price of $1.3248 per share in three closings. Upon the initial closing on April 4, 2016, 754,831 shares of Series Seed Preferred Stock were issued for gross proceeds of $1.0 million and 24,202 shares were issued upon conversion of outstanding related party convertible note and accrued interest of $26,000. According to the initial terms of the Series Seed Agreement, the Company can issue 5,283,815 shares under the same terms as the initial closing, in two subsequent closings contingent upon the achievement of certain scientific milestones. The second tranche of $3.0 million was received and 2,264,492 shares were issued in September 2016. The third tranche of $4.0 million was received and 3,019,323 shares were issued in March 2017.

The Company has determined that the Company's obligation to issue additional shares of its redeemable convertible preferred stock represents a freestanding financial instrument. The freestanding redeemable convertible preferred stock tranche liability (Series Seed Tranche Liability) was initially recorded at fair value, with fair value changes recognized as increases or reductions in other income (expense), net in the statements of operations. The Company continued to adjust the liability for changes in the estimated fair value until the settlement of the Series Seed Tranche Liability. The Company recorded a Series Seed Tranche Liability in April 2016 of $0.3 million related to the Series Seed Preferred Stock financing.

The Company estimated the fair value of the Series Seed Tranche Liability using a Black-Scholes option pricing model and the following assumptions to determine the fair value of the redeemable convertible preferred stock tranche liability:

Expected term—The expected term represents the period for which the redeemable convertible preferred stock tranche liabilities are expected to be outstanding.

Expected volatility—The volatility data was estimated based on a study of publicly traded industry peer companies, as there is no trading history for the Company's redeemable convertible preferred stock. For purposes of identifying these comparable peer companies, the Company considered the industry, stage of development, size and financial leverage. The Company has measured historical volatility over a period equivalent to the expected term and believes that historical volatility provides a reasonable estimate of future expected volatility.

Expected dividends—The Black-Scholes valuation model calls for a single expected dividend yield as an input. The Company currently has no history or expectation of paying cash dividends on its preferred stock.

Risk-free interest rate—The risk-free interest rate is based on the yield available on U.S. Treasury zero-coupon issues similar in duration to the expected term of the redeemable convertible preferred stock tranche liability.

The Black-Scholes option pricing model resulted in a tranche liability of $0.1 million for the second milestone closing and $0.2 million for the third milestone closing using the following assumptions: estimated equity value of $2.1 million, a term of three years, a risk-free rate of 0.92%, a volatility of 75%, and a dividend yield of 0.0%.

The second milestone closing of the Series Seed Tranche Liability revalued at the time of settlement (September 7, 2016) and therefore, $0.1 million was reclassified to redeemable convertible preferred stock at that date. The third milestone closing fair value was remeasured as of December 31, 2016 with the following assumptions: estimated equity value was $4.0 million, a term of 2.5 years, a risk-free rate of 1.34%, a volatility of 76% and a dividend yield of 0.0% resulting in a fair value of $0.3 million.

The Series Seed Tranche Liability for the third milestone was settled in March 2017 at the time of the final tranche closing of the Series Seed Preferred Stock and the remeasured liability balance of $0.2 million was reclassified to redeemable convertible preferred stock. The final closing fair value was remeasured with the following assumptions: estimated equity value was $4.0 million, a term of 2.3 years, a risk-free rate of 1.40%, a volatility of 70% and a dividend yield of 0.0%.

Series B Redeemable Convertible Preferred Stock

In March 2018, the Company entered into a Series B Preferred Stock Purchase Agreement, or the Series B Agreement, for the issuance of up to 7,231,700 shares of Series B redeemable convertible preferred stock at a price of $10.8348 per share in two closings. Upon the initial closing on March 29, 2018, 1,476,715 shares of Series B redeemable convertible preferred stock were issued for gross proceeds of $16.0 million and 1,324,823 shares were issued upon conversion of the outstanding Convertible Promissory Notes principal balance and accrued interest of $10.0 million into $14.4 million of Series B Preferred Stock.

The Series B Agreement provided that the Company could issue an additional 4,430,162 shares under the same terms as the initial closing, in an additional closing contingent upon the achievement of certain milestone. Either the investors or the Company could provide written notice for the additional closing to occur.

The Company determined that its obligation to issue additional shares of its redeemable convertible preferred stock and the Company's right to request investors to purchase additional shares of its redeemable convertible preferred stock represents a freestanding financial instrument. The freestanding redeemable convertible preferred stock tranche liability (Series B Tranche Liability) was initially recorded at fair value, with fair value changes recorded within other income (expense), net in the statement of operations.

The Company continued to adjust the Series B Tranche Liability for changes in the fair value until the settlement of the redeemable convertible preferred stock additional closing in May 2018. The Company recorded the Series B Tranche Liability in March 2018 of $0.1 million related to the Series B Preferred Stock.

The Company estimated the fair value of the Series B Tranche Liability using a Black-Scholes option pricing model using the following assumptions:

Expected term—The expected term represents the period for which the redeemable convertible preferred stock tranche liability is expected to be outstanding, which is estimated to be the remaining contractual term.

Expected volatility—The volatility data was estimated based on a study of publicly traded industry peer companies, as there is no trading history for the Company's redeemable convertible preferred stock. For purposes of identifying these comparable peer companies, the Company considered the industry, stage of development, size and financial leverage. The Company has measured historical volatility over a period equivalent to the expected term and believes that historical volatility provides a reasonable estimate of future expected volatility.

Expected dividends—The Black-Scholes valuation model calls for a single expected dividend yield as an input. The Company currently has no history or expectation of paying cash dividends on its redeemable convertible preferred stock.

Risk-free interest rate—The risk-free interest rate is based on the yield available on U.S. Treasury zero-coupon issues similar in duration to the expected term of the redeemable convertible preferred stock tranche liability and put option asset.

The Company used the following assumptions: a term of 0.08 years, a risk-free rate of 1.63%, a volatility of 36.4%, and a dividend yield of 0.0%.

In May 2018, the Company completed the closing of the Series B Preferred Stock second tranche and issued 4,430,162 shares of Series B Preferred Stock for net cash proceeds of $48.0 million. At this time the Series B Tranche Liability was remeasured at $0.7 million, determined using a probability-weighted expected return method (PWERM). The PWERM included probabilities of three scenarios including an IPO occurring in June 2018, staying private, and bankruptcy. The scenarios were weighted based on the Company's estimate of each event occurring in deriving the estimated fair value. Upon the closing of the Series B Preferred Stock second tranche, the Series B Tranche Liability of $0.7 million was reclassified to Series B Preferred Stock.

Note 9. Stockholders' equity and stock-based compensation

Common stock

The Company has reserved shares of common stock for issuance as follows:

	December 31,		
	2018	**2017**	**2016**
Redeemable convertible preferred stock outstanding, as converted	—	15,376,164	3,640,055
Options issued and outstanding	1,329,762	846,166	30,068
Options available for future grants	747,057	670,994	643,922
ESPP shares available for future grants	130,166	—	—
	2,206,985	16,893,324	4,314,045

Stock plans

Equity Incentive Plan

2016 Equity Incentive Plan

In April 2016, the Company established its 2016 Equity Incentive Plan, or the 2016 Plan, which provides for the granting of equity awards to employees and consultants of the Company. Awards granted under the 2016 Plan may be either incentive stock options, or ISOs, nonqualified stock options, or NSOs or restricted stock awards. ISOs may be granted only to Company employees (including officers and directors who are also employees). NSOs may be granted to Company employees and consultants. The exercise price of an ISO and NSO shall not be less than 100% of the estimated fair value of the shares on the date of grant, as determined by the board of directors. The exercise price of an ISO granted to an employee who at the time of grant is a 10% stockholder shall not be less than 110% of the estimated fair value of the shares on the date of grant, as determined by the board of directors. To date, ISOs and NSOs have a term of ten years and generally vest over a four-year period with annual cliff vesting and the balance monthly over 36 months. Upon completion of the Company's IPO, the remaining shares available for issuance under the 2016 Plan were retired.

Amended and Restated 2018 Stock Option and Incentive Plan

In May 2018, the Company's board of directors and stockholders approved the Amended and Restated 2018 Stock Option and Incentive Plan, or the 2018 Plan, to replace the 2016 Plan, which became effective upon the IPO. The 2018 Plan is administered by the board of directors or a committee appointed by the board of directors, which determines the types of awards to be granted, including the number of shares subject to the awards, the exercise price and the vesting schedule. Under the 2018 Plan, 598,000 shares of the Company's common stock have been initially reserved for the issuance of stock options, restricted stock units and other awards to employees, directors and *consultants. Options granted under the 2018 Plan expire no later than 10 years from the date of grant. The exercise price of each option may not be less than 100% of the fair market value of the common stock at the date of grant. Options may be granted to stockholders possessing more than 10% of the total combined voting power of all classes of stocks of the Company at an exercise price at least 110% of the fair value of the common stock at the date of grant and the options are not exercisable after the expiration of 10 years from the date of grant. Employee stock options generally vest 25% upon one year of continued service to the Company, with the remainder in monthly increments over three additional years. Upon adoption of the 2018 Plan, no additional stock awards will be issued under the 2016 Plan. Options granted under the 2016 Plan that were outstanding on the date the 2018 plan became effective remain subject to the terms of the 2016 Plan. In December 2018, the Company's board of directors approved an increase in the number of shares reserved under the 2018 Plan by 700,000 shares. As of December 31, 2018, the Company has reserved 1,298,000 shares of common stock for issuance under the 2018 Plan, of which the 700,000 shares subject to the December 2018 increase remain subject to stockholder approval.*

Employee Stock Purchase Plan

In May 2018, the Company's board of directors and stockholders approved the 2018 Employee Stock Purchase Plan, or the 2018 ESPP, which became effective upon the IPO. The 2018 ESPP is intended to qualify as an employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986, as amended, and is administered by the Company's board of directors and the Compensation Committee of the board of directors. Under the 2018 ESPP, 143,520 shares of the Company's common stock have been initially reserved for employee purchases of the Company's common stock. The 2018 ESPP allows eligible employees to purchase shares of the Company's common stock at a discount through payroll deductions of up to 20% of their eligible compensation. At the end of each offering period, employees are able to purchase shares at 85% of the lower of the fair market value of the Company's common stock at the beginning of the offering period or at the end of each applicable purchase period. The first purchase period commenced upon the completion of the Company's IPO and ended on November 30, 2018.

The fair value of the rights granted under the 2018 ESPP was calculated using the Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31, 2018
Expected term in years	0.48
Expected volatility	70.40%
Risk-free interest rate	1.50%
Dividend yield	0%

Stock options

Activity under the Company's equity incentive plans is set forth below:

	Options Available for Grant	Options Outstanding	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands)
Outstanding—December 31, 2017	670,994	846,166	$ 0.59	9.97	$ 4,383
Options granted	(399,074)	399,074	5.03		
Options cancelled	321,916	(321,916)	0.59		
Options retired	(593,836)	—	—		
Additional authorized	1,298,000	—	—		
Options granted	(696,364)	696,364	15.45		
Options exercised	—	(184,871)	1.48		
Exercised options repurchased	40,366	—	0.33		
Options canceled	105,055	(105,055)	13.67		
Outstanding—December 31, 2018	747,057	1,329,762	$ 8.55	9.40	$ 6,928
Options exercisable – December 31, 2018		161,208	$ 1.34	8.96	$ 2,002
Options vested and expected to vest – December 31, 2018		1,329,762	$ 8.55	9.40	$ 6,928

Aggregate intrinsic value represents the difference between the Company's estimated fair value of its common stock and the exercise price of outstanding in–the–money options. The total intrinsic value of options exercised was $0.9 million and $3.1 million for the years ended December 31, 2018 and 2017, respectively.

The total fair value of shares vested during the years ended December 31, 2018 and 2017 was $2.5 million and $1.1 million, respectively.

Stock options valuation

Prior to the completion of the Company's IPO, the fair value of the Company's shares of common stock underlying its stock options had historically been determined by the Company's board of directors. Because there had been no public market for the Company's common stock prior to June 2018, the Company's board of directors had determined fair value of the common stock at the time of grant of the option by considering a number of objective and subjective factors including important developments in the Company's operations, valuations performed by an independent third party, sales of redeemable convertible preferred stock, actual operating results and financial performance, the conditions in the biotechnology industry and the economy in general, the stock price performance and volatility of comparable public companies, and the lack of liquidity of the Company's common stock, among other factors. For stock options granted after the completion of the IPO, the

Company determines the fair value of each share of underlying common stock based on the closing price of the Company's common stock as reported on the date of grant.

The determination of the fair value of stock-based payment awards on the date of grant is affected by the stock price, as well as assumptions regarding a number of complex and subjective variables. These variables include expected stock price volatility over the term of the awards, actual and projected employee/consultant stock option exercise behaviors, risk-free interest rates, and expected dividends. Estimating the fair value of equity-settled awards as of the grant date using valuation models, such as the Black-Scholes option pricing model, is affected by assumptions regarding a number of complex variables. These inputs include:

Expected term — The expected term represents the period that the stock-based awards are expected to be outstanding. Since the Company does not have a long trading history for its common stock, the expected term is estimated based on the average expected term for comparable publicly traded biopharmaceutical companies. The comparable companies were chosen based on their similar size, stage in the life cycle or area of specialty. For non-employees, the term is the remaining contractual term of the option.

Expected volatility—Since the Company does not have a long trading history for its common stock, the expected volatility is estimated based on the average volatility for comparable publicly traded biopharmaceutical companies over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, stage in the life cycle or area of specialty.

Risk-free interest rate—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of option.

Expected dividend—The Company has never paid dividends on its common stock and has no plans to pay dividends on its common stock. Therefore, the Company used an expected dividend yield of zero.

Employee stock options valuation

The fair value of employee and non-employee director stock option awards was estimated at the date of grant using a Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31,		
	2018	**2017**	**2016**
Expected term in years	6.08	5.83	6.08
Expected volatility	71.99%	68.40%	76.23%
Risk-free interest rate	2.87%	2.27%	1.34%
Dividend yield	0%	0%	0%
Weighted average fair value of share-based awards granted	$ 8.46	$ 4.79	$ 0.11

Stock options granted to non-employees

Stock-based compensation related to stock options granted to non-employees is recognized as the stock options are earned. The fair value of the stock options granted to non-employees was calculated at each reporting date using the Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31,		
	2018	**2017**	**2016**
Expected term in years	9.20	9.66	10.00
Expected volatility	73.87%	80.08%	79.62%
Risk-free interest rate	2.66%	2.41%	1.57%
Dividend yield	0%	0%	0%

During the years ended December 31, 2018, 2017 and 2016, the Company granted 35,880, 569,252, and 46,148 shares, respectively, to non-employee consultants. The Company recognized stock-based compensation expense for non-employee awards during the years ended December 31, 2018, 2017 and 2016 of $1.7 million, $ 0.7 million and $ 0.1 million, respectively.

Accrued repurchase liability for common stock early exercises

Stock awards granted pursuant to the 2016 Plan permitted option holders to elect to exercise unvested options in exchange for unvested common stock. Awards granted under the 2016 Plan that are exercised prior to vesting will continue to vest according to the respective award agreement, and such unvested shares are subject to repurchase by the Company at the optionee's original exercise price or fair market value in the event the optionee's service with the Company voluntarily or involuntarily terminates.

As of December 31, 2018, and 2017, 896,034 and 1,219,389 shares, respectively, remained subject to a repurchase right by the Company, with a related liability included in accrued expenses and other liabilities in the balance sheet of $386,000 and $316,000, respectively.

Restricted stock

In December 2017, the Company issued 390,546 shares of common stock for no consideration to the founders pursuant to the Series Seed Preferred Stock Purchase Agreement and license agreement in connection with certain anti-dilution rights held by these parties. If the shares issued under the license agreement represent less than 1% of the shares issued and outstanding common stock on an as-converted basis, the Company will issue additional common stock to the founders and Stanford University. The Company has the right to repurchase the common stock issued to the founders for these purposes at the fair value per share on the date of repurchase; this repurchase right lapses as the shares vest. The shares cliff vest 25% after one year and vest monthly thereafter over 36 months. As of December 31, 2018, and 2017, 268,504 and 390,546 shares remained subject to repurchase, respectively.

The Company recognizes stock-based compensation expense upon the approval of these awards by the board of directors in September 2017 as vesting provisions are not considered substantive due to the fair value repurchase right. Stock-based compensation expense related to the restricted stock is recognized based on the fair value of the stock on the approval date using the Black-Scholes pricing model. During the years ended December 31, 2018, 2017 and 2016, the Company recognized expense related to these awards of zero, $0.2 million and zero, respectively.

Stock-based compensation expense

Total stock-based compensation expense related to all the Company's stock-based awards was recorded on the statements of operations as follows (in thousands):

	Year Ended December 31,		
	2018	**2017**	**2016**
Research and development	$ 1,325	$ 519	$ 103
General and administrative	1,201	629	4
Total stock-based compensation expense	$ 2,526	$ 1,148	$ 107

	Year Ended December 31,		
	2018	**2017**	**2016**
Stock option expense	$ 2,404	$ 1,148	$ 107
Employee Stock Plan	122	—	—
Total stock-based compensation expense	$ 2,526	$ 1,148	$ 107

As of December 31, 2018, there was $10.8 million of total unrecognized compensation cost related to unvested stock-based compensation arrangements under the 2016 and 2018 Plans. The unrecognized stock-based compensation cost is expected to be recognized over a weighted-average period of 3.3 years.

10. Income taxes

No provision for income taxes was recorded for the years ended December 31, 2018, 2017 and 2016. The Company has incurred net operating losses since its inception. The Company has not reflected any benefit of such net operating loss carryforwards in the financial statements. The Company has established a full valuation allowance against its deferred tax assets due to the uncertainty surrounding the realization of such assets.

In December 2017, the SEC staff issued SAB 118, which provides guidance for the tax effect of the Tax Cuts and Jobs Act of 2017, or the Tax Act. SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act's enactment date for companies to complete the accounting under Accounting Standards Codification Topic 740, Income Taxes, or ASC 740. In accordance with SAB 118, the Company must reflect the income tax effects of those aspects of the Tax Act for which the accounting under ASC 740 is complete. To the extent that the Company's accounting for certain income tax effects of the Tax Act is incomplete, but it is able to determine a reasonable estimate, the Company must record a provisional estimate in its financial statements. If the Company cannot determine a provisional estimate to be included in its financial statements, it should continue to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act. The $1.6 million decrease in deferred tax assets and corresponding adjustment to the valuation allowance represent the Company's reasonable estimates based on the corporate tax rate reduction to 21% from 35% for tax years beginning after December 31, 2017 and are provisional amounts within the meaning of SAB 118. Also, it is expected that the U.S. Treasury will issue regulations and other guidance on the application of certain provisions of the Tax Act. In subsequent periods, but within the measurement period, the Company will analyze that guidance and other necessary information to refine its estimates and complete its accounting for the tax effects of the Tax Act as necessary.

The effective tax rate differs from the federal statutory rate as follows:

	Year Ended December 31,		
	2018	2017	2016
Federal statutory income tax rate	21.0%	34.0%	34.0%
State taxes	0.0%	0.0%	0.0%
Federal rate change impact due to Tax Act	0.0%	-13.4%	0.0%
Research and development credits	3.2%	1.5%	2.1%
Stock-based compensation	-1.5%	-1.5%	0.0%
Change in fair value of convertible note	-1.6%	0.2%	-2.1%
Other	-1.3%	-0.7%	-1.3%
Change in valuation allowance	-19.8%	-20.1%	-32.7%
	0.00%	0.00%	0.00%

	Year Ended December 31,	
	2018	2017
Deferred tax assets:		
Net operating loss carryforward	$ 13,046	$ 3,596
Research and development credits	1,680	355
Stock-based compensation	—	208
Other	37	32
Deferred tax assets before valuation allowance	14,763	4,191
Less: valuation allowance	(14,566)	(4,191)
Net deferred income tax assets	197	—
Deferred tax liabilities:		
Stock-based compensation	(197)	—
Net deferred tax assets (liabilities)	$ —	$ —

As of December 31, 2018, the Company has net operating loss carryforwards of approximately $46.3 million and $47.4 million, respectively, available to reduce future taxable income, if any, for federal and California state income tax purposes. The net operating losses will begin to expire in 2037.

As of December 31, 2018, the Company has federal research and development credit carryforwards of $0.5 million, which will expire beginning in 2037 if not utilized. As of December 31, 2018, the Company has California research and development credit carryforwards of $0.3 million. The California research and development credits have no expiration date. As of December 31, 2018, the Company had federal orphan drug credits of $1.5 million available to offset future taxable income.

The Company has established a full valuation allowance against its deferred tax assets due to the uncertainty surrounding realization of such assets. The net increase in the valuation allowance for the years ended December 31, 2018 and 2017 was $10.4 million and $3.2 million, respectively. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred income tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred income tax liabilities, and projected future taxable income in making this assessment. Based on these factors, management has provided a full valuation allowance for its deferred tax assets.

Federal and state laws impose substantial restrictions on the utilization of net operating loss and tax credit carryforwards in the event of an ownership change for tax purchases, as defined in Section 382 of the Internal Revenue Code. As a result of such ownership changes, the Company's ability to realize the potential future benefit of tax losses and tax credits that existed at the time of the ownership change may be significantly reduced.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Balance at beginning of year	$ 166	$ 31	$ —
Additions based on tax positions related to current year	359	135	31
Balance at end of year	$ 525	$ 166	$ 31

The Company's unrecognized gross tax benefits would not reduce the annual effective tax rate if recognized because it has recorded a full valuation allowance on its deferred tax assets. The Company does not foresee any material changes to the gross unrecognized tax benefit within the next twelve months. The Company's policy is to recognize interest and/or penalties related to income tax matters in income tax expense.

The Company files income tax returns in the United States and California. The Company currently has no federal or state tax examinations in progress. All years are open for examination by federal and state authorities.

11. Net loss per share

The Company's potentially dilutive shares, which include outstanding common stock options, unvested common shares subject to repurchase, convertible preferred stock and convertible preferred stock warrants, have not been included in the computation of diluted net loss per common share for all periods presented, as the results would be anti-dilutive. Such potentially dilutive shares are excluded when the effect would be to reduce net loss per share attributable to common stockholders.

	December 31,		
	2018	2017	2016
Numerator:			
Net loss attributable to common stockholders	$ (39,812)	$ (11,941)	$ (2,542)
Denominator:			
Weighted average common shares outstanding	22,037,363	4,324,525	3,690,709
Weighted average unvested common shares subject to repurchase	(670,368)	(727,852)	(1,091,068)
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	21,366,995	3,596,673	2,599,641
Net loss per share attributable to common stockholders	$ (1.86)	$ (3.32)	$ (0.98)

The following shares of potentially dilutive securities have been excluded from the diluted net loss per share computations for the years ended December 31, 2018, 2017 and 2016 because their inclusion would be anti-dilutive:

	December 31,		
	2018	2017	2016
Redeemable convertible preferred stock on an as-converted basis	—	15,376,164	3,640,055
ESPP shares	5,115	—	—
Options to purchase common stock	1,329,762	846,163	30,048
Common stock subject to vesting or repurchase	627,530	828,843	1,012,707
	1,962,407	17,051,170	4,682,810

12. Stanford license agreement

In April 2016, the Company entered into a license agreement with the Board of Trustees of the Leland Stanford Junior University, or Stanford University, relating to the Company's drug discovery and development initiatives. Under this agreement, the Company has been granted certain worldwide exclusive licenses to use the licensed compounds. The Company paid an upfront license payment of $25,000 in April 2016, which was recorded as general and administrative expense and also issued 56,809 shares of common stock. The value of common share issuance was recorded, at fair value of $0.18 per share and included in the statement of operations as a general and administrative expense of $8,000 during the year ended December 31, 2016.

In March 2017, the Company paid a license fee of $10,000, which was recorded as research and development expense during the year ended December 31, 2017. The Company may also be required to make future payments of up to approximately $1.0 million to Stanford University upon achievement of specific intellectual property, clinical and regulatory milestone events, as well as pay royalties in the low single digits on future net sales, if any. In addition, the Company is obligated to pay Stanford University a percentage of non-royalty revenue received by the Company from its sublicensees, with the amount owed decreasing annually for three years based on when the applicable sublicense agreement is executed. In March 2018, the Company recorded $50,000 under the Stanford agreement in connection with the achievement of a development milestone. During the years ended December 31, 2018, 2017, and 2016, the Company recognized expense of $0.1 million, $10,000, and $25,000, respectively, in connection with this agreement.

13. Commitments and contingencies

Lease arrangements

In September 2017, the Company entered into a one-year operating lease for laboratory facilities in San Francisco, California. In November 2017, the Company entered into an operating lease for an administrative facility in San Francisco, California, which expires in November 2022. The Company has provided a security deposit of $0.2 million as collateral for the lease, which is included in other assets on the balance sheet at December 31, 2018.

Future minimum lease payments as of December 31, 2018 are as follows (in thousands):

Year	Operating Lease Commitments
2019	$ 335
2020	337
2021	347
2022	327
	$ 1,346

The Company's rent expense for the years ended December 31, 2018, 2017 and 2016 was $0.4 million, $0.1 million and $23,000, respectively. The amounts include amounts incurred pursuant to the service agreement with BridgeBio Services, Inc., an affiliate of BridgeBio Pharma LLC (see Note 6).

Rent expense is recognized on a straight-line basis over the terms of the Company's leases and accordingly, the Company recorded the difference between rent expense and amount paid under the leases as deferred rent liability within other liabilities in the balance sheets. Incentives granted under the Company's facility lease, including allowances to fund leasehold improvements, are deferred and recognized as adjustments to rent expense on a straight-line basis over the term of the lease.

Indemnification

In the ordinary course of business, the Company may provide indemnifications of varying scope and terms to vendors, lessors, business partners, board members, officers, and other parties with respect to certain matters, including, but not limited to, losses arising out of breach of such agreements, services to be provided by the Company, negligence or willful misconduct of the Company, violations of law by the Company, or from intellectual property infringement claims made by third parties. In addition, the Company has entered into indemnification agreements with directors and certain officers and employees that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers or employees. No demands have been made upon the Company to provide indemnification under such agreements, and thus, there are no claims that the Company is aware of that could have a material effect on the Company's balance sheets, statements of operations, or statements of cash flows.

Legal proceedings

From time to time, the Company may be involved in a variety of claims, lawsuits, investigations and proceedings relating to securities laws, product liability, patent infringement, contract disputes and other matters relating to various claims that arise in the normal course of business in addition to governmental and other regulatory investigations and proceedings. In addition, third parties may, from time to time, assert claims against the Company in the form of letters and other communications. Management currently believes that these ordinary course matters will not have a material adverse effect on the Company's business; however, the results of litigation and claims are inherently unpredictable. Regardless of the outcome, litigation can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources and other factors.

14. Subsequent Events

On February 27, 2019 in connection with the initiation of the Company's first Phase 3 trial, the Company recorded $0.2 million in connection with a milestone associated with the Stanford License Agreement.

On March 27, 2019 the Company entered into an amendment to the lease dated November 14, 2017. In connection with the amendment the Company will lease 10,552 rentable square feet. The amended lease is for 87 months and have $6.4 million of payments under this lease.

15. Restatement of 2018 condensed interim financial statements and related financial information (unaudited)

Subsequent to the original issuance of the Company's unaudited condensed financial statements and related financial information as of and for the three and nine months ended September 30, 2018, the Company determined that a restatement of its historical condensed quarterly financial statements as of and for the three months ended March 31, 2018, June 30, 2018 and September 30, 2018 and for the six months ended June 30, 2018 and nine months ended September 30, 2018 was required. The restatements were required to correct misstatements related to the issuance and redemption of the Company's February 2018 Convertible Promissory Notes (Note 5) and the accounting for the Company's Series Seed Preferred Stock and Series B Preferred Stock issuance and in subsequent closings (Notes 7 and 8).

The restatement is required to properly account for the (i) fair value measurement, recognition and settlement of the embedded derivative liability associated with the Convertible Promissory Notes, (ii) initial recognition and reacquisition of the beneficial conversion feature associated with the Convertible Promissory Notes, (iii) associated gain on extinguishment and amortization of debt discount of the Convertible Promissory Notes, (iv) initial recognition, classification and settlement of redeemable convertible preferred stock put option asset, (v) fair value measurement of Series B Tranche Liability, and (vi) the measurement and timing of recognition of founders shares issued to settle the anti-dilution provision clause in the Series Seed Preferred

Stock Agreement. Changes to the fair value measurement are primarily related to correction of the valuation assumptions for the Level 3 financial liabilities noted above.

Accordingly, the Company has restated its financial statements for the quarterly periods ended March 31, 2018, June 30, 2018 and September 30, 2018 to correct the identified misstatements.

The restated condensed quarterly financial statements correct the previous accounting as follows:

The following schedules reconcile the amounts as originally reported in the unaudited condensed financial statements and related information to the corresponding restated amounts.

	As of March 31, 2018			As of June 30, 2018			As of September 30, 2018		
	As Previously Reported	Restatement Adjustments	As Restated	As Previously Reported	Restatement Adjustments	As Restated	As Previously Reported	Restatement Adjustments	As Restated
Assets									
Current assets:									
Cash and cash equivalents	$ 25,269	$ —	$ 25,269	$ 176,689	$ —	$176,689	$ 166,568	$ —	$166,568
Related party receivable	76	—	76	21	—	21	29	—	29
Prepaid expenses and other current assets	624	—	624	2,245	—	2,245	3,248	—	3,248
Total current assets	25,969	—	25,969	178,955	—	178,955	169,845	—	169,845
Property and equipment, net	218	—	218	219	—	219	218	—	218
Series B preferred stock put asset (1)	1,527	(1,527)	—	—	—	—	—	—	—
Other assets	1,109	—	1,109	169	—	169	163	—	163
Total assets	$ 28,823		$ 27,296	$ 179,343		$179,343	$ 170,226		$170,226
Liabilities, Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)									
Current liabilities:									
Accounts payable	$ 1,667	—	$ 1,667	$ 2,134	—	$ 2,134	$ 2,417	—	$ 2,417
Related party payable	327	—	327	531	—	531	206	—	206
Accrued expenses and other current liabilities	2,744	—	2,744	2,631	—	2,631	3,427	—	3,427
Total current liabilities	4,738	—	4,738	5,296	—	5,296	6,050	—	6,050
Series B preferred stock tranche liability (1)	2,028	(1,964)	64	—	—	—	—	—	—
Redeemable convertible preferred stock warrant liability	841	—	841	—	—	—	—	—	—
Other liabilities	439	—	439	403	—	403	357	—	357
Total liabilities	8,046		6,082	5,699		5,699	6,407		6,407
Commitments and contingencies									
Redeemable convertible preferred stock, $0.001 par value (1)	46,603	592	47,195	—	—	—	—	—	—
Stockholders' equity (deficit):									
Preferred stock, $0.001 par value	—	—	—	—	—	—	—	—	—
Common stock, $0.001 par value	4	—	4	37	—	37	37	—	37
Additional paid-in capital (2)	4,281	3,155	7,436	214,339	4,070	218,409	214,690	4,506	219,196
Accumulated deficit (2)	(30,111)	(3,310)	(33,421)	(40,732)	(4,070)	(44,802)	(50,908)	(4,506)	(55,414)
Total stockholders' equity (deficit)	(25,826)		(25,981)	173,644		173,644	163,819		163,819
Total liabilities, redeemable convertible preferred stock and stockholders' equity (deficit)	$ 28,823		$ 27,296	$ 179,343		$179,343	$ 170,226		$170,226

The correcting errors impacting the balance sheets as of March 31, 2018, June 30, 2018 and September 30, 2018 are summarized as follows:

1) Entries primarily consists of adjustments to eliminate the Series B Preferred Stock put option asset originally recognized as separate instrument at the time the Series B Preferred stock was issued, to recognize the put option asset and liability as a combined unit of accounting, and to adjust the combined instrument to its fair value at period end.
2) Entries primarily consist of adjustments to recognize the net impact of the following:
    a. eliminating the loss on extinguishment of debt upon conversion of the Convertible Promissory Notes;

b. adjusting stock-based compensation recognized in 2018 for founders' shares granted in 2017;
c. recognizing the deemed dividend related to the conversion feature embedded in the Convertible Promissory Notes upon issuance of such notes; and
d. recognizing the gain on extinguishment of the Convertible Notes with stockholders, which included measurement and recognition of the reacquisition beneficial conversion feature.

	Three months ended March 31, 2018			Six months ended June 30, 2018			Nine months ended September 30, 2018		
	As Previously Reported	Restatement Adjustments	As Restated	As Previously Reported	Restatement Adjustments	As Restated	As Previously Reported	Restatement Adjustments	As Restated
Operating expenses:									
Research and development (1)	$ 6,034	$ (382)	$ 5,652	$ 13,431	$ (1,584)	$ 11,847	$ 21,362	$ (1,146)	$ 20,216
General and administrative (1)	2,143	202	2,345	4,037	202	4,239	6,656	202	6,858
Total operating expenses	8,177	(180)	7,997	17,468	(1,382)	16,086	28,018	(944)	27,074
Loss from operations	(8,177)	180	(7,997)	(17,468)	1,382	(16,086)	(28,018)	944	(27,074)
Other income (expense), net (2)	(725)	(154)	(879)	(2,055)	(2,116)	(4,171)	(1,681)	(2,116)	(3,797)
Loss on extinguishment of debt (3)	(6,677)	6,677	—	(6,677)	6,677	—	(6,677)	6,677	—
Net and Comprehensive loss	(15,579)	6,703	(8,876)	(26,200)	5,943	(20,257)	(36,376)	5,505	(30,871)
Deemed dividend related to redemption feature embedded in Convertible Promissory Notes payable to stockholders (4)	—	(6,523)	(6,523)	—	(6,523)	(6,523)	—	(6,523)	(6,523)
Gain on extinguishment of Convertible Promissory Notes payable to stockholders (5)	—	7,436	7,436	—	7,436	7,436	—	7,436	7,436
Net loss attributable to common stockholders	$ (15,579)	$ 7,616	$ (7,963)	$ (26,200)	$ 6,856	$ (19,344)	$ (36,376)	$ 6,418	$ (29,958)
Net loss per share attributable to common stockholders	$ (3.89)		$ (1.81)	$ (4.41)		$ (3.06)	$ (2.28)		$ (1.83)
Weighted-average shares used in computing net loss per share, basic and diluted	4,006,085		4,392,435	5,938,281		6,328,827	15,976,228		16,361,349

	Three months ended March 31, 2018			Three months ended June 30, 2018			Three months ended September 30, 2018		
	As Previously Reported	Restatement Adjustments	As Restated	As Previously Reported	Restatement Adjustments	As Restated	As Previously Reported	Restatement Adjustments	As Restated
Operating expenses:									
Research and development (1)	$ 6,034	$ (382)	$ 5,652	$ 7,397	$ (1,202)	$ 6,195	$ 7,931	$ 438	$ 8,369
General and administrative (1)	2,143	202	2,345	1,894	—	1,894	2,619	—	2,619
Total operating expenses	8,177	(180)	7,997	9,291	(1,202)	8,089	10,550	438	10,988
Loss from operations	(8,177)	180	(7,997)	(9,291)	1,202	(8,089)	(10,550)	(438)	(10,988)
Other income (expense), net (2)	(725)	(154)	(879)	(1,330)	(1,962)	(3,292)	374	—	374
Loss on extinguishment of debt (3)	(6,677)	6,677	—	—	—	—	—	—	—
Net and Comprehensive loss	(15,579)	6,703	(8,876)	(10,621)	(760)	(11,381)	(10,176)	(438)	(10,614)
Deemed dividend related to redemption feature embedded in Convertible Promissory Notes payable to stockholders (4)	—	(6,523)	(6,523)	—	—	—	—	—	—
Gain on extinguishment of Convertible Promissory Notes payable to stockholders (5)	—	7,436	7,436	—	—	—	—	—	—
Net loss attributable to common stockholders	$ (15,579)	$ 7,616	$ (7,963)	$ (10,621)	$ (760)	$ (11,381)	$ (10,176)	$ (438)	$ (10,614)
Net loss per share attributable to common stockholders	$ (3.89)		$ (1.81)	$ (1.38)		$ (1.40)	$ (0.29)		$ (0.30)
Weighted-average shares used in computing net loss per share, basic and diluted	4,006,085		4,392,435	7,719,107		8,109,653	35,591,518		35,965,790

The correcting errors impacting the statements of operations and comprehensive loss are summarized as follows:

1) Entries primarily consist of adjustments to stock-based compensation for errors related to the founders' shares granted in 2017.
2) Entries to adjust the Series B Preferred Stock tranche liability to fair value.
3) Entry to eliminate the loss on extinguishment of debt upon conversion of the Convertible Promissory Notes.
4) Entry to recognize the deemed dividend related to the conversion feature embedded in the Convertible Promissory Notes upon issuance of such notes.
5) Entry to recognize the gain on extinguishment of the Convertible Promissory notes with stockholders.

	Three months ended March 31, 2018			Six months ended June 30, 2018			Nine months ended September 30, 2018		
	As Previously Reported	Restatement Adjustments	As Restated	As Previously Reported	Restatement Adjustments	As Restated	As Previously Reported	Restatement Adjustments	As Restated
Cash Flows From Operating Activities:									
Net loss (3) (5)	$ (15,579)	$ 6,703	$ (8,876)	$ (26,200)	$ 5,943	$ (20,257)	$ (36,376)	$ 5,505	$ (30,871)
Adjustments to reconcile net loss to net cash used in operating activities:									
Depreciation and amortization	10	—	10	24	—	24	40	—	40
Amortization of discount (premium) on investments	—	—	—	—	—	—	—	—	—
Stock-based compensation expense (1)	564	(176)	388	2,387	(1,380)	1,007	2,643	(942)	1,701
Accrued interest on Convertible Promissory Notes payable	48	—	48	48	—	48	48	—	48
Change in fair value of derivative liability (2)	—	(100)	(100)	—	(100)	(100)	—	(100)	(100)
Change in fair value of redeemable convertible preferred stock tranche liabilities	—	—	—	(1,334)	1,964	630	(1,334)	1,964	630
Change in fair value of redeemable convertible preferred stock warrant liability	(37)	—	(37)	2,628	—	2,628	2,628	—	2,628
Issuance of common stock in exchange for services and technology	—	—	—	—	—	—	—	—	—
Amortization of debt discount on Convertible Promissory Notes payable (6)	713	250	963	713	250	963	713	250	963
Loss on extinguishment of debt (3)	6,677	(6,677)	—	6,677	(6,677)	—	6,677	(6,677)	—
Changes in assets and liabilities:									
Related party receivable	(9)	—	(9)	46	—	46	38	—	38
Prepaid expenses and other current assets	(140)	—	(140)	(1,761)	—	(1,761)	(2,764)	—	(2,764)
Other assets	(741)	—	(741)	12	—	12	18	—	18
Accounts payable	1,102	—	1,102	1,157	—	1,157	1,852	—	1,852
Accrued expenses and other liabilities	1,546	—	1,546	646	—	646	2,278	—	2,278
Related party payable	(45)	—	(45)	159	—	159	(166)	—	(166)
Net cash used in operating activities	(5,891)		(5,891)	(14,798)		(14,798)	(23,705)		(23,705)
Cash Flows From Investing Activities:									
Purchases of property and equipment	(114)	—	(114)	(129)	—	(129)	(144)	—	(144)
Net cash used in investing activities	(114)		(114)	(129)		(129)	(144)		(144)
Cash Flows From Financing Activities:									
Proceeds from issuance of redeemable convertible preferred stock, net of issuance costs	15,875	—	15,875	63,875	—	63,875	63,875	—	63,875
Proceeds from issuance of convertible promissory notes	10,000	—	10,000	10,000	—	10,000	10,000	—	10,000
Proceeds from issuance of common stock under employee stock plan	—	—	—	—	—	—	—	—	—
Payment of deferred offering costs	(187)		(187)	—		—	—	—	—
Proceeds from issuance of common stock upon exercise of stock options and restricted stock	89	—	89	89	—	89	75	—	75
Proceeds from issuance of initial public offering, net of issuance costs	—	—	—	112,155	—	112,155	110,970	—	110,970
Net cash provided by financing activities	25,777		25,777	186,119		186,119	184,920		184,920
Net increase in cash and cash equivalents	19,772		19,772	171,192		171,192	161,071		161,071
Cash and cash equivalents, beginning of period	5,497		5,497	5,497		5,497	5,497		5,497
Cash and cash equivalents, end of period	$ 25,269		$ 25,269	$ 176,689		$ 176,689	$ 166,568		$ 166,568
Supplemental disclosure of non-cash financing activities:									
Settlement of fair value of Series B preferred stock put option asset (5)	$ 1,527	$ (1,527)	$ —	$ 1,527	$ (1,527)	$ —	$ 1,527	$ (1,527)	$ —
Settlement of fair value of Series B stock tranche liability	—	—	—	694	—	694	694	—	694
Offering costs in accounts payable and accrued liabilities	—	—	—	1,187	—	1,187	—	—	—
Vesting of restricted stock and early exercised options	18	—	18	34	—	34	135	—	135
Conversion of Convertible Promissory Notes payable and accrued interest into Series B preferred stock (4)	10,048	4,306	14,354	10,048	4,306	14,354	10,048	4,306	14,354
Conversion of redeemable convertible preferred stock to common stock at closing of initial public offering	—	—	—	97,276	(1,389)	95,887	97,276	(1,389)	95,887
Reclassification of redeemable convertible preferred stock warrant liability to common stock at closing of initial public offering	—	—	—	3,506	—	3,506	3,506	—	3,506

The correcting errors impacting the statements of cash flows are summarized as follows:

1) Entries primarily consist of adjustments to stock-based compensation for errors related to the founders' shares granted in 2017.
2) Entries to adjust the Series B Preferred Stock tranche liability to fair value.
3) Entry to eliminate the loss on extinguishment of debt upon conversion of the Convertible Promissory Notes.

4) Entry to incorporate the recognition of the reacquisition beneficial conversion feature for the conversion of convertible Promissory Notes payable and accrued interest to Series B Preferred Stock.
5) Entries primarily consists of adjustments to eliminate the Series B Preferred Stock put option asset originally recognized as separate instrument at the time the Series B Preferred stock was issued, to recognize the put option asset and liability as a combined unit of accounting, and to adjust the combined instrument to its fair value at period end.
6) Entry to recognize additional debt discount amortization due to increased value of beneficial conversion feature accounted for as a discount on debt.

16. Supplementary Financial Data (unaudited)

The following table presents the selected quarterly financial data for the years ended December 31, 2018 and 2017:

	Statements of Operations			
	Quarter Ended			
	March 31	June 30	September 30	December 31
	(In thousands, except per share amounts)			
2018				
Loss from operations	$ (7,997)	$ (8,089)	$ (10,988)	$ (10,705)
Net loss attributable to common stockholders	$ (7,963)	$ (11,381)	$ (10,614)	$ (9,854)
Net loss per share of common stock attributable to common stockholders, basic and diluted	$ (1.81)	$ (1.40)	$ (0.30)	$ (0.27)
2017				
Loss from operations	$ (2,417)	$ (1,715)	$ (2,773)	$ (5,111)
Net loss	$ (2,342)	$ (1,715)	$ (2,773)	$ (5,111)
Net loss per share of common stock attributable to common stockholders, basic and diluted	$ (0.72)	$ (0.49)	$ (0.74)	$ (1.32)

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Chief Executive Officer

Jonathan Fox, M.D., Ph.D., FACC
President and Chief Medical Officer

Christine Siu
Chief Financial Officer

Uma Sinha, Ph.D.
Chief Scientific Officer

Cameron Turtle, D.Phil.
Chief Business Officer

Board of Directors

Eric Aguiar, M.D.
Partner
Aisling Capital

Neil Kumar, Ph.D.
Chief Executive Officer
Eidos Therapeutics

William Lis
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