UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

FOR ANNUAL AND TRANSITION REPORTS PURSUANT TO SECTIONS 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

(Mark One)

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

For the fiscal year ended December 31, 2019

OR

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

For the transition period from _____ to _____

001-33357
(Commission file number)

PROTALIX BIOTHERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**65-0643773**
State or other jurisdiction of incorporation or organization	**(I.R.S. Employer Identification No.)**
2 Snunit Street Science Park POB 455 Carmiel, Israel	
(Address of principal executive offices)	**2161401 (Zip Code)**

972-4-988-9488
Registrant's telephone number, including area code

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, $0.001 par value	PLX	NYSE American

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 Section 15(d) of the Act. Yes ☐ No ☒

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

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

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

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

Emerging growth company ☐

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

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

The aggregate market value of the voting common stock held by non-affiliates of the Registrant as of June 30, 2019 was approximately $68.1 million, based on the closing price for shares of the Registrant's common stock reported by the NYSE American for such date.

On March 1, 2020, approximately 14,838,213 shares of the Registrant's common stock, par value $0.001 per share, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's proxy statement related to its 2020 Annual Stockholders' Meeting to be filed subsequently are incorporated by reference into Part III of this Annual Report on Form 10-K. Except as expressly incorporated by reference, the registrant's proxy statement shall not be deemed to be part of this report.

FORM 10-K
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PART I

Except where the context otherwise requires, the terms, "we," "us," "our" or "the Company," refer to the business of Protalix BioTherapeutics, Inc. and its consolidated subsidiaries, and "Protalix" or "Protalix Ltd." refers to the business of Protalix Ltd., our wholly-owned subsidiary and sole operating unit.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

The statements set forth under the captions "Business," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Risk Factors," and other statements included elsewhere in this Annual Report on Form 10-K, which are not historical, constitute "forward-looking statements" within the meanings of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, including statements regarding expectations, beliefs, intentions or strategies for the future. When used in this report, the terms "anticipate," "believe," "estimate," "expect," "can," "continue," "could," "intend," "may," "plan," "potential," "predict," "project," "should," "will," "would" and other words or phrases of similar import, as they relate to our company or our subsidiaries or our management, are intended to identify forward-looking statements. We intend that all forward-looking statements be subject to the safe-harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are only predictions and reflect our views as of the date they are made with respect to future events and financial performance, and we undertake no obligation to update or revise, nor do we have a policy of updating or revising, any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events, except as may be required under applicable law. Forward-looking statements are subject to many risks and uncertainties that could cause our actual results to differ materially from any future results expressed or implied by the forward-looking statements.

Examples of the risks and uncertainties include, but are not limited to, the following:

- the risk that the U.S. Food and Drug Administration, or the FDA, will not accept an application for Accelerated Approval of PRX-102 with the data generated to date or will request additional data or other conditions of the submission, or that the FDA, the European Medicines Agency, or the EMA, or other foreign regulatory authorities may not accept or approve a marketing application we file for any of our other product candidates;

- risks relating to our evaluation and pursuit of strategic alternatives;

- risks related to our ability to identify and obtain financing on attractive terms or at all within the time period required to regain compliance with the continued listing standards of the NYSE American LLC, or the NYSE American, or to otherwise maintain compliance with its continued listing standards;

- risks related to our ability to continue as a going concern absent a strategic transaction, refinancing or restructuring;

- failure or delay in the commencement or completion of our preclinical studies and clinical trials, which may be caused by several factors, including: slower than expected rates of patient recruitment; unforeseen safety issues; determination of dosing issues; lack of effectiveness during clinical trials; inability or unwillingness of medical investigators and institutional review boards to follow our clinical protocols; inability to monitor patients adequately during or after treatment; and or lack of sufficient funding to finance our clinical trials;

- the risk that the results of our clinical trials will not support the applicable claims of safety or efficacy and that our product candidates will not have the desired effects or will have undesirable side effects or other unexpected characteristics;

- risks relating to our ability to manage our relationship with our collaborators, distributors or partners;

- risks relating to our ability to make required payments under our outstanding convertible notes or any other indebtedness;

- risks relating to the compliance by Fundação Oswaldo Cruz, or Fiocruz, an arm of the Brazilian Ministry of Health, or the Brazilian MoH, with its purchase obligations under our supply and technology transfer agreement, which may have a material adverse effect on us and may also result in the termination of such agreement;

- our dependence on performance by third-party providers of services and supplies;

- the impact of development of competing therapies and/or technologies by other companies;

- risks related to our supply of drug product to Pfizer Inc.;

- risks related to our expectations with respect to the potential commercial value of our product and product candidates;

- potential product liability risks, and risks of securing adequate levels of related insurance coverage;

- the possibility of infringing a third-party's patents or other intellectual property rights and the uncertainty of obtaining patents covering our products and processes and successfully enforcing our intellectual property rights against third-parties;

- risks relating to changes in healthcare laws, rules and regulations in the United States or elsewhere; and

- the possible disruption of our operations due to terrorist activities and armed conflict, including as a result of the disruption of the operations of regulatory authorities, our subsidiaries, our manufacturing facilities and our customers, suppliers, distributors, collaborative partners, licensees and clinical trial sites.

Given these uncertainties, you should not place undue reliance on these forward-looking statements. Companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in advanced or late-stage clinical trials, even after obtaining promising earlier trial results or preliminary findings for such clinical trials. Even if favorable testing data is generated from clinical trials of a drug product, the FDA or foreign regulatory authorities may not accept or approve a marketing application filed by a pharmaceutical or biotechnology company for the drug product.

These and other risks and uncertainties are detailed under the heading "Risk Factors" in this Annual Report and are described from time to time in the reports we file with the U.S. Securities and Exchange Commission, or the Commission.

Item 1. Business

We are a biopharmaceutical company focused on the development, production and commercialization of recombinant therapeutic proteins produced by our proprietary ProCellEx® plant cell-based protein expression system. We are the first and only company to gain FDA approval of a protein produced through plant cell-based expression in suspension. Our unique expression system represents a new method for developing recombinant proteins in an industrial-scale manner.

Our strategic focus is to develop tailored complex recombinant therapeutic proteins primarily produced by our proprietary plant cell-based system ProCellEx while genetically engineering and/or chemically modifying the proteins pre and post-production. We intend such engineering and modifications to provide added clinical benefits by improving the biologic characteristics (e.g., glycosylation, half-life, immunogenicity) of the therapeutic protein.

Our proprietary ProCellEx platform is being used to manufacture our approved and marketed product, Elelyso®, for the treatment of Gaucher disease. We are also developing, via ProCellEx, a pipeline of products and are in advanced clinical phase development with pegunigalsidase alfa, or PRX-102, for the treatment of Fabry disease; tulinercept, or OPRX-106, for the treatment of Inflammatory Bowel Diseases; product alidornase alfa, or PRX-110, for the treatment of multiple indications; and Uricase, or PRX-115, for the treatment of Gout. We also have a number of other product candidates in early and preclinical development.

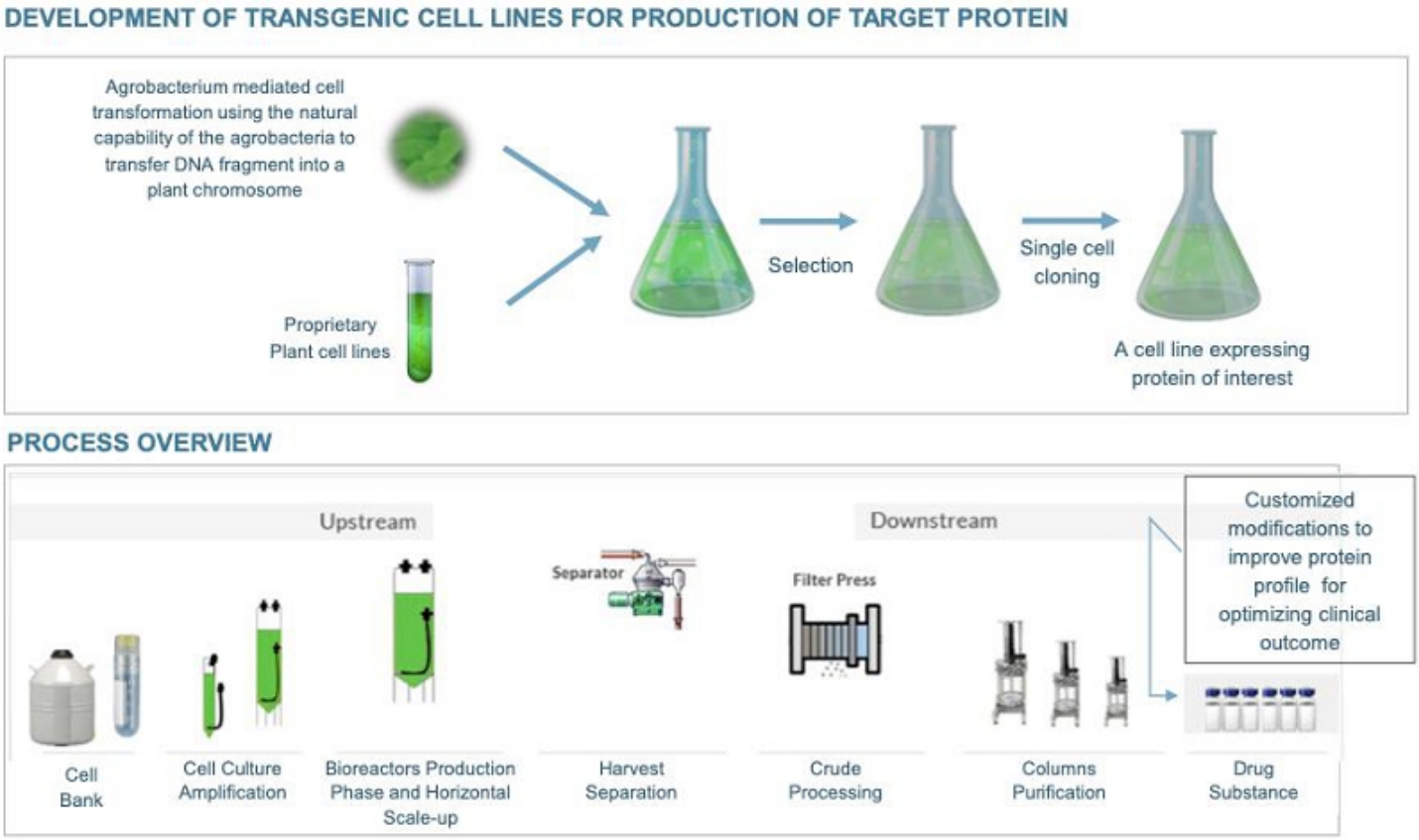
Our senior management team is expressly qualified to develop and market our ProCellEx platform product candidates, and is dedicated to building a world-class company. We strengthened our senior management team in 2019 with the key appointments of Dror Bashan, as President and Chief Executive Officer, and Eyal Rubin, as Senior Vice President and Chief Financial Officer. Zeev Bronfeld was elected to serve as the Chairman of our Board of Directors, and the Board of Directors was further enhanced with the appointments of Pol F. Boudes, M.D. and Gwen A. Melincoff. Dr. Boudes and Ms. Melincoff each brings significant expertise and insights that we believe will help guide and grow our company.

Our ProCellEx Platform

ProCellEx is our proprietary platform used to produce and manufacture recombinant proteins through plant cell-based expressions in suspension. ProCellEx consists of a comprehensive set of proprietary technologies and capabilities, including the use of advanced genetic engineering and plant cell culture technology, enabling us to produce complex, proprietary, and biologically equivalent proteins for a variety of human diseases. Our protein expression system facilitates the creation and selection of high-expressing, genetically-stable cell lines capable of expressing recombinant proteins.

Our technology allows for many unique advantages, including: biologic optimization; an ability to handle complex protein expressions; the potential for oral delivery of proteins; flexible manufacturing with improvements through efficiencies, enhancements and/or rapid horizontal scale-ups; a simplified production process; elimination of the risk of viral contaminations from mammalian components; and intellectual property advantages.

We developed ProCellEx based on our plant cell culture technology for the development, expression and manufacturing of recombinant proteins, which are the essential foundation of modern biotechnology. We develop new, recombinant therapeutic proteins by using the natural capability of agrobacterium to transfer a DNA fragment into the plant chromosome, allowing the genome of the plant cell to code for specific proteins of interest. The agrobacterium-mediated transformed cells are then able to produce specific proteins, which are extracted and purified and can be used as therapies to treat a variety of diseases.



ProCellEx technology can be utilized to express complex therapeutic proteins belonging to different drug classes, such as enzymes, hormones, monoclonal antibodies, cytokines and vaccines. The entire protein expression process, from initial nucleotide cloning to large-scale production of the protein product, occurs under cGMP-compliant, controlled processes. Our plant cell culture technology uses cells, such as carrot and tobacco (BY-2) cells, which undergo advanced genetic engineering and/or chemical modifications, and are grown on an industrial scale in a disposable, flexible bioreactor system. Our system does not involve mammalian or animal-derived components or transgenic field-grown or whole plants at any point in the production process.

Cell growth, from initiating scale-up steps from a cell-bank through large-scale production takes place in a clean-room environment in flexible, sterile, custom-designed polyethylene bioreactors, and does not require the use of large stainless-steel bioreactors commonly used in mammalian-based systems for recombinant protein production. The ProCellEx reactors are easy to use and maintain, allowing for rapid horizontal scale-up and do not involve the risk of mammalian viral contamination. Our bioreactors are well-suited for plant cell growth using a simple, inexpensive, chemically defined growth medium. The reactors, which are custom-designed and optimized for plant cell cultures, require low initial capital investment and are rapidly scalable at a low cost.

Business Highlights

We have one marketed and commercialized product, Elelyso® for the treatment of Gaucher disease, and a pipeline of assets in clinical development for Fabry disease, Inflammatory Bowel Disease, Gout and additional indications. All of our marketed and clinical assets were developed in-house using our ProCellEx system and technology.

Elelyso®

Elelyso for the treatment of Gaucher Disease is currently approved and marketed in 23 countries including the United States, Australia, Canada, Israel, Brazil, Russia and Turkey. In June 2012, the European Committee for Medicinal Products for Human Use (CHMP) issued a positive opinion regarding the benefit of Elelyso but did not immediately grant marketing authorization because of the ten-year market exclusivity granted to Vpriv® (Takeda Shire) in August 2010 for the same condition, which was later extended for an additional two years. Elelyso is marketed globally, excluding Brazil, through an exclusive licensing agreement with Pfizer. We maintain the distribution rights to Elelyso in Brazil, where it is marketed as BioManguinhos alfataliglicerase, through the Supply and Technology Transfer Agreement we entered into on June 18, 2013, with Fiocruz, an arm of the Brazilian MoH, or the Brazil Agreement. In 2019, we generated $9.1 million from sales of BioManguinhos alfataliglicerase to the Brazilian MoH.

Pegunigalsidase alfa (PRX-102)

Pegunigalsidase alfa is our late-stage clinical asset in development for the treatment of Fabry disease. It is currently the subject of three ongoing phase III clinical trials (*BALANCE*, *BRIDGE*, and *BRIGHT*). All three trials are fully-enrolled. Our phase I/II clinical trial of PRX-102, which was completed in 2015, was a naïve study which demonstrated a significant reduction of Gb_3 inclusion in kidney biopsies from adult Fabry patients. Patients from the phase I/II clinical trial have been enrolled into a long-term extension study. We recently announced positive 12-month interim data from the *BRIDGE* phase III open-label, single-arm, switchover study to assess the efficacy and safety of PRX-102 in Fabry patients previously treated with Replagal® (Takeda Shire), and anticipate final results from this trial in the second quarter of 2020. We anticipate the release of additional data from the *BRIGHT* and *BALANCE* trials in the fourth quarter of 2020 and the first quarter of 2021, respectively. We have entered into two exclusive global licensing and supply agreements (ex-U.S. and U.S.) with Chiesi Farmaceutici S.p.A., or Chiesi, for PRX-102; on October 19, 2017, Protalix Ltd., our wholly-owned subsidiary, entered into an Exclusive License and Supply Agreement with Chiesi, or the Chiesi Ex-US Agreement, pursuant to which Chiesi was granted an exclusive license for all markets outside of the United States to commercialize PRX-102 and on July 23, 2018, Protalix Ltd. entered into an Exclusive License and Supply Agreement with Chiesi, or the Chiesi U.S. Agreement, with respect to the commercialization of PRX-102 in the United States.

Tulinercept (OPRX-106)

Tulinercept is our orally-delivered protein product candidate for Inflammatory Bowel Disease (IBD). We completed a phase I clinical trial of OPRX-106 in healthy volunteers, which showed OPRX-106 to be well-tolerated. We completed a phase IIa clinical trial which demonstrated positive results in ulcerative colitis patients.

Alidornase alfa (PRX-110)

Alidornase alfa is our plant cell-expressed recombinant human DNase I product candidate, chemically modified to resist inhibition by actin, thus enabling enzymatic activity in the presence of actin. In vitro studies have shown PRX-110 to have a highly improved catalytic efficiency and affinity to DNA compared to the unmodified DNase I. We completed a phase IIa clinical trial of PRX-110 in Cystic Fibrosis patients in 2018, and PRX-110 was shown to be generally well-tolerated with no serious adverse events reported. Efficacy results demonstrated clinically meaningful lung function improvement following treatment with PRX-110.

PRX-115

PRX-115 is our plant cell-expressed recombinant PEGylated Uricase (Urate Oxidase) – a chemically modified enzyme to treat Gout. The Uricase enzyme converts uric acid to allantoin, which is easily eliminated through urine. We use our proprietary plant-based system to express an optimized recombinant enzyme under development for the potential treatment of Gout which is designed to have an improved half-life, reduced immunogenicity and better efficacy.

2019 and Recent Company Developments

On March 12, 2020, we entered into securities purchase agreements, or the Purchase Agreements, with certain existing and new institutional and other accredited investors, or the Purchasers. Pursuant to the Purchase Agreements, we, in a private placement in reliance on the exemption from the registration requirements of the Securities Act, agreed to issue and sell to the Purchasers an aggregate of approximately 17.6 million unregistered shares of our common stock at a price per share of $2.485, or gross aggregate proceeds equal to approximately $43.7 million. Each share to be issued will be accompanied by a warrant to purchase one share of our common stock, or the Warrant Shares, at an exercise price equal to $2.36. We have agreed to file a registration statement with the Commission to register for resale the shares issued in the private placement, including the Warrant Shares.

On February 5, 2019, we announced preliminary pharmacokinetic (PK) data from our phase III *BRIGHT* study at the 15th Annual WORLD*Symposium*™ 2019. Data showed PRX-102 to be well-tolerated; and infusion of 2 mg/kg PRX-102 administered every 4 weeks resulted in the presence of continuous active enzyme throughout the entire infusion interval. Infusions every 2 weeks is the current standard of care under approved Enzyme Replacement Therapies, or ERTs, for the treatment of Fabry disease.

On May 21, 2019, we announced the appointment of Mr. Dror Bashan as our President and Chief Executive Officer, effective as of June 30, 2019. Mr. Bashan has over 20 years of experience in the pharmaceutical industry with roles in business development, marketing, sales, and finance, providing him deep experience and knowledge of the global pharmaceutical and healthcare industries. Prior to joining Protalix, Mr. Bashan served as Senior Vice President, Global Business Development for Teva Pharmaceutical Industries Limited, or Teva, and was involved in strategic alliances, cross-company strategic projects and the acquisition and divestiture of assets.

On June 6, 2019, we announced that, following a series of meetings and correspondence with the FDA, we plan, together with Chiesi, to file a biologics license application, or a BLA, for pegunigalsidase alfa for the treatment of Fabry disease via the FDA's Accelerated Approval pathway.

On June 17, 2019, we announced the completion of enrollment in our phase III *BRIGHT* study. The *BRIGHT* study is a 12-month, open-label switchover study designed to assess the safety, efficacy and pharmacokinetics (PK) of PRX-102 administered at a dose level of 2 mg/kg every 4 weeks in up to 30 Fabry patients previously treated with the current standard of care, ERTs Fabrazyme® (Sanofi Genzyme) or Replagal.

On July 29, 2019, we announced the appointment of Mr. Eyal Rubin, as our Senior Vice President and Chief Financial Officer, effective as of September 22, 2019. Mr. Rubin has deep knowledge of both the biotechnology and pharmaceutical industries with over 20 years of finance and capital markets experience; he has an extensive background in financial planning, operations, management and strategy.

On August 13, 2019, we announced that Mr. Zeev Bronfeld had been unanimously elected as Chairman of our Board of Directors following the resignation of Mr. Shlomo Yanai. Mr. Bronfeld has been a long-time independent director of our Board of Directors and is one of the earliest investors in our company. He has extensive knowledge and experience in the management of biotechnology and life science companies.

On August 22, 2019, we announced the engagement of a first-tier financial advisory firm to assist in evaluating and pursuing strategic alternatives to maximize stakeholder value.

On September 24, 2019, we, jointly with our collaboration partner, Chiesi, announced the completion of enrollment in our *BALANCE* study in Fabry patients with impaired renal function. Patients participating in the study are being evaluated to, among other disease parameters, determine if their renal function continues to deteriorate at the same rate while being treated with agalsidase beta (Fabrazyme) as measured by estimated Glomerular Filtration Rate, or eGFR, slope. In addition, participating patients are being evaluated to assess the safety and tolerability of PRX-102.

On October 17, 2019, we announced positive 12-month interim data from our *BRIDGE* study. Data from the first 16 of the 22 adult patients (9 males and 7 females) demonstrated a mean improvement in kidney function in both male and female patients when switched from agalsidase alfa (Replagal) to PRX-102.

On November 18, 2019, we announced the completion of a Type B Pre-Biologics License Application (BLA) meeting with the FDA regarding the Accelerated Approval pathway for PRX-102 for the treatment of Fabry disease. We and the FDA reached alignment on the data to be included in our anticipated BLA filing for PRX-102, which will include data from our completed phase I/II clinical trials and data from our ongoing *BRIDGE* study. Additionally, our *BALANCE* study is expected to serve as the confirmatory trial for PRX-102 as currently designed. A confirmatory trial is required to convert a BLA approved under an Accelerated Approval pathway into a traditional approval.

On December 6, 2019, we announced a reverse stock split at a ratio of 1-for-10 and a reduction in the total number of our authorized shares of the common stock from 350 million shares to 120 million shares. The action was part of a plan to regain compliance with the continued listing guidelines of the NYSE American and to respond to a deficiency letter from the NYSE American, announced on August 30, 2019.

On December 19, 2019, we announced the appointments of Pol F. Boudes, M.D., and Gwen A. Melincoff to our Board of Directors. Dr. Boudes brings extensive medical research and development experience in Fabry disease, orphan drug development and medical innovation. Ms. Melincoff brings extensive experience in biotechnology and pharmaceutical business development, deal-formation and venture capital funding.

Our Marketed Product

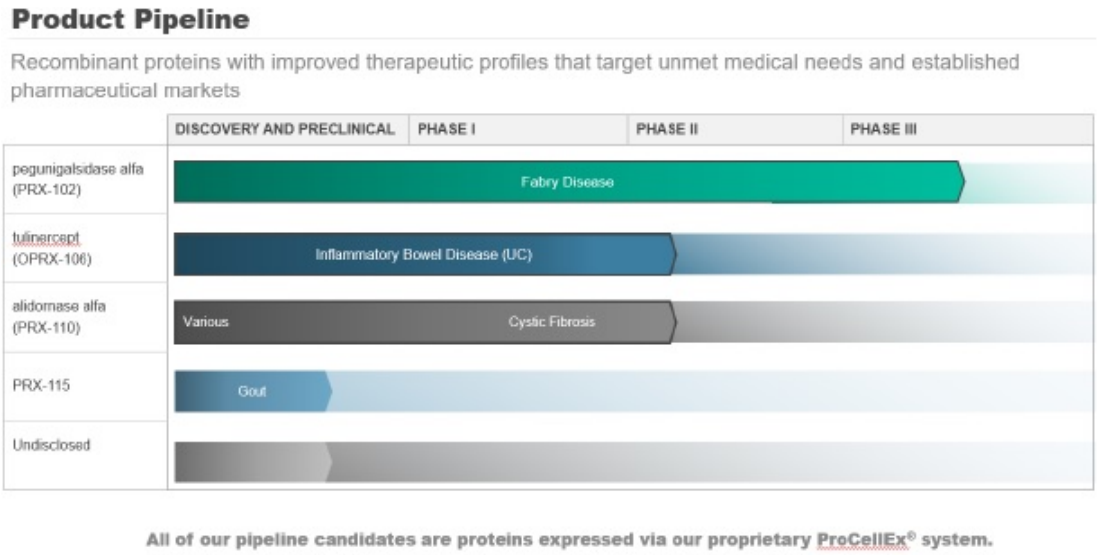
Elelyso®

Elelyso (taliglucerase alfa), our first commercial product for the treatment of Gaucher disease, is the first plant cell derived recombinant protein therapeutic approved by major regulatory authorities, including the FDA and the EMA. Elelyso is approved in 23 markets for injection as an ERT for the long-term treatment of adult and pediatric patients with a confirmed diagnosis of type 1 Gaucher disease. We have licensed to Pfizer the global rights for Elelyso in all markets, excluding Brazil. In Brazil, we maintain the distribution rights to Elelyso, marketed as BioManguinhos alfataliglicerase, through the Brazil Agreement. In 2019, we generated $9.1 million from sales of BioManguinhos alfataliglicerase to the Brazilian MoH.

Gaucher disease, also known as glucocerebrosidase deficiency, is a rare genetic autosomal recessive disorder and one of the most common Lysosomal Storage Disorders (LSD) in the world. It is one of a group of disorders that affect specific enzymes that normally break down fatty substances for reuse in the cells. If the enzymes are missing or do not work properly, the substances can build up and become toxic. Gaucher disease occurs when a lipid called glucosylceramide accumulates in the cells of the bone marrow, lungs, spleen, liver, and sometimes the brain. Gaucher disease symptoms can include fatigue, anemia, easy bruising and bleeding, severe bone pain and easily broken bones, and distended stomach due to an enlarged spleen and thrombocytopenia. Epidemiology of Gaucher disease varies; recent literature provides that prevalance of Gaucher disease ranges from 0.70 to 1.75 per 100,000 in the general population. In people of Ashkenazi Jewish heritage, estimates of occurence vary from approximately 1 in 400 to 1 in 850 people.

The current standard of care for Gaucher disease is ERT, which is a medical treatment where recombinant enzymes are injected into patients to replace the lacking or dysfunctional enzyme. In Gaucher disease, recombinant glucocerebrosidase (GCD) is injected to replace the mutated or deficient natural GCD enzyme. Elelyso is the only alternative ERT treatment of Gaucher disease to Sanofi Genzyme's Cerezyme® and VPRIV.

Our Clinical Development Pipeline



Pegunigalsidase alfa (PRX-102)

Pegunigalsidase alfa (PRX-102) is our proprietary plant cell culture expressed enzyme in development for the treatment of Fabry disease. It is a chemically modified version of the recombinant α-galactosidase-A (α-Gal-A) protein, developed using our ProCellEx technology. We have completed enrollment in all three of our ongoing phase III clinical trials of PRX-102 (*BALANCE*, *BRIDGE* and *BRIGHT*) which are designed, as a whole, to evaluate the potential superiority of PRX-102 over current ERT therapies, demonstrate the potential for improved efficacy and potentially better quality of life for Fabry patients and demonstrate the safety of our ERT. We anticipate that, in coordination with Chiesi, a BLA will be filed with the FDA under an Accelerated Approval Pathway based on the completed phase I/II clinical trials of PRX-102, and from the ongoing *BRIDGE* study. In October 2019, we met, together with Chiesi, with the FDA to discuss key information on PRX-102 to be included in the proposed BLA filing and reached alignment with the FDA on the Accelerated Approval pathway for PRX-102. In February 2020, we, together with Chiesi, announced an agreement with the FDA for the Initial Pediatric Study Plan (iPSP) for PRX-102. The joint announcement was made after completion of discussions with the FDA and receipt of confirmation from the FDA in an official "Agreement Letter" which outlines an agreed-upon approach to evaluate the safety and efficacy of PRX-102 in pediatric Fabry patients.

We have granted to Chiesi an exclusive license to develop and commercialize PRX-102 for worldwide markets; in return, we are eligible to receive milestone and royalty payments from Chiesi. The global market for Fabry disease is forecasted to exceed $1.5 billion in 2019 (Global Data) and continues to grow at a CAGR of approximately 10% (Data Bridge Market Research).

Fabry disease is a serious life-threatening rare genetic disorder. Fabry patients lack the lysosomal enzyme, α-galactosidase-A leading to the progressive accumulation of abnormal deposits of a fatty substance called globotriaosylceramide (Gb_3) in blood vessel walls throughout their body. The abnormal storage of Gb_3 increases with time and, as a result, Gb_3 accumulates, primarily in the blood and in the blood vessel walls. The accumulation leads to a narrowing of the blood vessels, which in turn leads to decreased blood flow and tissue nourishment. The ultimate consequences of Gb_3 deposition range from episodes of pain and impaired peripheral sensation to end-organ failure, particularly of the kidneys, but also of the heart and the cerebrovascular system. Fabry disease occurs in one person per 40,000 to 60,000 males.

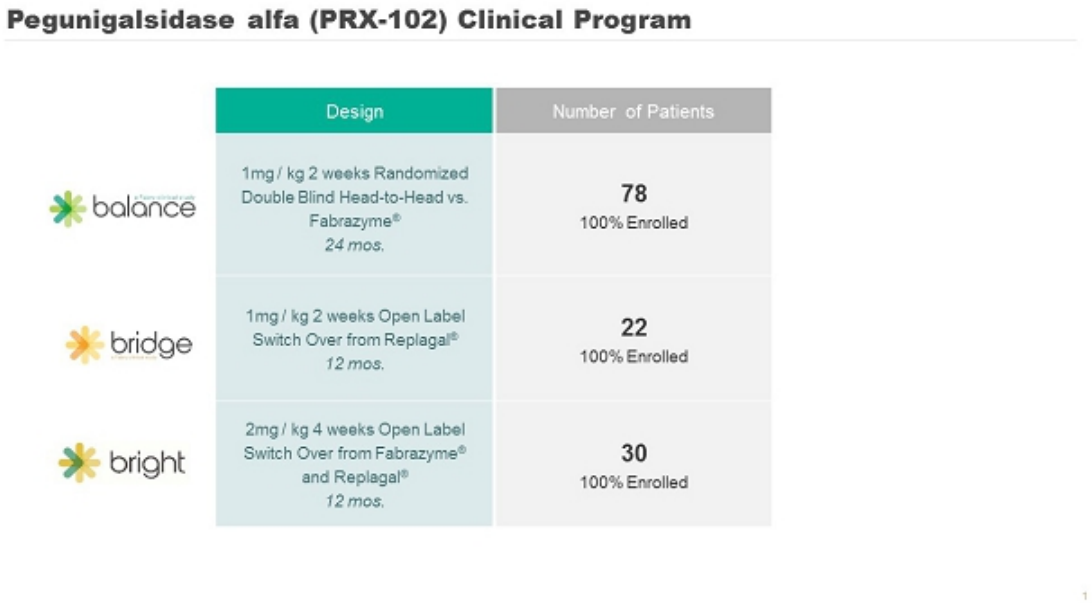
Fabry disease is generally treated with an ERT, Fabrazyme or Replagal. In ERT, the missing α-galactosidase-A is replaced with a recombinant form of the protein via intravenous (IV) infusion once every two weeks. Fabry disease, if left untreated, will progress from a less severe condition to a more serious one. It can have a significant impact on quality of life due to presence of serious, chronic, and debilitating complications, including cardiovascular and renal complications, and comorbid conditions such as pain can have a significant impact on the psychological well-being of Fabry patients, which also impacts social functioning. Fabry disease involves substantial reduction in life expectancy. Causes of death are most often cardiovascular disease and, to a lesser extent, cerebrovascular disease and renal disease. The life expectancy of Fabry patients is significantly shorter compared to the general population. Untreated male Fabry patients may experience shortened lifespans to approximately 50 years, and 70 years for untreated women. This represents a 20- and 10-year reduction, respectively.

In January 2018, the FDA granted Fast Track designation to PRX-102. Fast Track designation is a process designed to facilitate the development and expedite the review of drugs and vaccines for serious conditions that fill an unmet medical need.

In December 2017, the European Commission granted Orphan Drug Designation to PRX-102 for the treatment of Fabry disease. Orphan Drug Designation for PRX-102 allows Chiesi access to a centralized marketing authorization procedure in Europe, including applications for inspections and for protocol assistance. Additionally, PRX-102 could potentially receive 10 years of market exclusivity within the European Union, with respect to new treatments, if the orphan drug designation is maintained at the time PRX-102 is approved for marketing in the European Union.

Our clinical development program is designed to show that PRX-102 has a potential clinical benefit in all adult Fabry patient populations when compared to currently marketed Fabry disease enzymes, Fabrazyme and Replagal. In preclinical studies, PRX-102 showed enhanced activity in Fabry disease target organs, reduction of the accumulated substrate, significantly longer half-life due to higher enzyme stability, and reduced immunogenicity, which together can potentially lead to improved efficacy through increased substrate clearance and significantly lower formation of antibodies. Providing a meaningful improvement in the health and quality of life for Fabry patients being treated with PRX-102, compared to existing therapies with their limitations, represents a significant potential market opportunity. Global sales of current treatments for Fabry disease are forecasted to exceed $1.5 billion in 2019 (Global Data).

The PRX-102 phase III clinical program for the treatment of Fabry disease includes three separate studies: the *BALANCE*, *BRIDGE* and *BRIGHT* studies. The studies are based on our phase I/II clinical trial which was completed in 2015. The phase III studies aim to show the potential superiority of PRX-102 compared to Fabrazyme in a head-to-head study and include a switch-over study from Replagal and also aim to demonstrate the safety of our ERT. We are also evaluating the potential of a once-monthly treatment regimen for PRX-102 with a higher dose. Enrollment has been completed in each of the *BALANCE*, *BRIDGE* and *BRIGHT* studies. Patients in all three studies have the option to receive infusions in a home care setting based on infusion tolerability and country regulation. In addition, patients in all three studies have the option to continue to be treated with PRX-102 by enrolling in an extension study.



Phase III BALANCE Study

The *BALANCE* study is a 24-month, randomized, double blind, active control study of PRX-102 in Fabry patients with impaired renal function. We have completed enrollment of 78 patients in the trial, which is designed to evaluate the safety and efficacy of PRX-102 compared to agalsidase beta (Fabrazyme) on renal function in Fabry patients with progressing kidney disease previously treated with Fabrazyme. Patients previously treated with Fabrazyme for approximately one year and on a stable dose for at least six months were screened and then randomized on a 2:1 ratio to 1 mg/kg of PRX-102 or 1mg/kg of Fabrazyme infused once every two weeks. Randomization is being stratified by urinary protein to creatinine ratio (UPCR) of < or ≥ 1 g/g by spot urine sample. The study was designed such that no more than 50% of the patients enrolled in the study would be female. Approximately 40% of the enrolled patients were female.

The primary endpoint for the *BALANCE* study is the comparison in the annualized rate of decline of eGFR slope between Fabrazyme and PRX-102. eGFR is considered a reliable and accepted test to measure the level of kidney function and stage of kidney disease. Additional parameters being evaluated include: cardiac assessment, Lyso-Gb_3 (a biomarker for monitoring Fabry patients during therapy), pain, quality of life, immunogenicity, Fabry clinical events and pharmacokinetic and other parameters. The study also evaluates the safety and tolerability of PRX-102.

We intend to conduct an interim analysis when the last patient reaches 12 months of treatment to test for non-inferiority to support anticipated regulatory filings with the EMA. Patients enrolled in the *BALANCE* study will continue to be treated for a total of 24 months, at which point the data will be analyzed to test for superiority. If the anticipated BLA filing results in an approval from the FDA under the Accelerated Approval pathway, this analysis will also be used to support converting the accelerated approval into a full approval.

Phase III BRIDGE Study

The *BRIDGE* study is an open label, switch-over study designed to evaluate the safety and efficacy of 1 mg/kg of PRX-102 infused every two weeks, in up to 22 Fabry patients. The trial, which is fully enrolled, enrolled patients currently treated with agalsidase alfa (Replagal) for at least two years and on a stable dose for at least six months. Patients were screened and evaluated over three months while continuing Replagal treatment. Following the screening period, each patient was enrolled and switched from Replagal treatment to receive intravenous (IV) infusions of PRX-102 1 mg/kg every two weeks for 12 months.

The 12-month interim data from the first 16 of 22 adult patients enrolled (9 males and 7 females) demonstrate a mean improvement in kidney function, in both male and female patients, when switched from Replagal to PRX-102. The data demonstrated that 100% of the progressing patients (those with an estimated eGFR slope between -5 and -3 mL/min/1.73 m^2/year), and 66.7% of the fast progressing group (those with an estimated eGFR slope < -5 mL/min/1.73 m^2/year), achieved the proposed therapeutic goals after switching to PRX-102. Therapeutic goal in the progressing group was defined as an eGFR slope ≥ -3 mL/min/1.73 m^2/year; and ≥ -5 mL/min/1.73 m^2/year (or more than a 50% decrease in progression) in the fast progressing group. PRX-102 was found to be well tolerated in the study, with all adverse events being transient in nature without sequelae. The majority of the patients who completed the study elected to be rolled over to a long-term extension study and are continuing to be treated with PRX-102.

Interim results have shown that after one year, the mean annualized eGFR slope improved from -5.10 mL/min/1.73 m^2/year while on Replagal to -0.23 mL/min/1.73 m^2/year on PRX-102. Baseline characteristics of these patients, ages 27 to 60 years, were: mean eGFR 75.45 in males and 85.78 mL/min/1.73 m^2 in females, annualized pre-switching eGFR slope was -5.04 and -5.18 mL/min/1.73 m^2/year, in males and females respectively, mean residual leucocytes enzymatic activity 5.9% of lab normal mean in males and 27.9% in females, and plasma lyso-Gb_3 mean levels 53.6 and 13.8 nM, in males and females, respectively.

We anticipate using data from the interim analysis to support the anticipated BLA filing with the FDA under the Accelerated Approval pathway, and we anticipate that the final analysis will be used to support a Marketing Authorization Application (MAA) with the EMA.

Phase III BRIGHT Study

The *BRIGHT* study is a 12-month, open-label switch-over study designed to assess the safety, efficacy and pharmacokinetics (PK) of PRX-102 via intravenous (IV) infusions of 2 mg/kg administered every 4 weeks in up to 30 patients with Fabry disease, previously treated with an ERT (Fabrazyme or Replagal). To determine eligibility for participation in the study, candidates were screened to identify and select Fabry patients with stable kidney disease. Patients who matched the criteria were enrolled in the study and switched from their current treatment of intravenous (IV) infusions every 2 weeks to 2 mg/kg of PRX-102 every 4 weeks for 12 months. We completed enrollment of the *BRIGHT* study in June 2019.

Patients participating in the study are evaluated, among other disease parameters, to determine if their kidney disease had not further deteriorated while being treated with the 4-week dosing regimen as measured by eGFR and Lyso-Gb_3, as well as other parameters. In addition, participating patients are evaluated to assess the safety and tolerability of PRX-102. In February 2019, we announced preliminary pharmacokinetic (PK) data from the BRIGHT study. The results demonstrate that PRX-102 was present and remained active in the plasma over the 4-week infusion intervals. The mean concentration of PRX-102 at day 28 was 138 ng/mL. In comparison, published data on Fabrazyme (1mg/kg every 2 weeks) shows a mean concentration of 20 ng/mL at 10 hours post infusion. In addition, the area under the curve (AUC) for PRX-102 was measured to be approximately 2,000,000 ng·hr/mL over 28 days. Based on published data, the AUC of Fabrazyme is approximately 10,000 ng·hr/mL. Pre-existing anti-drug antibodies (ADA) generated in patients prior to switching to PRX-102 had substantially little effect on the circulation of PRX-102 for the 4-week period evaluated, and PRX-102 concentration in circulation was higher than agalsidase beta, even in the presence of ADAs. A preliminary safety analysis of 19 patients enrolled in the BRIGHT study was also conducted, and indicated that PRX-102 is well tolerated. To date, substantially all of the patients who completed the study opted, with the advice of the treating physician, to continue treatment under the 4-week dosing regimen in a long-term extension study.

Phase I/II Study

Our phase I/II clinical trial of PRX-102, which we completed in 2015, was a worldwide, multi-center, open-label, dose ranging study designed to evaluate the safety, tolerability, pharmacokinetics, immunogenicity and efficacy parameters of PRX-102 in adult Fabry patients. Sixteen adult, naïve Fabry patients (9 male and 7 female) completed the trial, each in one of three dosing groups, 0.2 mg/kg, 1mg/kg and 2mg/kg. Each patient received intravenous (IV) infusions of PRX-102 every two weeks for 12 weeks, with efficacy follow-up after six-month and twelve-month periods. Majority of the patients who completed the trial opted to continue receiving PRX-102 in an open-label, 60-month extension study under which all patients were switched to receive 1 mg/kg of the drug, the selected dose for our *BALANCE* and *BRIDGE* studies of PRX-102.

The adult symptomatic, ERT-naïve Fabry disease patients enrolled in the phase I/II study were evaluated for Gb_3 levels in kidney biopsies and for plasma Lyso-Gb_3 concentration by the quantitative BLISS methodology. Biopsies were available from 14 patients. The outcome of ≥ 50% reduction in the average number of Gb_3 inclusions per kidney PTC from baseline to month 6 was demonstrated in 11 of 14 (78.6%) of the patients treated with PRX-102. The overall results demonstrate that PRX-102 reaches the affected tissue and reduces kidney Gb_3 inclusions burden and Lyso-Gb_3 in the circulation. A high correlation was found between the two Fabry disease biomarkers, reduction of kidney Gb_3 inclusions and the reduction of plasma Lyso-Gb_3 over six months of treatment.

Data was recorded at 24 months from 11 patients who completed 12 months of the long-term open-label extension trial that succeeded the phase I/II study. Patients who did not continue in the extension trial included: female patients who became or planned to become pregnant and therefore were unable to continue in accordance with the study protocol; and patients who relocated to a location where treatment was not available under the clinical study.

Results showed Lyso-Gb_3 levels decreased approximately 90% from baseline (see Figure 1). Renal function remained stable with mean eGRF levels of 108.02 and 107.20 at baseline and 24 months, respectively, with a modest annual eGFR slope of -2.1 (see Figure 2). An improvement across all the gastrointestinal symptoms evaluated, including severity and frequency of abdominal pain and frequency of diarrhea, was noted. Cardiac parameters, including LVM, LVMI and EF, remained stable with no cardiac fibrosis development detected. In conclusion, an improvement of over 40% in disease severity was shown as measured by the Mainz Severity Score Index (MSSI), a score compiling the different elements of the disease severity including neurological, renal and cardiovascular parameters. In addition, an improvement was noted in each of the individual parameters of the MSSI.

Figure 1. Continuous reductions observed over 24 months

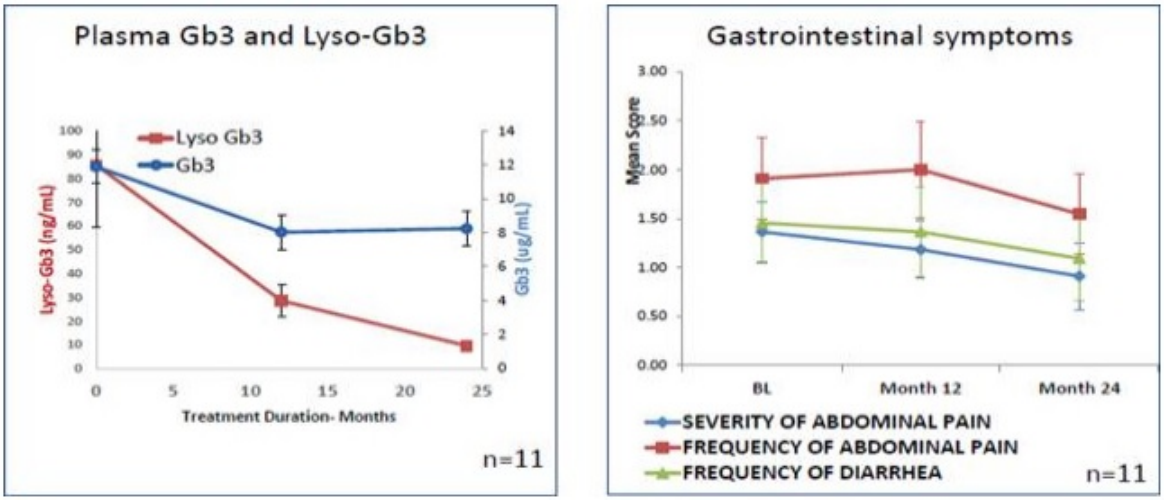
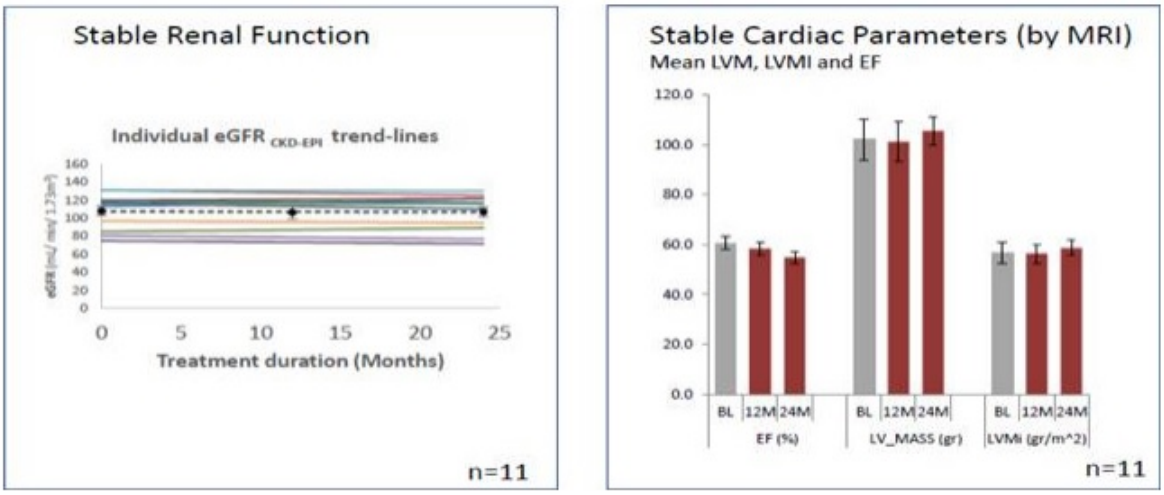


Figure 2. Continuous clinical stability observed over 24 months



The majority of adverse events were mild-to-moderate in severity, and transient in nature. During the first 12 months of treatment, only three of 16 patients (less than 19%) formed anti-drug antibodies (ADA), of which two of these patients (less than 13%) had neutralizing antibodies. Importantly, however, the ADAs turned negative for all three of these patients following 12 months of treatment. The ADA positivity effect had no observed impact on the safety, efficacy or continuous biomarker reduction of PRX-102.

Tulinercept (OPRX-106)

Tulinercept is our oral anti-TNF product candidate expressed via our ProCellEx system. It is a plant cell expressed recombinant anti-TNF (Tumor Necrosis Factor) protein for the treatment of Inflammatory Bowel Diseases (IBD). IBD is an umbrella term used to describe disorders that involve chronic inflammation of the digestive tract. Types of IBD include, among others: Ulcerative Colitis, a condition that causes long-lasting inflammation and sores (ulcers) in the innermost lining of the large intestine (colon) and rectum; and Crohn's Disease, which is characterized by inflammation of the lining of the digestive tract that often spreads deep into affected tissues. Both Ulcerative Colitis and Crohn's Disease usually involve severe diarrhea, abdominal pain, fatigue and weight loss. IBD can be debilitating and sometimes leads to life-threatening complications.

Immune-mediated inflammatory disorders can cause organ damage and are associated with increased morbidity. Common auto-immune diseases include types of IBD such as Ulcerative Colitis and Crohn's Disease, psoriasis, rheumatoid arthritis, and others. Treatment usually begins with anti-inflammatory medications. As the severity of the disease increases, patients are generally treated with anti-TNF drugs, which modulate the immune response.

TNF is a protein that is produced by the body's immune system, and people with IBD have increased levels of TNF. Anti-TNF drugs, also known as TNF-alpha inhibitors, are designed to reduce inflammation by binding to TNF and blocking its action in the body.

OPRX-106 is designed to work locally in the gut, avoiding the systemic exposure that occurs when anti-TNF-alpha is administered by injection or intravenous (IV) infusion. Plant cells have the unique attribute of a cellulose cell wall, which makes them resistant to protein degradation when passing through the digestive tract. The plant cell itself serves as a delivery capsule; OPRX-106 is activated once released in the small intestine. We believe oral delivery of OPRX-106 may be less immunogenic than injection or IV, potentially resulting in better long-term efficacy and safety, and reduced immunogenicity. Additionally, our oral delivery of recombinant proteins could be applied to additional proteins and has the potential to change the method of drug administration in certain additional indications.

The global market for IBD was $15.9 billion in 2018 and was expected to register a CAGR of 4.4% from 2018 to 2026 (Grand View Research), with an estimated over 3.0 million patients in the United States and Europe. We believe oral delivery of OPRX-106 offers a more favorable method of administration than current IBD treatments, potential clinical benefits compared to current treatments providing the potential opportunity to capture market share, if approved.

We believe that OPRX-106, an anti-TNF, has potential advantages over current treatments for patients with IBD. It is biologically active in the gut, leading to no systemic exposure, which may potentially result in a better safety profile. There is the potential of OPRX-106 being prescribed earlier in the disease cycle due to lower safety concerns and better convenience. Final dosing is subject to further evaluation in clinical trial results.

Current treatments for IBD include anti-TNF drugs such as Humira®, Remicade® and Enbrel®, which are administered as subcutaneous injections or as intravenous (IV) infusions. They are characterized by high immunogenicity and up to a 40% loss of response most likely attributed to neutralizing antibodies. Anti-TNF alfa biologics currently on the market have "Black Box" safety warnings for malignancies and infections. Similarly, other mechanisms for the treatment of IBD have serious safety precautions. Global sales of Humira, Remicade and Enbrel exceeded $30 billion in 2019 (for multiple indications).

We completed a phase IIa clinical trial of OPRX-106 on adult Ulcerative Colitis patients. The study was an open label, 2-arm study on patients with active mild to moderate Ulcerative Colitis to evaluate safety and pharmacokinetics, and key efficacy endpoints, including clinical response and remission utilizing the Mayo score. Patients were randomized to receive 2 mg or 8 mg of OPRX-106, administered orally, once daily, for 8 weeks. Data from the phase IIa clinical trial showed positive results in 18 out of 24 Ulcerative Colitis patients who completed the study with 89% of patients demonstrating improvements in the Mayo score in both doses and 61% demonstrating improvement in their Geboes score. The Mayo score assesses the severity of ulcerative colitis disease, based on stool frequency, rectal bleeding, endoscopic evaluation, and a physician's global assessment. The Geboes score is the most commonly used histological score in Ulcerative Colitis. Additionally, OPRX-106 was well-tolerated and adverse events (AEs) were mild-to-moderate and transient; no systemic exposure of the drug or anti-drug antibodies were detected.

Data from our phase I clinical trial of OPRX-106 demonstrate that the drug was well-tolerated and showed biological activity. The phase I clinical trial was a randomized, parallel-design, open-label study designed to evaluate the safety and pharmacokinetics of OPRX-106 in healthy volunteers. The trial enrolled 14 subjects who were randomized to one of three dosing cohorts receiving OPRX-106 doses equivalent to 2mg, 8mg or 16mg Tumor Necrosis Factor receptor-Fc fusion protein. Subjects received once-daily oral administrations for five consecutive days. Results demonstrated that oral administration of OPRX-106 is well tolerated. No major side effects were noted, and no suppression of the immune system was observed. Regulatory T cell activation showing biological activity in the gut was observed. Fluorescence-Activated Cell Sorting analysis (FACS) was performed using various antibodies for surface markers, and it was observed that all three dosages of OPRX-106 promoted the induction of various subsets of T cells, some of which are correlated with anti-inflammatory response.

Alidornase Alfa (PRX-110)

Alidornase alfa is our chemically-modified plant cell expressed recombinant human DNase I, administered through inhalation. Recombinant human DNase I enzymatically cleaves DNA but its activity is inhibited by actin, which is present in the blood and other target organs. PRX-110 is designed to be less susceptible to actin inhibition and have higher affinity to DNA, thus enhancing enzymatic activity. In-vitro studies have shown PRX-110 to have a highly improved catalytic efficiency and affinity to DNA, compared to dornase alfa (Pulmozyme®, currently the only commercially available DNase therapy), even more so in the presence of actin. We are currently evaluating PRX-110 for additional alternative indications.

We completed a phase I clinical trial of PRX-110 with 18 healthy volunteers, in whom alidornase alfa was found to be well tolerated.

In July 2016, we commenced a phase IIa clinical trial of PRX-110 for the treatment of Cystic Fibrosis, and we released the final results of the study in April 2017. Sixteen patients were enrolled in the study, all of whom completed the study. The phase IIa clinical trial was a 28-day switchover study to evaluate the safety and efficacy of PRX-110 in Cystic Fibrosis patients previously treated with Pulmozyme (dornase alfa). Participation in the trial was preceded by a two-week washout period from Pulmozyme before treatment with PRX-110 via inhalation.

Primary efficacy results from the phase IIa study demonstrated clinically meaningful lung function improvement following treatment with PRX-110, as demonstrated by a mean absolute improvement in the percent predicted forced expiratory volume in one second (ppFEV1) of 3.4 points from baseline. Moreover, a mean absolute increase in ppFEV1 of 2.8 points was also observed in patients participating in the study when compared to measurements taken from patients at initiation, before the switch from Pulmozyme to PRX-110.

PRX-115

PRX-115 is our chemically-modified, plant cell expressed recombinant Uricase (Urate Oxidase), an enzyme in development for the treatment of Gout. Gout is one of the most common forms of inflammatory arthritis and is caused by accumulation of excess urate crystals (monosodium urate) in joint fluid, cartilage, bones, tendons, bursas, and other sites. Symptoms include swelling of the joints and pain during gout attacks, known as acute gouty arthritis. The frequency and duration of acute attacks may increase over time, in certain patients, and lead to chronic gout, which may be associated with deposits of uric acid crystals known as tophi. Gout can result from diet or genetic predisposition and environmental factors.

Uricase enzyme converts uric acid to allantoin, which is easily eliminated through urine. To date, two variants of recombinant uricases are approved for marketing: (i) Krystexxa® for treatment of chronic Gout (no longer approved in the European Union) and (ii) Elitek® for treatment of tumor lysis syndrome. Both have a black box warning for anaphylaxis, induce strong immunogenic reactions and have other major side-effects. We are developing PRX-115 to have an improved half-life, reduced immunogenicity and improved efficacy and therapeutic value.

Intellectual Property

We have a robust patent portfolio, which is a key element of our overall strategy. We work to continually enhance, strengthen, and protect our Intellectual Property (IP) and now hold a broad portfolio of more than 85 patents globally, including Europe, the United States, Israel and additional countries worldwide. Our patents are designed to protect our proprietary technology, proprietary products and product candidates, and their methods of use. Additionally, we have more than 40 pending patent applications.

During 2019, we received patents in Canada, India and the United States for the patent family named “Large Scale Disposable Bioreactor,” adding to the 10 previously granted patents in this family. We also received patents in India, Canada and the United States for the patent family named “Stabilized Alpha-Galactosidase and Uses Thereof,” adding to the 18 patents previously granted in this family. We received patents in the United States and India for the patent family named “Nucleic Acid Construct for Expression of Alpha-Galactosidase in Plants and Plant Cells,” adding to the seven previously granted patents in this family. In addition, national phase filings were performed in certain countries worldwide for the patent family named “Therapeutic Regimen for the Treatment of Fabry using Stabilized Alpha-Galactosidase.” An Israeli patent was granted for the patent family named “Dry Powder Formulations of DNAse,” adding to the already granted U.S. patent in this family. An Israeli patent was also granted for the patent family named “Inhalable Liquid Formulations of DNase,” adding to the already granted U.S. patent in this family. We also received a patent in Europe for the patent family TNF alpha Inhibitor Polypeptides, Polynucleotides Encoding Same, Cells Expressing Same and Methods of Producing Same, adding to the three previously granted patents in this family. Two patents were granted in Israel and Japan for the family “Use of Plant Cells Expressing a TNF alpha Polypeptide Inhibitor in Therapy,” which is jointly owned with and licensed from Hadasit, adding to the three previously granted patents in this family.

Our competitive position and future success depend in part on our ability, and that of our licensees, to obtain and leverage the intellectual property covering our product candidates, know-how, methods, processes and other technologies, to protect our trade secrets, to prevent others from using our intellectual property and to operate without infringing on the intellectual property of third parties. We seek to protect our competitive position by filing United States, European Union, Israeli and other foreign patent applications covering our technology, including both new technology and improvements to existing technology. Our patent strategy includes obtaining patents on methods of production, compositions of matter and methods of use. We also rely on know-how, continuing technological innovation, licensing and partnership opportunities to develop and maintain our competitive position.

Our outstanding 2021 Notes are guaranteed by our subsidiaries and secured by perfected liens on all of our material assets, primarily consisting of our intellectual property assets, including a stock pledge of our foreign subsidiaries in favor of the holders of outstanding 2021 Notes.

As of December 31, 2019, our patent portfolio consisted of several patent families (consisting of patents and/or patent applications) covering our technology, protein expression methodologies and system and product candidates, as follows:

Patent Name/Int. App. No.	Global Pending Jurisdictions(1)	Granted Jurisdictions	Nominal Expiry
Production of High Mannose Proteins in Plant Culture/PCT/ Il2004 / 000181	Brazil	Japan, Israel, Canada, Russian Federation, Mexico, India, Australia, South Africa, Republic of Korea, Singapore, Europe, Hong Kong, Ukraine, China, USA	2024(2)
Cell/Tissue Culturing Device, System and Method/PCT/Il2005/ 000228	N/A	Israel	2025
System and Method for Production of Antibodies in Plant Cell Culture/ PCT/Il2005/001075	N/A	USA, Israel	2025
Mucosal or Enteral Administration of Biologically Active Macromolecules/PCT/Il2006/ 000832	N/A	Europe, Israel	2026
Saccharide-containing Protein Conjugates and uses thereof/PCT/ Il2008/001143	N/A	USA	2028
Large Scale Disposable Bioreactor/ PCT/Il2008/000614	Brazil, [Europe], [Israel]	Australia, Canada, China, Europe, Hong Kong, India, Israel, Republic of Korea, Russian Federation, Singapore, South Africa, USA	2028(3)
Stabilized Alpha-galactosidase and uses thereof/PCT/Il2011/000209	Brazil, [India], [Israel], [USA]	Canada, South Africa, Russian Federation, Singapore, Israel, New Zealand, Republic of Korea, Australia, China, Japan, USA, Europe, Hong Kong, India	2031

Nucleic Acid Construct for Expression of Alpha-galactosidase in Plants and Plant Cells/PCT/ Il2011/000719	Brazil	India, China, Republic of Korea, Japan, Israel, Europe, Hong Kong, USA	2024(2)
Therapeutic Regimen For The Treatment of Fabry Using Stabilized Alpha-galactosidase/ PCT/Il2018/050018	USA, Europe, Brazil, Japan, Canada, Australia, Chile, Israel, South Africa, Republic of Korea, China, New Zealand, Russian Federation, Mexico	N/A	N/A
Dry Powder Formulations of DNase 1/PCT/Il2013/050094	N/A	Israel, USA	2033
DNase I Polypeptides, Polynucleotides Encoding Same, Methods of Producing DNase I and uses thereof in Therapy/PCT/ Il2013/050097	Israel, Brazil	Europe	2033
Inhalable Liquid Formulations of DNase I/PCT/Il2013/050096	N/A	Israel, USA	2033
Modified DNase and uses thereof/ PCT/Il2016/050003	USA, Europe, Canada, China, Australia, New Zealand, South Africa, Israel, Mexico, Hong Kong	N/A	N/A
Chimeric Polypeptides, Polynucleotides Encoding Same, Cells Expressing Same and Methods of Producing Same/PCT/ Il2014/050227	USA	N/A	N/A
TNF Alpha Inhibitor Polypeptides, Polynucleotides Encoding Same, Cells Expressing Same and Methods of Producing Same/PCT/ IL2014/050228	China, Brazil, Canada, USA	Australia, Japan, Europe, Israel	2034
Use of Plant Cells Expressing a TNF Alpha Polypeptide Inhibitor in Therapy/PCT/IL2014/050231	Israel, China, Japan, Brazil, Canada	USA, Europe, Australia	2034
Chimeric Polypeptides, Polynucleotides Encoding Same, Cells Expressing Same and Methods of Producing Same	N/A	USA	2035

(1) Countries in brackets are those for which we have a patent pending and a granted patent for the same family.
(2) Patent granted in Australia expires in 2029.
(3) Patent granted in the United States expires in 2032.

We are aware of U.S. patents, and corresponding international counterparts of such patents, owned by third parties that contain claims covering methods of producing glucocerebrosidase. We do not believe that, if any claim of infringement were to be asserted against us based upon such patents, taliglucerase alfa would be found to infringe any valid claim under such patents. However, there can be no assurance that a court would find in our favor or that, if we choose or are required to seek a license to any one or more of such patents, a license would be available to us on acceptable terms or at all.

In April 2005, Protalix Ltd. entered into a license agreement with Icon Genetics AG, or Icon, pursuant to which we received an exclusive worldwide license to develop, test, use and commercialize Icon's technology to express certain proteins in our ProCellEx protein expression system. We are also entitled to a non-exclusive worldwide license to make and have made other proteins expressed by using Icon's technology in our technology. As consideration for the license, we are obligated to make royalty payments equal to varying low, single-digit percentages of net sales of products by us, our affiliates, or any sublicensees under the agreement. In addition, we are obligated to make milestone payments equal to $350,000, in the aggregate, for each product developed under the license, upon the achievement of certain milestones.

Our license agreement with Icon remains in effect until the earlier of the expiration of the last patent under the agreement or, if all of the patents under the agreement expire, 20 years after the first commercial sale of any product under the agreement. Icon may terminate the agreement upon written notice to us that we are in material breach of our obligations under the agreement and we are unable to remedy such material breach within 30 days after we receive such notice. Further, Icon may terminate the agreement in connection with certain events relating to a wind up or bankruptcy, if we make a general assignment for the benefit of our creditors, or if we cease to conduct operations for a certain period. Icon may also terminate the exclusivity granted to us by written notice if we fail to reach certain milestones within a designated period of time. Notwithstanding the termination date of the agreement, our obligation to pay royalties to Icon under the agreement may expire prior to the termination of the agreement, subject to certain conditions.

Competition

The biotechnology and pharmaceutical industries are characterized by rapidly evolving technology and significant competition. Competition from numerous existing companies and others entering the fields in which we operate is intense and expected to increase. Most of these companies have substantially greater research and development, manufacturing, marketing, financial, technological personnel and managerial resources than we do. In addition, many specialized biotechnology companies have formed collaborations with large, established companies to support research, development and commercialization of products that may be competitive with our current and future product candidates and technologies. Acquisitions of competing companies by large pharmaceutical or biotechnology companies could further enhance such competitors financial, marketing and other resources. Academic institutions, governmental agencies and other public and private research organizations are also conducting research activities and seeking patent protection and may commercialize competitive products or technologies on their own through collaborations with pharmaceutical and biotechnology companies.

With respect to Gaucher disease, we face competition from Sanofi Genzyme (Cerezyme and Cerdelga®) and Takeda Shire (Vpriv). In addition, Actelion markets a small molecule drug for the treatment of Gaucher disease (Zavesca or miglustat), an oral treatment approved by the FDA only for patients who

cannot be treated through ERT due to its side effects.

With respect to Fabry disease, we face competition from Sanofi Genzyme (Fabrazyme), Takeda Shire (Replagal) and Amicus (Galafold™). In addition, we are aware of other late clinical stage, early clinical stage and experimental drugs which are being developed for the treatment of Fabry disease by other companies.

With respect to IBD, we face competition from AbbVie Inc. (Humira®), Johnson & Johnson (Remicade®, Simpoint® and Stelara®), Pfizer (Xeljanz®), and Takeda (Entyvio®). In addition, we are aware of other clinical stage, early clinical stage and experimental anti-TNF drugs.

With respect to Gout, we face competition from allopurinol, a generic drug, febuxostat, which is marketed globally by a number of different companies, and from Horizon Pharma (Krsytexxa). In addition, we are aware of other clinical stage, early clinical stage and experimental Gout treatments.

We also face potential competition to our ProCellEx system from companies that are developing other platforms for the expression of recombinant therapeutic pharmaceuticals. We are aware of companies that are developing alternative technologies to develop and produce therapeutic proteins in anticipation of the expiration of certain patent claims covering marketed proteins. Competitors developing alternative expression technologies include Crucell N.V. (which was acquired by Johnson & Johnson in 2010), Shire and GlycoFi, Inc. (which was acquired by Merck & Co. Inc.). Other companies developing alternate plant-based technologies include iBio, Inc., Medicago, Inc., and Greenovation Biotech GmbH. Unlike ProCellEx, these alternate technologies are not cell-based. These companies base their product development on transgenic plants or whole plants.

Agreements and Partnerships

Elelyso - Pfizer

We have licensed to Pfizer the global rights to Elelyso in all markets, excluding Brazil pursuant to an Amended and Restated Exclusive License and Supply Agreement, or the Amended Pfizer Agreement, which we entered into with Pfizer in October 2015 to amend and restate our initial Exclusive License and Supply Agreement with Pfizer, or the Pfizer Agreement. Pursuant to the Amended Pfizer Agreement, Pfizer retains 100% of revenue and reimburses 100% of direct costs. For the first 10-year period after the execution of the Amended Pfizer Agreement, we have agreed to sell drug substance to Pfizer for the production of Elelyso, subject to certain terms and conditions, and Pfizer maintains the right to extend the supply period for up to two additional 30-month periods, subject to certain terms and conditions. Any failure to comply with our supply commitments may subject us to substantial financial penalties. The Amended Pfizer Agreement includes customary provisions regarding cooperation for regulatory matters, patent enforcement, termination, indemnification and insurance requirements. We maintain distribution rights to Elelyso in Brazil through a supply and technology transfer agreement with Fiocruz.

Elelyso - Fundação Oswaldo Cruz (Fiocruz)

Elelyso, marketed as BioManguinhos alfataliglicerase in Brazil, is commercialized in Brazil through the Brazil Agreement with Fiocruz. We receive direct revenues from the Brazilian government. Gaucher patients are entitled to receive ERT paid for by the Brazilian MoH. The Brazilian MoH clinical treatment guidelines state that BioManguinhos alfataliglicerase is the therapy of choice for newly diagnosed patients. BioManguinhos alfataliglicerase is currently estimated to be used by approximately 25% of Gaucher patients in Brazil.

The Brazil Agreement became effective in January 2014. The technology transfer is designed to be completed in four stages and is intended to transfer to Fiocruz the capacity and skills required for the Brazilian government to construct its own manufacturing facility, at its sole expense, and to produce a sustainable, high-quality, and cost-effective supply of BioManguinhos alfataliglicerase. The initial term of the technology transfer is seven years. The agreement contains certain purchase commitments by Fiocruz. Fiocruz's purchases of BioManguinhos alfataliglicerase to date have been significantly below certain agreed-upon purchase milestones. We continue to supply BioManguinhos alfataliglicerase to Fiocruz and patients continue to be treated with BioManguinhos alfataliglicerase in Brazil. We are discussing with Fiocruz potential actions that Fiocruz may take to comply with its purchase obligations and, based on such discussions, we will determine what we believe to be the course of action that is in the best interest of our company.

The Brazil Agreement may be extended for an additional five-year term, as needed, to complete the technology transfer. Upon completion of the technology transfer, and subject to Fiocruz receiving approval from the Brazilian Health Regulatory Agency, or ANVISA, to manufacture taliglucerase alfa in its facility in Brazil, the agreement will enter into the final term and will remain in effect until our last patent in Brazil expires. During this period, Fiocruz will be the sole provider of this important treatment option for Gaucher patients in Brazil and will pay us a single-digit royalty on net sales.

PRX-102 – Chiesi Farmaceutici

We have entered into two exclusive global licensing and supply agreements for PRX-102 for the treatment of Fabry disease with Chiesi. The agreements have significant revenue potential for Protalix. Under the agreements, Protalix Ltd. has received $50.0 million in upfront payments and was entitled to development cost reimbursements of up to $45 million, up to more than $1.0 billion in potential milestone payments and tiered royalties of 15% - 35% (ex-US) and 15% - 40% (US).

On October 19, 2017, Protalix Ltd. and Chiesi entered into the Chiesi Ex-US Agreement pursuant to which Chiesi was granted an exclusive license for all markets outside of the United States to commercialize PRX-102. Under the Chiesi Ex-US Agreement, Chiesi made an upfront payment to Protalix Ltd. of $25.0 million in connection with the execution of the agreement, and Protalix Ltd. was entitled to additional payments of up to $25.0 million in development costs in the aggregate, capped at $10.0 million per year. Protalix Ltd. is also eligible to receive additional payments of up to a maximum of $320.0 million in regulatory and commercial milestone payments. Protalix Ltd. agreed to manufacture all of the PRX-102 needed for all purposes under the agreement, subject to certain exceptions, and Chiesi will purchase PRX-102 from Protalix Ltd., subject to certain terms and conditions. Chiesi is required to make tiered payments of 15% to 35% of its net sales, depending on the amount of annual sales, as consideration for the supply of PRX-102.

On July 23, 2018, Protalix Ltd. entered into the Chiesi US Agreement with respect to the development and commercialization of PRX-102 in the United States. Protalix Ltd. received an upfront, non-refundable, non-creditable payment of $25.0 million from Chiesi and was entitled to additional payments of up to a maximum of $20.0 million to cover development costs for PRX-102, subject to a maximum of $7.5 million per year. Protalix Ltd. is also eligible to receive additional payments of up to a maximum of $760.0 million, in the aggregate, in regulatory and commercial milestone payments. Chiesi will also make tiered payments of 15% to 40% of its net sales under the Chiesi US Agreement to Protalix Ltd., depending on the amount of annual sales, subject to certain terms and conditions, as consideration for product supply.

Scientific Advisory Board

Our Scientific Advisory Board is comprised of highly regarded, recognized key opinion leaders in the biotechnology field who bring valuable experience and insight to our company. Our Scientific Advisory Board is available to consult with our management within their professional areas of expertise, exchange strategic and business development ideas with our management, attend scientific, medical and business meetings with our management, such as meetings with the FDA and comparable foreign regulatory authorities, attend meetings with existing or potential strategic partners that are relevant to their areas of expertise; and attend meetings of our Scientific Advisory Board. Our Scientific Advisory Board currently includes the following people:

Name	Affiliations (selected)
Roger D. Kornberg, Ph.D. (Chairman)	Laureate of the Nobel Prize in Chemistry Member, U.S. National Academy of Sciences Winzer Professor of Medicine, Department of Structural Biology at Stanford University 2001 Welch Prize (highest award granted in the field of chemistry in the United States) 2002 Leopold Mayer Prize (the highest award granted in the field of biomedical sciences from the French Academy of Sciences)
Professor Aaron Ciechanover, M.D., D.Sc.	Laureate of the Nobel Prize in Chemistry Distinguished research Professor at the Cancer and Vascular Biology Research Center of the Rappaport Research Institute and Faculty of Medicine at the Technion, Israel's Institute of Technology American Academy of Arts and Sciences, Member
Alexander Levitzki, Ph.D.	Wolfson Family Professor of Biochemistry in the Department of Biological Chemistry of The Alexander Silberman Institute of Life Sciences, Hebrew University of Jerusalem American Association for Cancer Research, 2013 Award for Outstanding Achievement in Chemistry in Cancer Research. 1990 Israel Prize in Biochemistry 1990 Rothschild Prize in Biology 2002 Hamilton-Fairley Award, European Society of Medical Oncology 2005 Wolf Prize for Medicine 2012 Nauta Award in Pharmacochemistry, The European Federation of Medicinal Chemistry (EFMC) (the highest award from the European Federation for Medicinal Chemistry)
Charles J. Arntzen, Ph.D.	Regent's Profession and Florence Ely Nelson Presidential Chair Biodesign Institute, CIDV, Arizona State University Member, National Academy of Sciences, USA American Society of Plant Biology Leadership in Science Public Service Award (2004) Botanical Society of America Centennial Award (2006) Fellow of American Society of Plant Biologists (2007) Doctor of Science *honoris causa.*, Hebrew University of Jerusalem Chair, Section O "Agriculture, Food, and Renewable Resources," American Association for the Advancement of Science (AAAS) (2011-2012)

Manufacturing

We use our current facility in Carmiel, Israel, which has approximately 12,900 sq/ft of clean rooms built according to industry standards, to manufacture drug substance for Elelyso, pegunigalsidase alfa and other recombinant proteins for commercial use and phase III clinical trials. We maintain an approximately 3,800 sq/ft pilot plant for protein development and to manufacture supplies for clinical trials (phase I and phase II). Elelyso, pegunigalsidase alfa and our other drug product candidates must be manufactured in a sterile environment and in compliance with cGMPs set by the FDA and other relevant foreign regulatory authorities. We are currently producing PRX-102 drug substance for our phase III and other clinical trials, as well as the manufacture of the Elelyso we need in the near future, including the Elelyso to be purchased by Pfizer under the Amended Pfizer Agreement. In addition, we intend to use our manufacturing space to produce all of the drug substance needed in connection with the clinical trials for our product candidates.

In 2017, the FDA approved the supplemental New Drug Application (sNDA) we submitted to allow us to convert our manufacturing facility from a single dedicated product facility to a multi-product facility. This conversion allows us to realize potentially significant operational savings. Our facility's current capacity can serve all of our current and expected commercial and clinical needs, and we believe it will be sufficient to serve our production needs for the anticipated commercialization of pegunigalsidase alfa.

Our manufacturing facilities have undergone successful inspections by the FDA, the Irish Medicines Board (under the EMA's centralized marketing authorization procedure), ANVISA, the Israeli Ministry of Health, the Turkish Ministry of Health, the Australian TGA and Health Canada.

Our current facility in Israel has been granted "Approved Enterprise" status, and we have elected to participate in the alternative benefits program. Our facility is located in a Zone A location, and, therefore, our income from the Approved Enterprise will be tax exempt in Israel for a 10-year period, commencing with the year in which we first generate taxable income from the relevant Approved Enterprise and after we use our net operating loss carryforwards, or NOLs. We expect to be entitled to similar tax benefits for a number of years thereafter. To remain eligible for these tax benefits, we must continue to meet certain conditions, and if we increase our activities outside of Israel, for example, by future acquisitions, such increased activities generally may not be eligible for inclusion in Israeli tax benefit programs. In addition, our technology is subject to certain restrictions with respect to the transfer of technology and manufacturing rights.

Raw Materials and Suppliers

We believe that the raw materials that we require throughout the manufacturing process of Elelyso and our other current and potential drug product candidates are widely available from numerous suppliers and are generally considered to be generic industrial biological supplies. We rely on a single, approved supplier for certain materials relating to the current expression of our proprietary biotherapeutic proteins through ProCellEx. We have identified additional suppliers for most of the materials required for the production of our product candidates.

Development and regulatory approval of our pharmaceutical products are dependent upon our ability to procure active ingredients and certain packaging materials from sources approved by the FDA and other regulatory authorities. The FDA and other regulatory approval processes require manufacturers to specify their proposed suppliers of active ingredients and certain packaging materials in their applications. From time to time, we intend to continue to identify alternative FDA-approved suppliers to ensure the continued supply of necessary raw materials.

Government Regulations

U.S. Drug Development Process

The FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and implementing regulations. Drugs are also subject to other federal, state and local statutes and regulations. Biologics are subject to regulation by the FDA under the FDCA, the Public Health Service Act, or the PHSA, and related regulations and other federal, state and local laws and regulations. Biological products include a wide variety of products including vaccines, blood and blood components, gene therapies, tissue and proteins. Unlike most prescription products made through chemical processes, biological products generally are made from human and/or animal materials. To be lawfully marketed in interstate commerce, a biologic product must be the subject of a BLA issued by the FDA on the basis of a demonstration that the product is safe, pure and potent, and that the facility in which the product is manufactured meets standards to assure that it continues to be safe, pure and potent. The FDA has developed and is continuously updating the requirements with respect to cell and gene therapy products and has issued documents concerning the regulation of cellular and tissue-based products. Manufacturers of cell and tissue-based products must comply with the FDA's current good tissue practices, or cGTP, which are FDA regulations that govern the methods used in, and the facilities and controls used for, the manufacture of such products. The primary intent of the cGTP requirements is to ensure that cell and tissue-based products are manufactured in a manner designed to prevent the introduction, transmission and spread of communicable disease.

The process of obtaining regulatory approvals and ensuring compliance with appropriate federal, state and local statutes and regulations in the United States, 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 administrative or judicial sanctions. These sanctions could include the FDA's refusal to approve pending applications, withdrawal of an approval, a clinical hold, warning letters, product recalls, product seizures, product detention, 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 biological product or drug may be marketed in the United States generally involves the following:

- Completion of preclinical laboratory tests, animal studies and formulation studies according to Good Laboratory Practices or other regulations;
- Submission to the FDA of an investigational new drug application, or IND, which must become effective before human clinical trials may begin;

- Performance of adequate and well-controlled clinical trials according to Good Clinical Practices, or GCP, to establish the safety and efficacy of the proposed biological product or drug for its intended use;
- Submission to the FDA of a BLA for a new biological product or a new drug application, or NDA, for a new drug;
- Satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the drug is produced to assess compliance with Good Manufacturing Practices, or cGMP, to assure that the facilities, methods and controls are adequate to preserve the drug's or biologic's identity, strength, quality and purity; and
- FDA review and approval of the BLA or NDA.

All clinical trials must be conducted under the supervision of one or more qualified investigators in accordance with GCP regulations. These regulations include the requirement that all subjects participating in the clinical trial provide their informed consent regarding the trial. Further, an institutional review board, or IRB, must review and approve the plan for any clinical trial before it commences at any institution. An IRB considers, among other things, whether the risks to individuals participating in the trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the information regarding the clinical trial and the consent form that must be provided to each clinical trial subject, or his or her legal representative, and must monitor the clinical trial until completed. Once an IND is in effect, each new clinical protocol and any amendments to the protocol must be submitted to the FDA for review, and to the IRBs for approval.

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

- *Phase I*. The product is initially introduced into healthy human subjects and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing may be conducted in patients having the specific disease.
- *Phase II*. Phase II clinical trials involve investigations in 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 the optimal dosage and schedule.
- *Phase III*. Phase III clinical trials are undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population at geographically dispersed clinical trial sites. These trials are intended to establish the overall risk/benefit ratio of the product and provide an adequate basis for regulatory approval and product labeling.

Post-approval studies, also called Phase IV trials, may be conducted after initial marketing approvals. These studies are used to obtain additional experience from the treatment of patients in the intended therapeutic indication and may be required by the FDA as part of the approval process.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and safety reports must be submitted to the FDA and the investigators for serious and unexpected side effects. Phase I, Phase II and Phase III testing may not be completed successfully within any specified period, if at all. The FDA or the trial sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the study subjects or patients 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 product candidate has been associated with unexpected serious harm to patients.

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

The results of product development, preclinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the product candidate, proposed labeling and other relevant information, are submitted to the FDA as part of an NDA or BLA, requesting approval to market the product. The submission of an NDA or BLA is subject to the payment of substantial user fees which may be waived under certain limited circumstances.

The testing and approval processes require substantial time and effort and approval on a timely basis, if at all. The FDA may refuse to approve a BLA or NDA if the applicable regulatory criteria are not satisfied or may require additional clinical data or other data and information. Generally, it takes one to three years to obtain approval. If questions arise during the FDA review process, approval may take a significantly longer period of time.

If a product receives regulatory approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. In addition, the FDA may require Phase IV testing which involves clinical trials designed to further assess a drug's or biologic's safety and effectiveness after BLA or NDA approval and may require testing and surveillance programs to monitor the safety of approved products that have been commercialized.

Orphan Drug Designation

Under the Orphan Drug Act of 1983, the FDA may grant orphan drug designation to drugs and biological products intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States or that affect more than 200,000 persons in the United States but that sales in the United States are not expected to recover the costs of developing and marketing a treatment drug. Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process. Among the benefits of orphan drug designation are possible funding and tax savings to support clinical trials and for other financial incentives and a waiver of the marketing application user fee.

If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications to market the same treatment for the same indication for seven years, except in limited circumstances, such as (i) the drug's orphan designation is revoked; (ii) its marketing approval is withdrawn; (iii) the orphan exclusivity holder consents to the approval of another applicant's product; (iv) the orphan exclusivity holder is unable to assure the availability of a sufficient quantity of drug; or (v) a showing of clinical superiority to the product with orphan exclusivity by a competitor product. Competitors, however, 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. Orphan drug status in the European Union has similar but not identical benefits in the European Union.

In December 2017, the European Commission granted Orphan Drug Designation to PRX-102 for the treatment of Fabry disease.

Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration and specifics of FDA marketing approval of our product candidate, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between (a) the effective date of an IND and the submission date of a BLA or an NDA plus (b) the time between the submission date of a BLA or an NDA and the approval of that application. Only one patent applicable to an approved drug is eligible for the extension and the extension must be requested prior to expiration of the patent. The U.S. Patent and Trademark Office, or USPTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. We anticipate that we will apply for restorations of the patent term for certain of patents covering our product candidates.

Fast Track Designation

The FDA has a fast track program that is designed to facilitate the development and expedite the review of drugs to treat serious conditions and fill an unmet medical need, the purpose being to make important new drugs available to patients earlier. A drug candidate that receives Fast Track designation from the FDA is eligible for some or all of the following: more frequent meetings with the FDA to discuss the drug's development plan and ensure collection of appropriate data needed to support drug approval; more frequent written communication from the FDA about such things as the design of the proposed clinical trials; eligibility for the FDA's Accelerated Approval and Priority Review, if relevant criteria are met; and eligibility for Rolling Review, which allows a drug company to submit completed sections of its BLA or NDA for review by the FDA, rather than waiting until every section of the BLA or NDA is completed before the entire application can be reviewed. BLA or NDA review usually does not begin until the drug company has submitted the entire application to the FDA. We used the Rolling Review option for our taliglucerase alfa NDA, which we completed in April 2010.

In January 2018, the FDA granted Fast Track designation to PRX-102.

Accelerated Approval

In 2012, the U.S. Congress passed the Food and Drug Administration Safety Innovations Act, or the FDASIA. Section 901 of the FDASIA amends the FDCA to allow the FDA to base Accelerated Approval for drugs for serious conditions that fill an unmet medical need on whether the drug has an effect on a surrogate or an intermediate clinical endpoint. A surrogate endpoint used for Accelerated Approval is a marker; that is, 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. An intermediate clinical endpoint is a measure of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a drug, such as an effect on irreversible morbidity and mortality. The FDA bases its decision on whether to accept the proposed surrogate or intermediate clinical endpoint on the scientific support for that endpoint. Studies that demonstrate a drug's effect on a surrogate or intermediate clinical endpoint must be "adequate and well controlled" as required by the FDCA.

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. Under subpart H of the Accelerated Approval pathway, the FDA may grant marketing approval for a new drug product 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, based on epidemiologic, therapeutic, pathophysiologic, or other evidence, to predict clinical benefit or on the basis of an effect on a clinical endpoint other than survival or irreversible morbidity. 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 IV 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.

We anticipate that, in coordination with Chiesi, a BLA for PRX-102 will be filed with the FDA under the Accelerated Approval Pathway.

Post-Approval Requirements

Any drugs for which we receive FDA approval are subject to continuing regulation by the FDA, including, among other things, record-keeping requirements, reporting of adverse effects with the product, reporting of changes in distributed products which would require field alert reports, or FARs, drugs and biological product deviation reports, or BPDRs, providing the FDA with updated safety and efficacy information, product sampling and distribution requirements, complying with certain electronic records and signature requirements and complying with FDA promotion and advertising requirements. In September 2007, the Food and Drug Administration Amendments Act of 2007 was enacted, giving the FDA enhanced post-marketing authority, including the authority to require post marketing studies and clinical trials (PMRs and PMCs), labeling changes based on new safety information, and compliance with risk evaluations and mitigation strategies, or REMS, approved by the FDA. The FDA strictly regulates labeling, advertising, promotion and other types of information on products that are placed on the market. Drugs and biologics may be promoted only for the approved indications and in accordance with the provisions of the approved label. Further, manufacturers of drugs and biologics must continue to comply with cGMP requirements, which are extensive and require considerable time, resources and ongoing investment to ensure compliance. In addition, changes to the manufacturing process generally require prior FDA approval before being implemented and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval.

Drug and biologic manufacturers and other entities involved in the manufacturing and distribution of approved drugs and biologics are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP, GTP applicable to biologics, and other laws. The cGMP requirements apply to all stages of the manufacturing process, including the production, processing, sterilization, packaging, labeling, storage and shipment of the drug. Manufacturers must establish validated systems to ensure that products meet specifications and regulatory standards, and test each product batch or lot prior to its release.

The FDA may withdraw a product approval if compliance with regulatory standards is not maintained or if problems occur after the product reaches the market. Discovery of previously unknown problems with a product subsequent to its approval may result in restrictions on the product or even complete withdrawal of the product from the market. Further, the failure to maintain compliance with regulatory requirements may result in administrative or judicial actions, such as fines, warning letters, holds on clinical trials, product recalls or seizures, product detention or refusal to permit the import or export of products, refusal to approve pending applications or supplements, restrictions on marketing or manufacturing, injunctions or civil or criminal penalties.

From time to time, legislation is drafted, introduced and passed in Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of products regulated by the FDA. In addition to new legislation, the FDA regulations and policies are often revised or reinterpreted by the agency in ways that may significantly affect our business and our development efforts. It is impossible to predict whether further legislative or FDA regulation or policy changes will be enacted or implemented and what the impact of such changes, if any, may be.

Foreign Regulation

We are subject to regulations and product registration requirements in many foreign countries in which we may sell our products, including in the areas of product standards, packaging requirements, labeling requirements, import and export restrictions and tariff regulations, duties and tax requirements. The time required to obtain clearance required by foreign countries may be longer or shorter than that required for FDA clearance, and requirements for licensing a product in a foreign country may differ significantly from FDA requirements.

Pharmaceutical products may not be imported into, or manufactured or marketed in, the State of Israel absent drug registration. The three basic criteria for the registration of pharmaceuticals in Israel is quality, safety and efficacy of the pharmaceutical product and the Israeli MOH requires pharmaceutical companies to conform to international developments and standards. Regulatory requirements are constantly changing in accordance with scientific advances as well as social and ethical values.

The relevant legislation of the European Union requires that medicinal products, including generic versions of previously approved products, and new strengths, dosage forms and formulations, of previously approved products, shall have a marketing authorization before they are placed on the market in the European Union. Authorizations are granted after the assessment of quality, safety and efficacy by the respective health authorities. In order to obtain an authorization, an application must be made to the competent authority of the member state concerned or in a centralized procedure to the EMA. Besides various formal requirements, the application must contain the results of pharmaceutical (physico-chemical, biological or microbiological) tests, of preclinical (toxicological and pharmacological) tests as well as of clinical trials. All of these tests must have been conducted in accordance with relevant EU regulations and must allow the reviewer to evaluate the quality, safety and efficacy of the medicinal product. Orphan drug designation in the European Union is granted to medicinal products intended for the diagnosis, prevention and treatment of life-threatening diseases and very serious conditions that affect not more than five in 10,000 people in the European Union. Orphan drug designation is generally given to medicinal products that treat conditions for which no current therapy exists or are expected to bring a significant benefit to patients over existing therapies.

Third Party Payor Coverage and Reimbursement

Coverage and reimbursement status of any approved therapy carries uncertainty and risk. In both the United States and foreign markets, our ability to commercialize our product and product candidates successfully, and to attract commercialization partners, depends in significant part on the availability of adequate financial coverage and reimbursement from third party payors, including, in the United States, governmental payors such as Medicare, Medicaid and the Veterans Affairs Health programs, and private health insurers. Medicare is a federally funded program managed by the Centers for Medicare and Medicaid Services, or CMS, through local fiscal intermediaries and carriers that administer coverage and reimbursement for certain healthcare items and services furnished to the elderly and disabled. Medicaid is an insurance program for certain categories of patients whose income and assets fall below state defined levels and who are otherwise uninsured that is both federally and state funded and managed by each state. The federal government sets general guidelines for Medicaid and each state creates specific regulations that govern its individual program. Each payor has its own process and standards for determining whether it will cover and reimburse a procedure or particular product. Private payors often rely on the lead of the governmental payors in rendering coverage and reimbursement determinations. Therefore, achieving favorable CMS coverage and reimbursement is usually a significant gating issue for successful introduction of a new product. The competitive position of some of our products will depend, in part, upon the extent of coverage and adequate reimbursement for such products and for the procedures in which such products are used. Prices at which we or our customers seek reimbursement for our product candidates can be subject to challenge, reduction or denial by the government and other payors.

Possible legislation at the Federal and State levels in the United States focused on cost containment and price transparency may impact our ability to sell our product and product candidates for maximum profitably. It appears likely that the pressure on pharmaceutical pricing will continue, especially under the Medicare program, which may also increase our regulatory burdens and operating costs. Moreover, additional changes could be made to governmental healthcare programs that could significantly impact the success of our product and product candidates.

Some third party payors also require pre-approval of coverage for new or innovative devices, biologics or drug therapies before they will reimburse healthcare providers that use such therapies. While we cannot predict whether any proposed cost-containment measures will be adopted or otherwise implemented in the future, the announcement or adoption of these proposals could have a material adverse effect on our ability to obtain adequate prices for our product candidates and operate profitably.

Different pricing and reimbursement schemes exist in other countries. In the European Union, governments influence the price of pharmaceutical products through their pricing and reimbursement rules and control of national health care systems that fund a large part of the cost of those products to consumers. Some jurisdictions operate positive and negative list systems under which products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other member states allow companies to fix their own prices for medicines, but monitor and control company profits. The downward pressure on health care costs in general, particularly prescription drugs and biologics, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert a commercial pressure on pricing within a country.

Other Healthcare Laws and Compliance Requirements

In the United States, our activities are potentially subject to regulation by various federal, state and local authorities in addition to the FDA, including the Centers for Medicare and Medicaid Services, other divisions of the U.S. Department of Health and Human Services (e.g., the Office of Inspector General), the U.S. Department of Justice and individual U.S. Attorney General offices within the Department of Justice, and state and local governments. These regulations include:

- the federal healthcare program anti-kickback law, which prohibits, among other things, persons from soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs;

- federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other government reimbursement programs that are false or fraudulent;

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters and which also imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information;

- the federal transparency requirements under the Health Care Reform Law requires manufacturers of drugs, devices, biologics, and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests;

- the FDCA, which among other things, strictly regulates drug and biologic product marketing, prohibits manufacturers from marketing drug products for off-label use and regulates the distribution of drug samples; and

- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by federal laws, thus complicating compliance efforts.

Compliance with Environmental, Health and Safety Laws

In addition to FDA regulations, we are also subject to evolving federal, state and local environmental, health and safety laws and regulations. In the past, compliance with environmental, health and safety laws and regulations has not had a material effect on our capital expenditures. Compliance with environmental, health and safety laws and regulations in the future may require additional capital expenditures.

Israeli Government Programs

The following is a brief summary of the current principal Israeli tax laws applicable to us and Protalix Ltd., and of the Israeli Government programs from which Protalix Ltd. benefits. Some parts of this discussion are based on new tax legislation that has not been subject to judicial or administrative interpretation. Therefore, the views expressed in the discussion may not be accepted by the tax authorities in question. This summary is based on laws and regulations in effect as of the date hereof, and should not be construed as legal or professional tax advice and does not cover all possible tax considerations.

General Corporate Tax Structure in Israel

The income of Protalix Ltd., other than income from "Approved Enterprises," is taxed in Israel at regular rates. Pursuant to the Economic Efficiency Law (Legislative Amendments for Implementing the Economic Policy for the 2017 and 2018 Budget Year), 2016, the corporate tax rate in 2018 and thereafter is 23%. Capital gains on the sale of assets are subject to capital gains tax according to the corporate tax rate in effect in the year which the assets are sold.

Law for the Encouragement of Capital Investments, 1959

The Law for the Encouragement of Capital Investments, 1959, as amended, or the Investment Law, provides certain incentives for capital investments in a production facility (or other eligible assets). Generally, an investment program that is implemented in accordance with the provisions of the Investment Law, referred to as an "Approved Enterprise," is entitled to benefits. These benefits may include cash grants from the Israeli government and tax benefits, based upon, among other things, the location within Israel of the facility in which the investment is made and specific elections made by the grantee. In order to qualify for these incentives, an Approved Enterprise is required to comply with the requirements of the Investment Law, and Letter of approval received by Protalix Ltd.

Protalix Ltd. will continue to enjoy the tax benefits under the pre-revision provisions of the Investment Law. If any new benefits are granted to Protalix Ltd. in the future, Protalix Ltd. will be subject to the provisions of the amended Investment Law with respect to these new benefits. Therefore, the following discussion is a summary of the Investment Law prior to its amendment as well as the relevant changes contained in the new legislation.

Under the Investment Law prior to its amendment, a company that wished to receive benefits had to receive approval from the Authority for the Investment and Development of the Industry and Economy, or the Investment Center. Each certificate of approval for an Approved Enterprise relates to a specific investment program in the Approved Enterprise, delineated both by the financial scope of the investment and by the physical characteristics of the facility or the asset, e.g., the equipment to be purchased and utilized pursuant to the program.

An Approved Enterprise may elect to forego any entitlement to the grants otherwise available under the Investment Law and, instead, participate in an alternative benefits program under which the undistributed income (after deductions and offsets) from the Approved Enterprise is exempt from corporate tax for a defined period of time. Under the alternative package of benefits, a company's undistributed income derived from an Approved Enterprise will be exempt from corporate tax for a period of between two and 10 years from the first year of taxable income, depending upon the geographic location within Israel of the Approved Enterprise. Upon expiration of the exemption period, the Approved Enterprise is eligible for the reduced tax rates otherwise applicable under the Investment Law for any remainder of the otherwise applicable benefits period (up to an aggregate benefits period of either seven or 10 years, depending on the location of the company or its definition as a foreign investors' company). If a company has more than one Approved Enterprise program or if only a portion of its capital investments are approved, its effective tax rate is the result of a weighted combination of the applicable rates. The tax benefits from any certificate of approval relate only to taxable profits attributable to the specific Approved Enterprise and are contingent upon meeting the criteria set out in the certificate of approval. Income derived from activity that is not integral to the activity of the Approved Enterprises (including capital gain) does not enjoy these tax benefits.

A company that has an Approved Enterprise program is eligible for further tax benefits, as an alternative to exemption, if it qualifies as a foreign investors' company. A foreign investors' company eligible for benefits is essentially a company in which more than 25% of the share capital (in terms of shares, rights to profit, voting and appointment of directors) is owned (measured by both share capital and combined share and loan capital) by non-Israeli residents. A company that qualifies as a foreign investors' company and has an Approved Enterprise program is eligible for tax benefits for a 10-year benefit period and may enjoy a reduced corporate tax rate of 10% to 23%, depending on the amount of the company's shares held by non-Israeli shareholders.

If a company that has an Approved Enterprise program is a wholly-owned subsidiary of another company, the percentage of foreign investments is determined based on the percentage of foreign investment in the parent company. The tax rates and related levels of foreign investments with respect to a foreign investor's company that has an Approved Enterprise program are set forth in the following table:

Percent of Foreign Ownership	Rate of Reduced Tax
Over 25% but less than 49%	23%
49% or more but less than 74%	20%
74% or more but less than 90%	15%
90% or more	10%

Our original facility in Israel has been granted "Approved Enterprise" status, and it has elected to participate in the alternative benefits program. Under the terms of its Approved Enterprise program, the facility is located in a top priority location, or "Zone A," and, therefore, the undistributed income from that Approved Enterprise will be tax exempt in Israel for a period of 10 years, commencing with the year in which taxable income is first generated from the relevant Approved Enterprise. The current benefits program may not continue to be available and Protalix Ltd. may not continue to qualify for its benefits.

A company that has elected to participate in the alternative benefits program and that subsequently pays a dividend out of the income derived from the portion of its facilities that have been granted Approved Enterprise status during the tax exemption period will be subject to corporate tax in respect of the amount of dividend distributed at the rate that would have been applicable had the company not elected the alternative benefits program (generally 10% to 23%, depending on the extent to which non-Israeli shareholders hold such company's shares). If the dividend is distributed within 12 years after the end of the benefits period (or, in the case of a foreign investor's company, without time limitation), the dividend recipient is taxed at the reduced withholding tax rate of 15% applicable to dividends from approved enterprises, or at the lower rate under an applicable tax treaty. After this period, the withholding tax rate is 25% to 30%, or at the lower rate under an applicable tax treaty. In the case of a company with a foreign investment level (as defined by the Investment Law) of 25% or more, the 12-year limitation on reduced withholding tax on dividends does not apply. The company must withhold this tax at its source, regardless of whether the dividend is converted into foreign currency.

The Investment Law also provides that an Approved Enterprise is entitled to accelerated depreciation on its property and equipment that are included in an approved investment program. This benefit is an incentive granted by the Israeli government regardless of whether the alternative benefits program is elected.

The benefits available to an Approved Enterprise are conditioned upon terms stipulated in the Investment Law and its regulations and the criteria set forth in the applicable certificate of approval. If Protalix Ltd. does not fulfill these conditions in whole or in part, the benefits can be canceled and Protalix Ltd. may be required to refund the benefits received, linked to the Israeli consumer price index with interest. We believe that Protalix Ltd. currently operates in compliance with all applicable conditions and criteria.

Amendment No. 60 to the Investment Law introduced a tax benefits regime referred to as "Benefitted Enterprises." Under the Investment Law, the approval of the Investment Center is required only for Benefitted Enterprises that receive cash grants. Benefitted Enterprises that do not receive benefits in the form of governmental cash grants, but only tax benefits, are no longer required to obtain this approval. Instead, these Benefitted Enterprises are required to make certain investments as specified in the Investment Law.

The amended Investment Law specifies certain conditions for a Benefitted Enterprise to be entitled to benefits. These conditions include, inter alia, the following:

- the Benefitted Enterprise's revenues from any single country or a separate customs territory may not exceed 75% of the Benefitted Enterprise's total revenues; or

- at least 25% of the Benefitted Enterprise's revenues during the benefits period must be derived from sales into a single country or a separate customs territory with a population of at least 14 million people (starting from January 1, 2012, 1.4% must be added for each year).

There can be no assurance that Protalix Ltd. will comply with the above conditions in the future or that Protalix Ltd. will be entitled to any additional benefits under the Investment Law. In addition, it is possible that Protalix Ltd. may not be able to operate in a manner that maximizes utilization of the potential benefits available under the Investment Law.

In the future there may be changes in the law, subject to the preservation of benefits, which may affect the benefits available to companies under the Investment Law. The termination or substantial reduction of any of the benefits available under the Investment Law could impact our tax expenses.

Amendment of the Law for the Encouragement of Capital Investments, 1959

In recent years, several amendments have been made to the Investments Law which have enabled new alternative benefit tracks, subject to certain conditions. The Investments Law was amended as part of the Economic Policy Law for the years 2011-2012 (amendment 68 to the Encouragement of Capital Investments Law), which was passed by the Israeli Knesset on December 29, 2010. The amendment sets alternative benefit tracks to those currently in effect under the provisions of the Investments Law. On December 29, 2016, Amendment 73 to the Investments Law, or the Investments Law Amendment, was published. This amendment sets new benefit tracks, inter alia, "Preferred Technological Enterprise" and "Special Preferred Technological Enterprise." To date, we have elected not to have the Investments Law Amendment apply to our company.

Encouragement of Industrial Research, Development and Technology Innovation Law, 1984

To date, Protalix Ltd. has received grants from the OCS under the Israeli Law for the Encouragement of Industrial Research, Development and Technology Innovation, 1984, and related regulations, or the Research Law. On January 1, 2016, the Israeli government established NATI which replaced many of the functions of the Office of the Chief Scientist of the Israeli Department of Labor, or the OCS. For purposes of clarity, references to NATI will include the OCS. NATI grants are made available to finance of a portion of Protalix Ltd.'s research and development expenditures in Israel. As of December 31, 2019, NATI approved grants in respect of Protalix Ltd.'s continuing operations totaling approximately $53.2 million (before interest, as described below), measured from inception. Protalix Ltd. is required to repay up to 100% of grants actually received (plus interest at the LIBOR rate applied to the grants received on or after January 1, 1999) to NATI through payments of royalties at a rate of 3% to 6% of the revenues generated from NATI-funded project, depending on the period in which revenues were generated. As of December 31, 2019, Protalix Ltd. either paid or accrued royalties payable of $12.4 million and Protalix Ltd.'s contingent liability to NATI with respect to grants received was approximately $40.8 million.

Under the Research Law, recipients of grants from NATI are prohibited from manufacturing products developed using these grants outside of the State of Israel without special approvals, although the Research Law does enable companies to seek prior approval for conducting manufacturing activities outside of Israel without being subject to increased royalties. If Protalix Ltd. receives approval to manufacture the products developed with government grants outside of Israel, it will be required to pay an increased total amount of royalties (possibly up to 300% of the grant amounts plus interest), depending on the manufacturing volume that is performed outside of Israel, as well as at a possibly increased royalty rate.

Additionally, under the Research Law, Protalix Ltd. is prohibited from transferring NATI-financed technologies and related intellectual property rights outside of the State of Israel, except under limited circumstances and only with the approval of NATI Council or the Research Committee. Protalix Ltd. may not receive the required approvals for any proposed transfer and, if received, Protalix Ltd. may be required to pay NATI a portion of the consideration that it receives upon any sale of such technology by a non-Israeli entity. The scope of the support received, the royalties that Protalix Ltd. has already paid to NATI, the amount of time that has elapsed between the date on which the know-how was transferred and the date on which NATI grants were received and the sale price and the form of transaction will be taken into account in order to calculate the amount of the payment to NATI. Approval of the transfer of technology to residents of the State of Israel is required, and may be granted in specific circumstances only if the recipient abides by the provisions of applicable laws, including the restrictions on the transfer of know-how and the obligation to pay royalties. No assurance can be made that approval to any such transfer, if requested, will be granted.

Under the Research Law and the regulations promulgated thereunder, NATI Council may allow the transfer outside of Israel of know-how derived from an approved program and the related manufacturing rights in limited circumstances which are currently as follows:

- in the event of a sale of know-how itself to a non-affiliated third party, provided that upon such sale the owner of the know-how pays to NATI an amount, in cash, as set forth in the Research Law (and the regulations promulgated thereunder). In addition, the amendment provides that if the purchaser of the know-how gives the selling Israeli company the right to exploit the know-how by way of an exclusive, irrevocable and unlimited license, the research committee may approve such transfer in special cases without requiring a cash payment.

- in the event of a sale of a company which is the owner of know-how, pursuant to which the company ceases to be an Israeli company, provided that upon such sale, the owner of the know-how makes a cash payment to NATI as set forth in the Research Law (and the regulations promulgated thereunder).

- in the event of an exchange of know-how such that in exchange for the transfer of know-how outside of Israel, the recipient of the know-how transfers other know-how to the company in Israel in a manner in which NATI is convinced that the Israeli economy realizes a greater, overall benefit from the exchange of know-how.

The Research Committee may, in special cases, approve the transfer of manufacture or of manufacturing rights of a product developed within the framework of the approved program or which results therefrom, outside of Israel.

The State of Israel does not own intellectual property rights in technology developed with NATI funding and there is no restriction on the export of products manufactured using technology developed with NATI funding. The technology is, however, subject to transfer of technology and manufacturing rights restrictions as described above. For a description of such restrictions, please see "Risk Factors—Risks Relating to Our Operations in Israel." NATI approval is not required for the export of any products resulting from the research or development or for the licensing of any technology in the ordinary course of business.

Law for the Encouragement of Industry (Taxes), 1969

We believe that Protalix Ltd. currently qualifies as an "Industrial Company" within the meaning of the Law for the Encouragement of Industry (Taxes), 1969, or the Industry Encouragement Law. The Industry Encouragement Law defines "Industrial Company" as a company resident in Israel and incorporated in Israel, that derives 90% or more of its income in any tax year (other than specified kinds of passive income such as capital gains, interest and dividends) from an "Industrial Enterprise" operating in Israel (including Judea & Samaria territories and the Gaza strip), that it owns. An "Industrial Enterprise" is defined as an enterprise whose major activity in a given tax year is industrial production.

The following corporate tax benefits, among others, are available to Industrial Companies:

- amortization of the cost of purchased know-how and patents over an eight-year period for tax purposes;
- accelerated depreciation rates on equipment and buildings;
- under specified conditions, an election to file consolidated tax returns with other related Israeli Industrial Companies; and
- expenses related to a public offering are deductible in equal amounts over three years.

Eligibility for the benefits under the Industry Encouragement Law is not subject to receipt of prior approval from any governmental authority. It is possible that Protalix Ltd. may fail to qualify or may not continue to qualify as an "Industrial Company" or that the benefits described above will not be available in the future.

Tax Benefits for Research and Development

Under specified conditions, Israeli tax laws allow a tax deduction by a company for research and development expenditures, including capital expenditures, for the year in which such expenditures are incurred. These expenditures must relate to scientific research and development projects and must be approved by NATI. Furthermore, the research and development projects must be for the promotion of the company and carried out by or on behalf of the company seeking such tax deduction. However, the amount of such deductible expenditures is reduced by the sum of any funds received through government grants for the finance of such scientific research and development projects. Research and development expenses which were not approved shall be deductible over a period of three years.

Employees

As of December 31, 2019, we had 196 employees, of whom 19 have a Ph.D. or an M.D. in their respective scientific fields. We believe that our relations with these employees are good. We believe that our success will greatly depend on our ability to identify, attract and retain capable employees. The Israeli Ministry of Labor and Welfare is authorized to make certain industry-wide collective bargaining agreements, or Expansion Orders, that apply to types of industries or employees including ours. These agreements affect matters such as cost of living adjustments to salaries, length of working hours and week, recuperation, travel expenses, and pension rights. Otherwise, our employees are not represented by a labor union or represented under a collective bargaining agreement. See "Risk Factors—We depend upon key employees and consultants in a competitive market for skilled personnel. If we are unable to attract and retain key personnel, it could adversely affect our ability to develop and market our products."

Company Background

We were originally incorporated in the State of Florida in April 1992, and reincorporated in the State of Delaware in March 2016. Protalix Ltd., our wholly-owned subsidiary and sole operating unit, is an Israeli company and was originally incorporated in Israel in 1993.

ProCellEx® is our registered trademark. Each of the other trademarks, trade names or service marks appearing in this Annual Report on Form 10-K belongs to its respective holder.

Available Information

We make available on our website, www.protalix.com, free of charge, our Commission filings, including our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to these reports, as soon as reasonably practicable after we electronically file these documents with, or furnish them to, the Commission. Additionally, from time to time, we provide notifications of material news including press releases and conferences on our website. Webcasts of presentations made by our company at certain conferences may also be available from time to time on our website, to the extent the webcasts are available. The content of our website is not intended to be incorporated by reference into this report or in any other report or document we file and any references to these websites are intended to be inactive textual references only.

We are also listed on the Tel Aviv Stock Exchange, or the TASE, and, accordingly, we submit copies of all our filings with the Commission to the Israeli Securities Authority and the TASE. Such copies can be retrieved electronically through the TASE's internet messaging system (www.maya.tase.co.il) and through the MAGNA distribution site of the Israeli Securities Authority (www.magna.isa.gov.il).

Our website also includes printable versions of our Code of Business Conduct and Ethics and the charters for each of the Audit, Compensation and Nominating Committees of our Board of Directors. Each of these documents is also available in print, free of charge, to any stockholder who requests a copy by addressing a request to:

Protalix BioTherapeutics, Inc.
2 Snunit Street, Science Park
P.O. Box 455
Carmiel 2161401, Israel
Attn: Mr. Eyal Rubin, Sr. Vice President and Chief Financial Officer

Item 1A. Risk Factors

You should carefully consider the risks described below together with the other information included in this Annual Report on Form 10-K. Our business, financial condition or results of operations could be adversely affected by any of these risks. If any of these risks occur, the value of our common stock could decline.

Risks Related to Clinical Trials and Regulatory Matters

We may not obtain the necessary U.S., EMA or other worldwide regulatory approvals to commercialize our drug candidates in a timely manner, if at all, which would have a material adverse effect on our business, results of operations and financial condition.

We need FDA approval to commercialize our drug candidates in the United States, EMA approval to commercialize our drug candidates in the European Union and approvals from other foreign regulators to commercialize our drug candidates elsewhere. In order to obtain FDA approval of any of our drug candidates, we must submit to the FDA an NDA or a BLA demonstrating that the drug candidate is safe for humans and effective for its intended use. This demonstration requires significant research and animal tests, which are referred to as preclinical studies, as well as human tests, which are referred to as clinical trials. In the European Union, we must submit an MAA to the EMA. Satisfaction of the regulatory requirements of the FDA, EMA and other foreign regulatory authorities typically takes many years, depends upon the type, complexity and novelty of the drug candidate and requires substantial resources for research, development and testing. With respect to planned submission of a BLA to the FDA for pegunigalsidase alfa under the Accelerated Approval pathway, the FDA may request additional data or other conditions of the submission. Even if we comply with all the requests of regulatory authorities, the authorities may ultimately reject any marketing application that we file for a product candidate in the future, if any, or we might not obtain regulatory clearance in a timely manner. Companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in advanced or late-stage clinical trials, even after obtaining promising earlier trial results or in preliminary findings or other comparable authorities for such clinical trials. Further, even if favorable testing data is generated by the clinical trials of a drug candidate, the applicable regulatory authority may not accept or approve a marketing application we file for the drug candidate or may require us to conduct additional clinical testing or perform post-marketing studies which would cause us to incur additional costs.

Failure to obtain approval of the FDA, EMA or comparable foreign authorities of any of our drug candidates in a timely manner, if at all, will severely undermine our business, financial condition and results of operation by reducing our potential marketable products and our ability to generate corresponding product revenues.

We are subject to extensive governmental regulation including the requirements of the FDA and other comparable regulatory authorities before our drug candidates may be marketed.

Both before and after marketing approval of our drug candidates, if at all, we, our drug candidates, our suppliers, our contract manufacturers and our contract testing laboratories are subject to extensive regulation by the FDA and comparable foreign regulatory authorities. Failure to comply with applicable requirements of the FDA or comparable foreign regulatory authorities could result in, among other things, any of the following actions:

- warning letters;
- fines and other monetary penalties;
- unanticipated expenditures;
- delays in the FDA's or other foreign regulatory authorities' approving, or the refusal of any regulatory authority to approve, any drug candidate;
- product recall or seizure;
- interruption of manufacturing or clinical trials;
- operating restrictions;
- injunctions; and
- criminal prosecutions.

In addition to the approval requirements, other numerous and pervasive regulatory requirements apply, both before and after approval, to us, our drug candidates, our suppliers, contract manufacturers, and contract testing laboratories. These include requirements related to:

- testing;
- manufacturing;
- quality control;
- labeling;
- advertising;
- promotion;
- distribution;
- export;
- reporting to the FDA certain adverse experiences associated with use of the drug candidate; and
- obtaining additional approvals for certain modifications to the drug candidate or its labeling or claims.

We also are subject to inspection by the FDA and comparable foreign regulatory authorities, to determine our compliance with regulatory requirements, as are our suppliers, contract manufacturers, and contract testing laboratories, and there can be no assurance that the FDA, or any other comparable foreign regulatory authority, will not identify compliance issues that may disrupt production or distribution, or require substantial resources to correct. We may be required to make modifications to our manufacturing operations in response to these inspections which may require significant resources and may have a material adverse effect upon our business, results of operations and financial condition.

The approval process for any drug candidate may also be delayed by changes in government regulation, future legislation or administrative action or changes in policy of the FDA and comparable foreign authorities that occur prior to or during their respective regulatory reviews of such drug candidate. Delays in obtaining regulatory approvals with respect to any drug candidate may:

- delay commercialization of, and our ability to derive product revenues from, such drug candidate;
- delay any regulatory-related milestone payments payable under outstanding collaboration agreements;
- require us to perform costly procedures with respect to such drug candidate; or
- otherwise diminish any competitive advantages that we may have with respect to such drug candidate.

Delays in the approval process for any drug candidate may have a material adverse effect upon our business, results of operations and financial condition.

Clinical trials are very expensive, time-consuming and difficult to design and implement and may result in unforeseen costs which may have a material adverse effect on our business, results of operations and financial condition.

Human clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. The clinical trial process is also time-consuming. Other than taliglucerase alfa, all of our other drug candidates, including pegunigalsidase alfa, are in the clinical, preclinical or research stages. Our clinical program for pegunigalsidase alfa is in the middle of phase III, but generally, clinical programs take at least several years to complete. Preliminary and initial results from a clinical trial do not necessarily predict final results, and failure can occur at any stage of the trial. We may encounter problems that cause us to abandon or repeat preclinical studies or clinical trials. Failure or delay in the commencement or completion of our clinical trials may be caused by several factors, including:

- slower than expected rates of patient recruitment, particularly with respect to trials of rare diseases such as Fabry disease;
- determination of dosing issues;
- unforeseen safety issues;
- lack of effectiveness during clinical trials;
- disagreement by applicable regulatory bodies over our trial protocols, the interpretation of data from preclinical studies or clinical trials or conduct and control of clinical trials;
- determination that the patient population participating in a clinical trial may not be sufficiently broad or representative to assess efficacy and safety for our target population;

- inability to monitor patients adequately during or after treatment;
- inability or unwillingness of medical investigators and institutional review boards to follow our clinical protocols; and
- lack of sufficient funding to finance the clinical trials.

Any failure or delay in commencement or completion of any clinical trials of pegunigalsidase alfa or our other product candidates will have a material adverse effect on our business, results of operations and financial condition. In addition, we or the FDA or other regulatory authorities may suspend any clinical trial at any time if it appears that we are exposing participants in the trial to unacceptable safety or health risks or if the FDA or such other regulatory authorities, as applicable, find deficiencies in our IND submissions or the conduct of the trial. Any suspension of a clinical trial may have a material adverse effect on our business, results of operations and financial condition.

We may find it difficult to enroll patients in our clinical trials, which could cause significant delays in the completion of such trials or may cause us to abandon one or more clinical trials.

Some of the diseases or disorders that our drug candidates are intended to treat are relatively rare and we expect only a subset of the patients with these diseases to be eligible for our clinical trials. Our clinical trials generally mandate that a patient cannot be involved in another clinical trial for the same indication. Therefore, subjects that participate in ongoing clinical trials for products that are competitive with our drug candidates are not available for our clinical trials. An inability to enroll a sufficient number of patients for any of our clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether, which will have a material adverse effect on our business, results of operations and financial condition.

If the results of our clinical trials do not support our claims relating to a drug candidate, or if serious side effects are identified, the completion of development of such drug candidate may be significantly delayed or we may be forced to abandon development altogether, which will significantly impair our ability to generate product revenues.

The results of our clinical trials with respect to any drug candidate might not support our claims of safety or efficacy, the effects of our drug candidates may not be the desired effects or may include undesirable side effects or the drug candidates may have other unexpected characteristics. Data obtained from tests are susceptible to varying interpretations which may delay, limit or prevent regulatory approval. The clinical trial process may fail to demonstrate that our drug candidates are safe for humans and effective for indicated uses. In addition, our clinical trials, may involve specific and small patient populations. Results of early clinical trials conducted on a small patient population may not be indicative of future results. Adverse or inconclusive results may cause us to abandon a drug candidate and may delay development of other drug candidates. Any delay in, or termination of, our clinical trials will delay the filing of NDAs and BLAs with the FDA, or other filings with other foreign regulatory authorities, and, ultimately, significantly impair our ability to commercialize our drug candidates and generate product revenues which would have a material adverse effect on our business, results of operations and financial condition.

Patients may discontinue their participation in our clinical trials which may negatively impact the results of these studies and extend the timeline for completion of our development programs.

Patients enrolled in our clinical trials may discontinue their participation at any time during the study as a result of a number of factors, including withdrawing their consent, experiencing adverse clinical events, which may or may not be judged related to our drug candidates under evaluation, or due to planned or actual pregnancies. The discontinuation of patients in any one of our studies may delay the completion of the study or cause the results from the study not to be positive or to not support a filing for regulatory approval of the applicable drug candidate, which would have a material adverse effect on our business, results of operations and financial condition.

Because our clinical trials depend upon third-party researchers, the results of our clinical trials and such research activities are subject to delays and other risks which are, to a certain extent, beyond our control, which could impair our clinical development programs and our competitive position.

We depend upon independent investigators and collaborators, such as universities and medical institutions, to conduct our preclinical and clinical trials. These collaborators are not our employees, and we cannot control the amount or timing of resources that they devote to our clinical development programs. The investigators may not assign as great a priority to our clinical development programs or pursue them as diligently as we would if we were undertaking such programs directly. If outside collaborators fail to devote sufficient time and resources to our clinical development programs, or if their performance is substandard, the approval of anticipated NDAs, BLAs and other marketing applications, and our introduction of new drugs, if any, may be delayed which could impair our clinical development programs and would have a material adverse effect on our business, results of operations and financial condition. The collaborators may also have relationships with other commercial entities, some of whom may compete with us. If our collaborators also assist our competitors, our competitive position could be harmed.

We have only limited experience in regulatory affairs, and some of our drug candidates may be based on new technologies. These factors may affect our ability or the time we require to obtain necessary regulatory approvals.

We have only limited experience in filing and prosecuting the applications necessary to gain regulatory approvals for medical devices and drug candidates. Moreover, some of the drug candidates that are likely to result from our development programs may be based on new technologies that have not been extensively tested in humans. The regulatory requirements governing these types of drug candidates may be less well defined or more rigorous than for conventional products. As a result, we may experience a longer regulatory process in connection with obtaining regulatory approvals of any products that we develop, which may have a material adverse effect on our business, results of operations and financial condition.

Orphan drug designation may not ensure that we will enjoy market exclusivity in any jurisdiction. If any of our other competitors are able to obtain orphan drug exclusivity for any products that are competitive with our products, we may be precluded from selling or obtaining approval of our competing products by the applicable regulatory authorities for a significant period of time.

In the United States, the European Union and other countries, a drug may be designated as having orphan drug status, subject to certain conditions. There can be no assurance that a drug candidate that receives orphan drug designation will receive orphan drug marketing exclusivity and more than one drug can have orphan designation for the same indication. In addition, the orphan drug designation granted to pegunigalsidase alfa by the EMA does not affect Fabry disease treatments that preexist the approval of pegunigalsidase alfa, if at all.

Foreign regulations regarding orphan drugs are similar to those in the United States but there are several differences. For example, the exclusivity period in the European Union is generally 10 years. From time to time, we may apply to the FDA or any comparable foreign regulatory authority for orphan drug designation for any one or more of our drug candidates. Other than pegunigalsidase alfa which was granted orphan drug designation by the EMA, none of our drug candidates have been designated as an orphan drug and there is no guarantee that the FDA or any other regulatory authority will grant such designation in the future. In addition, neither orphan drug designation nor orphan drug exclusivity prevents competitors from developing or marketing different drugs for the relevant indication. Even if we obtain orphan drug exclusivity for one or more indications for one of our drug candidates, we may not be able to maintain the exclusivity. For example, if a competitive product that is the same drug or biologic as one of our drug candidates is shown to be clinically superior to the drug candidate, any orphan drug exclusivity granted to the drug candidate will not block the approval of the competitive product.

If any drug receives orphan drug exclusivity in any jurisdiction for the same indication of any of our drug candidates, we may be prevented from attaining a similar designation with respect to our drug candidate or from marketing the drug candidate in the jurisdiction during the applicable exclusivity period, which will have a material adverse effect on our business, results of operations and financial condition.

The fast track designation for pegunigalsidase alfa for the treatment of Fabry disease may not lead to a faster development or regulatory review or approval process or increase the likelihood that pegunigalsidase alfa will receive regulatory approval for the treatment of Fabry disease.

The FDA has granted Fast Track designation to pegunigalsidase alfa for the treatment of Fabry disease. Fast Track designation does not increase the likelihood that pegunigalsidase alfa will receive regulatory approval for the treatment of Fabry disease. Further, despite the designation, we may not experience a faster development process, review or approval compared to applications considered for approval under conventional FDA procedures. In addition, the FDA is entitled to withdraw the Fast Track designation of a drug candidate at any time. Any failure to realize the benefits of Fast Track designation may have a material adverse effect on our business, results of operations and financial condition.

Risks Related to Our Business

We have a limited operating history which may limit the ability of investors to make an informed investment decision.

Taliglucerase alfa is our only commercial product. The successful commercialization of our other drug candidates will require us to perform a variety of functions, including:

- continuing to perform preclinical development and clinical trials;
- participating in regulatory approval processes;
- formulating and manufacturing products; and
- conducting sales and marketing activities.

Our operations have been limited to organizing and staffing our company, acquiring, developing and securing our proprietary technology and undertaking, through third parties, preclinical trials and clinical trials of our principal drug candidates. To date, our phase III clinical trial of taliglucerase alfa is the only phase III study we have completed. These operations provide a limited basis for investors to assess our ability to commercialize our drug candidates and whether to invest in our company.

We currently depend heavily on the success of pegunigalsidase alfa. Any failure to commercialize pegunigalsidase alfa, or the experience of significant delays in doing so, will have a material adverse effect on our business, results of operations and financial condition.

We are investing a significant portion of our efforts and financial resources in the development of pegunigalsidase alfa and our ability to generate significant product revenues in the future, will depend heavily on the successful development and commercialization of pegunigalsidase alfa. The successful commercialization of pegunigalsidase alfa will depend on several factors, including the following:

- successful completion of our ongoing studies of pegunigalsidase alfa;
- Chiesi's efforts under the Chiesi Agreement;
- obtaining marketing approvals from the FDA, the EMA and other foreign regulatory authorities;
- maintaining the cGMP compliance of our manufacturing facility or establishing manufacturing arrangements with third parties;
- the successful audit of our facilities by the FDA and other foreign regulatory authorities;
- the development of successful sales and marketing organizations for pegunigalsidase alfa;
- the availability of reimbursement to patients from healthcare payors for pegunigalsidase alfa, if approved;
- a continued acceptable safety and efficacy profile of pegunigalsidase alfa following approval; and
- other risks described in these Risk Factors.

Any failure to commercialize pegunigalsidase alfa or the experience of significant delays in doing so will have a material adverse effect on our business, results of operations and financial condition.

Any failure by us to supply drug substance to Pfizer may have a material adverse effect on our business, results of operations and financial condition.

Under the Amended Pfizer Agreement, we have agreed, for the first 10-year period after the execution of the agreement, to sell drug substance to Pfizer for the production of Elelyso, and Pfizer maintains the right to extend the supply period for up to two additional 30-month periods subject to certain terms and conditions. As part of that obligation, we agreed to substantial financial penalties in case we fail to comply with the supply commitments, or are delayed in doing so. The amounts of the penalties depend on when any such failure occurs and for how long it persists, if at all, and other considerations. Any failure to comply with the supply commitments under the Amended Pfizer Agreement may have a material adverse effect on our business, results of operations and financial condition.

Our strategy, in certain cases, is to enter into collaboration agreements with third parties to leverage our ProCellEx system to develop product candidates. Failure to enter into such agreements, or non-compliance by us or our collaborators with such agreements, may have a material adverse effect on our business, results of operations and financial condition.

Our strategy, in certain cases, is to enter into arrangements with pharmaceutical companies to leverage our ProCellEx system to develop additional product candidates. Under these arrangements, we may grant to our partners rights to license and commercialize pharmaceutical products developed under the applicable agreements, as we have done with Elelyso and pegunigalsidase alfa. Our partners may control key decisions relating to the development of the products and we may depend on our partners' expertise and dedication of sufficient resources to develop and commercialize our product candidates. The rights of our partners limit our flexibility in considering alternatives for the commercialization of our product candidates. If we or any of our current or future partners breach or terminate the agreements that make up such arrangements, our partners otherwise fail to conduct their obligations under such arrangements in a timely manner, there is a dispute about their obligations or if either party terminates the applicable agreement or elects not to continue the arrangement, we may not enjoy the benefits of the agreements or receive a sufficient amount of royalty or milestone payments from them, if any, which may have a material adverse effect on our business, results of operations and financial condition.

If we are unable to develop and commercialize our product candidates, our business will be adversely affected.

A key element of our strategy is to develop and commercialize a portfolio of new products in addition to taliglucerase alfa. We seek to do so through our internal research programs and strategic collaborations for the development of new products. Research programs to identify new product candidates require substantial technical, financial and human resources, whether or not any product candidates are ultimately identified. Our research programs may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development for many reasons, including the following:

- a product candidate is not capable of being produced in commercial quantities at an acceptable cost, or at all;
- a product candidate may not be accepted by patients, the medical community or third-party payors;
- competitors may develop alternatives that render our product candidates obsolete;
- the research methodology used may not be successful in identifying potential product candidates; or
- a product candidate may on further study be shown to have harmful side effects or other characteristics that indicate it is unlikely to be effective or otherwise does not meet applicable regulatory approval.

Any failure to develop or commercialize any of our other product candidates may have a material adverse effect on our business, results of operations and financial condition.

Our ProCellEx protein expression system is based on our proprietary plant cell-based expression technology which has a limited history and any material problems with the system, which may be unforeseen, may have a material adverse effect on our business, results of operations and financial condition.

Our ProCellEx protein expression system is based on our proprietary plant cell-based expression technology. Although taliglucerase alfa and all of our product candidates are produced through ProCellEx, the technology remains novel. Compared to mammalian cell-based protein expression systems for which there is a wealth of data, there is not a significant amount of data generated regarding plant cell-based protein expression. Accordingly, plant cell-based protein expression systems may be subject to unknown risks. In addition, the protein glycosilation pattern created by our protein expression system is not identical to the natural human glycosilation pattern. Although we have over 10 years of experience with human treatment with taliglucerase alfa and pegunigalsidase alfa in clinical and commercial settings without any sign of any effect, the longer term effect of the protein glycosilation pattern created by our protein expression system on humans, if any, is still unknown. Lastly, as our protein expression system is a new technology, we cannot always rely on existing equipment; rather, there is a need to design custom-made equipment and to generate specific growth media for the plant cells which may not be available at favorable prices, if at all. Any material problems with the technology underlying our plant cell-based protein expression system may have a material adverse effect on our business, results of operations and financial condition.

The manufacture of our products is an exacting and complex process, and if we or one of our materials suppliers encounter problems manufacturing our products, it will have a material adverse effect on our business, results of operations and financial condition.

The FDA and foreign regulators require manufacturers to register manufacturing facilities. The FDA and foreign regulators also inspect these facilities to confirm compliance with cGMP or similar requirements that the FDA or foreign regulators establish. We or our materials suppliers may face manufacturing or quality control problems causing product production and shipment delays or a situation where we or the supplier may not be able to maintain compliance with the FDA's cGMP requirements, or those of foreign regulators, necessary to continue manufacturing our drug candidates. To date, our current facility has passed audits by the FDA and a number of other regulatory authorities but remains subject to audit by other foreign regulatory authorities. There can be no assurance that we will be able to comply with FDA or foreign regulatory manufacturing requirements for our current facility or any facility we may establish in the future, and the failure to so comply will have a material adverse effect on our business, results of operations and financial condition.

We rely on third parties for final processing of taliglucerase alfa, pegunigalsidase alfa and our product candidates, which exposes us to a number of risks that may delay development, regulatory approval and commercialization of taliglucerase alfa and our other product candidates or result in higher product costs.

We have no experience in the final filling and freeze drying steps of the drug manufacturing process. We rely on third parties in the United States and Europe to perform fill and finish activities for taliglucerase alfa and pegunigalsidase alfa, and have engaged other parties for our other product candidates. We may be unable to identify manufacturers and/or replacement manufacturers on acceptable terms or at all because the number of potential manufacturers is limited and the FDA and other regulatory authorities, as applicable, must approve any manufacturer and/or replacement manufacturer, including us, and we or any such third party manufacturer might be unable to formulate and manufacture our drug products in the volume and of the quality required to meet our clinical and commercial needs. If we engage any contract manufacturers, such manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical or commercial needs. In addition, contract manufacturers are subject to the rules and regulations of the FDA and comparable foreign regulatory authorities and face the risk that any of those authorities may find that they are not in compliance with applicable regulations. Each of these risks, if realized, could delay our clinical trials, the approval, if any, of our potential drug candidates by the FDA and other regulatory authorities, or the commercialization of our drug candidates or could result in higher product costs or otherwise deprive us of potential product revenues.

Developments by competitors may render our products or technologies obsolete or non-competitive which would have a material adverse effect on our business, results of operations and financial condition.

We compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations. Our drug candidates will have to compete with existing therapies and therapies under development by our competitors. Our commercial opportunities may be reduced or eliminated if our competitors develop and market products that are less expensive, more effective or safer than our drug products. Other companies have drug candidates in various stages of preclinical or clinical development to treat diseases for which we are also seeking to develop drug products. Some of these potential competing drugs are further advanced in development than our drug candidates and may be commercialized earlier. See Business – Competition.

Most of our competitors, either alone or together with their collaborative partners, operate larger research and development programs, staff and facilities and have substantially greater financial resources than we do, as well as significantly greater experience in:

- developing drugs;
- undertaking preclinical testing and human clinical trials;
- obtaining marketing approvals from the FDA and other regulatory authorities;
- formulating and manufacturing drugs; and
- launching, marketing and selling drugs.

These organizations also compete with us to attract qualified personnel, acquisitions and joint ventures candidates and for other collaborations. Activities of our competitors may impose unanticipated costs on our business or adversely affect the market for our drug products which would have a material adverse effect on our business, results of operations and financial condition.

If we in-license drug candidates, we may delay or otherwise adversely affect the development of our existing drug candidates, which may negatively impact our business, results of operations and financial condition.

In addition to our own internally developed drug candidates, we proactively seek opportunities to in-license and advance other drug candidates that are strategic and have value-creating potential to take advantage of our development know-how and technology. In-licensing additional drug candidates may significantly increase our capital requirements, and place a strain on the time of our existing personnel, which may delay or otherwise adversely affect the development of our existing drug candidates or cause us to re-prioritize our drug pipeline if we do not have the necessary capital resources to develop all of our drug candidates, which may have a material adverse impact on our business, results of operations and financial condition.

If we are unable to manage future growth successfully, there could be a material adverse impact on our business, results of operations and financial condition.

To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability on the part of our management to manage growth could delay the execution of our business plans or disrupt our operations. If we are unable to manage our growth effectively, we may not use our resources in an efficient manner, which may delay the development of our drug candidates and materially and adversely impact our business, results of operations and financial condition.

If we acquire companies, products or technologies, we may face integration risks and costs associated with those acquisitions that could negatively impact our business, results of operations and financial condition.

If we are presented with appropriate opportunities, we may acquire or make investments in complementary companies, products or technologies. If we acquire companies or technologies, we will face risks, uncertainties and disruptions associated with the integration process, including difficulties in the integration of the operations of an acquired company, integration of acquired technology with our products, diversion of our management’s attention from other business concerns, the potential loss of key employees or customers of the acquired business and impairment charges if future acquisitions are not as successful as we originally anticipate. In addition, our operating results may suffer because of acquisition-related costs or amortization expenses or charges relating to acquired intangible assets. Any failure to successfully integrate other companies, products or technologies that we may acquire may have a material adverse effect on our business and results of operations. Furthermore, we may have to incur debt or issue equity securities to pay for any additional future acquisitions or investments, the issuance of which could be dilutive to our existing stockholders.

We depend upon key employees and consultants in a competitive market for skilled personnel. If we are unable to attract and retain key personnel, it could adversely affect our ability to develop and market our products.

We are highly dependent upon the principal members of our management team, especially our President and Chief Executive Officer, Dror Bashan, as well as the Chairman of our Board of Directors, Zeev Bronfeld, our other directors, our scientific advisory board members, consultants and collaborating scientists. Many of these people have been involved with us for many years and have played integral roles in our progress, and we believe that they will continue to provide value to us. A loss of any of these personnel may have a material adverse effect on aspects of our business, clinical development and regulatory programs. We have employment agreements with Mr. Bashan and our other executive officers that may be terminated by us or the applicable officer at any time with varying notice periods of 60 to 180 days. The loss of any of these persons' services may adversely affect our ability to develop and market our products and obtain necessary regulatory approvals. Further, we do not maintain key-man life insurance.

We also depend in part on the continued service of our key scientific personnel and our ability to identify, hire and retain additional personnel, including marketing and sales staff. We experience intense competition for qualified personnel, and the existence of non-competition agreements between prospective employees and their former employers may prevent us from hiring those individuals or subject us to suit from their former employers. While we attempt to provide competitive compensation packages to attract and retain key personnel, many of our competitors are likely to have greater resources and more experience than we have, making it difficult for us to compete successfully for key personnel.

Our collaborations with outside scientists and consultants may be subject to restriction and change.

We work with medical experts, biologists, chemists and other scientists at academic and other institutions, and consultants who assist us in our research, development, regulatory and commercial efforts, including the members of our scientific advisory board. These scientists and consultants have provided, and we expect that they will continue to provide, valuable advice regarding our programs. These scientists and consultants are not our employees, may have other commitments that would limit their future availability to us and typically will not enter into non-compete agreements with us. If a conflict of interest arises between their work for us and their work for another entity, we may lose their services. In addition, we will be unable to prevent them from establishing competing businesses or developing competing products. For example, if a key scientist acting as a principal investigator in any of our clinical trials identifies a potential product or compound that is more scientifically interesting to his or her professional or academic interests, his or her availability to remain involved in our clinical trials could be restricted or eliminated, which may have a material adverse effect on our business, results of operations and financial condition.

Under current U.S. and Israeli law, we may not be able to enforce employees' covenants not to compete and therefore may be unable to prevent our competitors from benefiting from the expertise of some of our former employees.

We have entered into non-competition agreements with substantially all of our employees. These agreements prohibit our employees, if they cease working for us, from competing directly with us or working for our competitors for a limited period. Under current U.S. and Israeli law, we may be unable to enforce these agreements against most of our employees and it may be difficult for us to restrict our competitors from gaining the expertise our former employees gained while working for us. If we cannot enforce our employees' non-compete agreements, we may be unable to prevent our competitors from benefiting from the expertise of our former employees, which may have a material adverse effect on our business, results of operations and financial condition.

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

Despite the implementation of security measures, our internal computer systems and those of our present and future contractors and consultants are vulnerable to damage from computer viruses and unauthorized access. Although to our knowledge we have not experienced any 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 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 our product candidates and other third parties for the manufacture of our product candidates 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 applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development and commercialization of our product candidates could be delayed.

If product liability claims are brought against us, it may result in reduced demand for our products and product candidates or damages that exceed our insurance coverage.

The clinical testing, marketing and use of our products and product candidates exposes us to product liability claims if the use or misuse of those products or product candidates cause injury or disease, or results in adverse effects. Use of our products or product candidates, whether in clinical trials or post approval, could result in product liability claims. We presently carry clinical trial liability insurance with coverages of up to $10.0 million per occurrence and $10.0 million in the aggregate, an amount we consider reasonable and customary. However, this insurance coverage includes various deductibles, limitations and exclusions from coverage, and in any event might not fully cover any potential claims. We may need to obtain additional clinical trial liability coverage prior to initiating additional clinical trials. We expect to obtain product liability insurance coverage before commercialization of our product candidates; however, such insurance is expensive and insurance companies may not issue this type of insurance when we need it. We may not be able to obtain adequate insurance in the future at an acceptable cost. Any product liability claim, even one that was not in excess of our insurance coverage or one that is meritless and/or unsuccessful, may adversely affect our cash available for other purposes, such as research and development, which may have a material adverse effect on our business, results of operations and financial condition. Product liability claims, even if without merit, may result in reduced demand for our products, if approved, or result in adverse market reactions, which would have a material adverse effect on our business, results of operations and financial condition.

Reforms in the healthcare industry and the uncertainty associated with pharmaceutical pricing, reimbursement and related matters could adversely affect the marketing, pricing and demand for our products, if approved.

Increasing healthcare expenditures have been the subject of considerable public attention in the United States. Both private and government entities are seeking ways to reduce or contain healthcare costs. Numerous proposals that would result in changes in the U.S. healthcare system have been introduced or proposed in the U.S. Congress and in some state legislatures within the United States, including reductions in the pricing of prescription products and changes in the levels at which consumers and healthcare providers are reimbursed for purchases of pharmaceutical products. Legislation passed in recent years has imposed certain changes to the way in which drugs, including our product candidates, are covered and reimbursed in the United States. For example, federal legislation and regulations have implemented new reimbursement methodologies for certain drugs, created a voluntary prescription drug benefit, Medicare Part D, and have imposed significant revisions to the Medicaid Drug Rebate Program. The PPACA imposes yet additional changes to these programs. Legislation that reduces reimbursement for our product candidates could adversely impact how much or under what circumstances healthcare providers will prescribe or administer our product candidates, if approved. This could materially and adversely impact our business by reducing our ability to generate revenue, raise capital, obtain additional collaborators and market our products, if approved. In addition, we believe the increasing emphasis on managed care in the United States has and will continue to put pressure on the price and usage of pharmaceutical products, which may adversely impact product sales, upon approval, if at all.

Governments outside the United States tend to impose strict price controls and reimbursement approval policies, which may adversely affect our prospects for generating revenue.

In some countries, particularly European Union member states, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time (six to 12 months or longer) after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries with respect to any product candidate that achieves regulatory approval, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. Any unavailability or limitation on the reimbursement of our products upon approval, if at all, or the determination of unsatisfactory reimbursement prices, may have a material adverse effect on our business, results of operations and financial condition. Further, if we achieve regulatory approval of any product, we must successfully negotiate product pricing for such product in individual countries. As a result, the pricing of our product candidates, if approved, in different countries may vary widely, thus creating the potential for third-party trade in our products in an attempt to exploit price differences between countries. This third-party trade of our products could undermine our sales in markets with higher prices which could have a material adverse effect on our business, results of operations and financial condition.

Our ability to utilize net operating loss carryforwards may be limited.

Our NOLs, as of December 31, 2019, are equal to approximately $213.1 million, of which approximately $29.0 million may be restricted under Section 382 of the Internal Revenue Code, or the IRC. IRC Section 382 applies whenever a corporation with NOLs experiences an ownership change. As a result of IRC Section 382, the taxable income for any post-change year that may be offset by a pre-change NOL may not exceed the fair market value of the pre-change entity multiplied by the IRC long-term tax exempt rate. Significant judgment is required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, we considered all available evidence, including past operating results, the most recent projections for taxable income and prudent and feasible tax planning strategies. We reassess our valuation allowance periodically and if future evidence allows for a partial or full release of the valuation allowance, a tax benefit will be recorded accordingly. Any ownership change (including as a result of conversion of our outstanding convertible notes into shares of our common stock), or any other limitation on our utilization of NOLs, could have a material adverse effect on our business, results of operations and financial condition.

Our corporate structure may create U.S. federal income tax inefficiencies

Protalix Ltd. is our wholly-owned subsidiary and thus a controlled foreign corporation of our company for U.S. federal income tax purposes. This organizational structure may create inefficiencies, as certain types of income and investments of Protalix Ltd. that otherwise would not be currently taxable under general U.S. federal income tax principles may become taxable. These inefficiencies may require us to use more of our NOLs than we otherwise might and may result in a tax liability without a corresponding distribution from our subsidiary which could have a material adverse effect on our business, results of operations and financial condition.

We are a holding company with no operations of our own.

We are a holding company with no operations of our own. Accordingly, our ability to conduct our operations, service any debt that we may incur in the future and pay dividends, if any, is dependent upon the earnings from the business conducted by Protalix Ltd. The distribution of those earnings or advances or other distributions of funds by our subsidiary to us, as well as our receipt of such funds, are contingent upon the earnings of Protalix Ltd. and are subject to various business considerations and U.S. and Israeli law. If Protalix Ltd. is unable to make sufficient distributions or advances to us, or if there are limitations on our ability to receive such distributions or advances, we may not have the cash resources necessary to conduct our corporate operations or service our debt which would have a material adverse effect on our business, results of operations and financial condition.

Risks Related to Our Financial Condition and Capital Requirements

Our management has raised substantial doubt about our ability to continue as a going concern.

Based on its internal assessment, our management has raised substantial doubt about our ability to continue as a going concern. As of December 31, 2019, we had cash and cash equivalents of approximately $17.8 million. Our ability to continue as a going concern will depend on our ability to enter into a refinancing or restructuring. We currently have outstanding $57.9 million aggregate principal amount of our 7.50% convertible promissory notes due November 2021, or the 2021 Notes, which are secured with a perfected lien on all of our assets. In addition, we have an outstanding note payable to Pfizer with a principal amount equal to $4.3 million due November 2020. Under the terms of the indenture governing the 2021 Notes, we are required to maintain a minimum cash balance of at least $7.5 million. Management is in the process of evaluating refinancing and restructuring alternatives, including a restructuring of our outstanding convertible notes, and related transactions. However, there is no certainty about our ability to obtain such funding. If we are unable to secure additional financing in the future on acceptable terms, or at all, we may be unable to commence or complete planned preclinical and clinical trials or obtain approval of our drug candidates from the FDA and other regulatory authorities. In addition, we may be forced to reduce or discontinue product development or product licensing, reduce or forego sales and marketing efforts and other commercialization activities or forego attractive business opportunities in order to improve our liquidity and to enable us to continue operations which would have a material adverse effect on our business and results of operations.

We have received a Deficiency Letter from the NYSE American regarding our common stock.

On August 30, 2019, we announced that we received a deficiency letter from the NYSE American stating that we are not in compliance with the continued listing standards as set forth in Section 1003(a)(i) – (iii) of the NYSE American Company Guide as we have reported a stockholders' equity deficiency as of June 30, 2019 and net losses in our five most recent fiscal years ended December 31, 2018, which may result in the delisting of our common stock from the NYSE American. The letter has no immediate effect on the listing of our common stock on the NYSE American. Our common stock will trade on the NYSE American while we regain compliance with the continued listing standards. Subsequently, we submitted a detailed plan of compliance advising the NYSE American of the actions we have taken, or plan to take, that would bring our company into compliance with the continued listing standards within 18 months of receipt of the letter. A failure to regain compliance with applicable listing standards, or a failure to maintain compliance with other listing standards, will adversely affect the liquidity of our common stock and could result in an event of default under the indenture governing our 2021 notes which would have a material adverse effect on our business, results of operations and financial condition.

Servicing our debt and settling conversion requests may require a significant amount of cash, and we may not have sufficient cash flow from our business to pay our debt. Furthermore, restrictive covenants governing our indebtedness may restrict our ability to raise additional capital.

Our ability to maintain minimum liquidity requirements of our 2021 Notes and to pay interest on, or to make any scheduled or otherwise required payment of the principal of, and settle conversion requests on our outstanding convertible notes depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to maintain minimum liquidity amounts and to service our debt and make necessary expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. If we raise additional debt, it would increase our interest expense, leverage and operating and financial costs. In addition, the terms of the indentures governing our outstanding convertible notes, which are secured by certain of our material assets, including all of our intellectual property, and the agreements governing future indebtedness may restrict us from adopting any of these alternatives. We may be able to obtain amendments and waivers of such restrictions, subject to such restrictions under the terms of the applicable indenture or any subsequent indebtedness. In the event of any such default, the holders of the indebtedness could, among other things, elect to declare all amounts owed immediately due and payable, which could cause all or a large portion of our available cash flow to be used to pay such amounts and thereby reduce the amount of cash available to pursue our business plans or force us into bankruptcy or liquidation, or, with respect to our indebtedness that is secured, result in the foreclosure on the assets that secure the debt, which would force us to relinquish rights to assets that we may believe are critical to our business. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations. Any default on our debt will have a material adverse effect on our business, results of operations and financial condition.

Our significant level of indebtedness could adversely affect our business, results of operations and financial condition and prevent us from fulfilling our obligations under our convertible notes and our other indebtedness.

Our outstanding convertible notes represent a significant amount of indebtedness with substantial debt service requirements. We may also incur additional indebtedness to meet future financing needs. Our substantial indebtedness could have material adverse effects on our business, results of operations and financial condition. For example, it could:

- make it more difficult for us to satisfy our financial obligations, including with respect to the convertible notes;
- result in an event of default under our outstanding convertible notes if we fail to comply with the financial and other restrictive covenants contained in agreements governing any future indebtedness, which event of default could result in all of our debt becoming immediately due and payable;
- increase our vulnerability to general adverse economic, industry and competitive conditions;
- reduce the availability of our cash flow to fund working capital, capital expenditures, acquisitions and other general corporate purposes because we will be required to dedicate a substantial portion of our cash flow from operations to the payment of principal and interest on our indebtedness;
- limit our flexibility in planning for, or reacting to, and increasing our vulnerability to changes in our business, the industry in which we operate and the general economy;
- prevent us from raising funds necessary to purchase convertible notes surrendered to us by holders upon a fundamental change (as described in the indenture governing the notes), which failure would result in an event of default with respect to the convertible notes;
- place us at a competitive disadvantage compared to our competitors that have less indebtedness or are less highly leveraged and that, therefore, may be able to take advantage of opportunities that our debt levels or leverage prevent us from exploiting; and
- limit our ability to obtain additional financing.

Each of these factors may have a material and adverse effect on our business, results of operations and financial condition and our ability to meet our payment obligations under the convertible notes and our other indebtedness. Our ability to make payments with respect to the convertible notes and to satisfy any other debt obligations depends on our future operating performance and our ability to generate significant cash flow in the future, which will be affected by prevailing economic conditions and financial, business, competitive, legislative and regulatory factors as well as other factors affecting our company and industry, many of which are beyond our control.

We are required to comply with a number of covenants under the indenture governing our outstanding 2021 Notes that could hinder our growth.

The indenture governing our 2021 Notes contains a number of restrictive affirmative and negative covenants, which limit our ability to incur additional debt; exceed certain limits; pay dividends or distributions; or merge, consolidate or dispose of substantially all of our assets, including all of our intellectual property assets and other material assets securing such convertible notes. A breach of these covenants could result in default, and if such default is not cured or waived, the holders of the indebtedness could, among other things, elect to declare all amounts owed immediately due and payable, which could cause all or a large portion of our available cash flow to be used to pay such amounts and thereby reduce the amount of cash available to pursue our business plans or force us into bankruptcy or liquidation, or, result in the foreclosure on the assets that secure the debt, including all of our intellectual property assets, which would force us to relinquish rights to such assets that we may believe are critical to our business. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations. Any default on our debt will have a material adverse effect on our business, results of operations and financial condition.

Any conversion of our outstanding convertible notes into common stock will dilute the ownership interest of our existing stockholders, including holders who had previously converted their notes.

The conversion of some or all of our convertible notes into shares of our common stock will dilute the ownership interests of our existing stockholders. Any sales in the public market of our common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of our outstanding convertible notes may encourage short selling by market participants because the conversion of convertible notes could depress the market price of our common stock.

The fundamental change purchase feature of our outstanding convertible notes may delay or prevent an otherwise beneficial attempt to take over our company.

The terms of our outstanding convertible notes require us to offer to purchase the notes for cash in the event of a fundamental change. A non-stock takeover of our company may trigger the requirement that we purchase the notes. This feature may have the effect of delaying or preventing a takeover of our company that would otherwise be beneficial to our stockholders.

We currently have no significant product revenues and need to raise additional capital to operate our business, which may not be available on favorable terms, or at all, and which will have a dilutive effect on our stockholders.

To date, we have not generated significant revenues from product sales and only minimal revenues from research and development services and other fees, other than the milestone and other payments we have received in connection with our agreements with Pfizer and Chiesi. For the years ended December 31, 2019, 2018 and 2017, we had net losses from continuing operations of $18.3 million, $26.5 million and $83.4 million, respectively, primarily as a result of expenses incurred through a combination of research and development activities and expenses supporting those activities, which includes share-based compensation expense. Drug development and commercialization is very capital intensive. We fund all of our operations and capital expenditures from the revenues we generate from licensing fees and grants, the net proceeds of equity and debt offerings and other sources. In addition, changes may occur that could consume our existing capital at a faster rate than projected, including, among others, the cost and timing of regulatory approvals, changes in the progress of our research and development efforts and the costs of protecting our intellectual property rights.

We will need to finance our future cash needs through corporate collaboration, licensing or similar arrangements, public or private equity offerings or debt financings. If we are unable to secure additional financing in the future on acceptable terms, or at all, we may be unable to commence or complete planned preclinical and clinical trials or obtain approval of our drug candidates from the FDA and other regulatory authorities. In addition, we may be forced to reduce or discontinue product development or product licensing, reduce or forego sales and marketing efforts and other commercialization activities or forego attractive business opportunities in order to improve our liquidity and to enable us to continue operations which would have a material adverse effect on our business and results of operations. Furthermore, any additional source of financing will likely involve the issuance of our equity securities, which will have a dilutive effect on our stockholders.

We are not currently profitable and delays in achieving profitability, if at all, will have a material adverse effect on our business and results of operations and could negatively impact the value of our common stock.

We may incur losses for the foreseeable future. We expect to continue to incur significant operating expenditures, and we anticipate that our expenses will increase in the foreseeable future as we:

- continue to undertake preclinical development and clinical trials for our current and new drug candidates;
- seek regulatory approvals for our drug candidates; and
- seek to in-license additional technologies.

We also may continue to experience negative cash flow for the foreseeable future as we fund our operating losses and capital expenditures. As a result, we will need to generate significant revenues in order to achieve and maintain profitability. We may not be able to generate these revenues or achieve profitability in the foreseeable future, if at all. Delays in achieving profitability, or subsequent failures to maintain profitability, will have a material adverse effect on our business and results of operations and could negatively impact the value of our common stock.

Risks Related to Investing in our Common Stock

The market price of our common stock may fluctuate significantly.

The market price of our common stock may fluctuate significantly in response to numerous factors, some of which are beyond our control, such as:

- the timing of anticipated marketing approvals for pegunigalsidase alfa;
- our progress in regaining compliance with the continued listing standards of the NYSE American;
- the progress and results of our ongoing studies regarding pegunigalsidase alfa and our other product candidates;
- announcements regarding partnerships or collaborations by us or our competitors;
- restatements of historical financial results and changes in financial forecasts;
- purchases of BioManguinhos alfataliglicerase in Brazil;

- developments concerning intellectual property rights and regulatory approvals;
- the announcement of new products or product enhancements by us or our competitors;
- variations in our and our competitors' results of operations;
- changes in earnings estimates or recommendations by securities analysts;
- developments in the biotechnology industry; and
- general market conditions and other factors, including factors unrelated to our operating performance.

Continued market fluctuations could result in extreme volatility in the price of our common stock, which could cause a decline in the value of our common stock. Price volatility of our common stock may be worse when the trading volume of our common stock is low. We have not paid, and do not expect to pay, any cash dividends on our common stock as any earnings generated from future operations will be used to finance our operations. As a result, investors will not realize any income from an investment in our common stock until and unless their shares are sold at a profit.

Future sales of our common stock could reduce our stock price.

If our stockholders sell substantial amounts of our common stock, including shares of our common stock issuable upon conversion of our outstanding convertible notes, the market price of our common stock could decrease significantly. The perception in the public market that our existing stockholders might sell shares of common stock could also depress the trading price of our common stock. Any such sales of our common stock in the public market may affect the price of our common stock.

A substantial majority of our outstanding shares of our common stock are freely tradable without restriction or further registration under the federal securities laws. In addition, we may sell additional shares of our common stock in the future to raise capital. A substantial number of shares of our common stock are reserved for issuance upon the exercise of stock options and upon conversion of our outstanding convertible notes. At December 31, 2019, there were outstanding options to purchase common stock issued covering approximately 1.1 million shares of our common stock with a weighted average exercise price of approximately $13.34 per share. Also at December 31, 2019, there were approximately 0.7 million shares of common stock available for future for issuance in connection with future grants of incentives under our amended 2006 stock incentive plan and approximately 7.3 million shares of common stock reserved for issuance upon conversion of our outstanding convertible notes. The issuance and sale of substantial amounts of common stock, or the perception that such issuances and sales may occur, could adversely affect the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities.

If securities analysts stop publishing research or reports about us or our business or if they downgrade our common stock, the market price of our common stock could decline.

The market for our common stock relies in part on the research and reports that industry or financial analysts publish about us or our business. We do not control these analysts. If any analyst who covers us downgrades our stock or lowers its future stock price targets or estimates of our operating results, the market price for our common stock could decline rapidly. Furthermore, if any analyst ceases to cover us, we could lose visibility in the market, which in turn could cause the market price of our common stock to decline.

Our common stock is listed to trade on more than one stock exchange, and this may result in price variations.

Our common stock is listed for trade on both the NYSE American and the TASE. Dual-listing may result in price variations between the exchanges due to a number of factors. First, our common stock is traded in U.S. dollars on the NYSE American and in NIS on the TASE. In addition, the exchanges are open for trade at different times of the day and on different days. For example, the TASE opens generally during Israeli business hours, Sunday through Thursday, while the NYSE American opens generally during U.S. business hours, Monday through Friday. The two exchanges also have differing vacation schedules. Differences in the trading schedules, as well as volatility in the exchange rate of the two currencies, among other factors, may result different trading prices for our common stock on the two exchanges. Other external influences may have different effects on the trading price of our common stock on the two exchanges.

Compliance with changing regulation of corporate governance and public disclosure may result in additional expenses, divert management's attention from operating our business which could have a material adverse effect on our business.

The laws, rules, regulations and standards including the rules promulgated by the national securities exchanges, including the NYSE American, to which we are subject are changed and/or amended from time to time. New or changed laws, rules, regulations and standards are subject to varying interpretations in many cases due to their lack of specificity, and as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies, which could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. As a result, our efforts to comply with evolving laws, rules, regulations and standards are likely to continue to result in increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities. Members of our Board of Directors and our executive officers, could face an increased risk of personal liability in connection with the performance of their duties. As a result, we may have difficulty attracting and retaining qualified directors and executive officers, which could have a material adverse effect on our business. If our efforts to comply with new or changed laws, regulations and standards differ from the activities intended by regulatory or governing bodies, we may incur additional expenses to comply with standards set by regulatory authorities or governing bodies which would have a material adverse effect on our business, results of operations and financial condition.

The issuance of preferred stock or additional shares of common stock could adversely affect the rights of our stockholders.

Our Board of Directors is authorized to issue up to 100,000,000 shares of preferred stock without any further action on the part of our stockholders. Our Board of Directors has the authority to fix and determine the voting rights, rights of redemption and other rights and preferences of preferred stock. Currently, we have no shares of preferred stock outstanding.

Our Board of Directors may, at any time, authorize the issuance of a series of preferred stock that would grant to holders the preferred right to our assets upon liquidation, the right to receive dividend payments before dividends are distributed to the holders of common stock and the right to the redemption of the shares, together with a premium, before the redemption of our common stock, which may have a material adverse effect on the rights of the holders of our common stock. In addition, our Board of Directors, without further stockholder approval, may, at any time, issue large blocks of preferred stock. In addition, the ability of our Board of Directors to issue shares of preferred stock without any further action on the part of our stockholders may impede a takeover of our company and may prevent a transaction that is favorable to our stockholders.

Risks Related to the Commercialization of Drug Products

There has been continued non-compliance with the terms and conditions of the Brazil Agreement.

We do not control and may not be able to effectively influence Fiocruz's ability to distribute BioManguinhos alfataliglicerase in Brazil. Any failure by Fiocruz to comply with the purchase requirements of the Brazil Agreement, or any other material breach by Fiocruz of the agreement, may have a material adverse effect on our business, results of operations and financial condition.

We face the risk of lower than anticipated purchases of BioManguinhos alfataliglicerase by the Brazilian MoH. In addition, we may fail to supply the intended amounts on time, if at all. We also cannot accurately predict the amount of revenues we will generate under the Brazil Agreement in future periods, if any. Any failure by the Brazilian MoH to purchase BioManguinhos alfataliglicerase, by us to supply BioManguinhos alfataliglicerase for purchase or by Fiocruz to distribute BioManguinhos alfataliglicerase in Brazil, or the experience of significant delays in any of the foregoing, may have a material adverse effect on our business, results of operations and financial condition.

We have limited experience in selling, marketing or distributing products and limited internal capability to do so.

We currently have very limited sales, marketing or distribution capabilities and no experience in building a sales force and distribution capabilities. Under our arrangements with Pfizer and Chiesi, we have outlicensed the marketing rights to Elelyso and pegunigalsidase alfa except that we retained the marketing rights to BioManguinhos alfataliglicerase in Brazil. We have not licensed the marketing or commercialization rights to any of our other product candidates to any party. The commercialization of a drug product requires that we commit significant financial and managerial resources to develop a marketing and sales force with technical expertise and with supporting distribution capabilities. Factors that may inhibit our efforts to commercialize our products directly and without strategic partners include:

- the inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to an adequate numbers of physicians or to pursuance them to prescribe our products;
- 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 and sustaining an independent sales and marketing organization.

We may not be successful in recruiting or retaining the sales and marketing personnel necessary to sell BioManguinhos alfataliglicerase or any of our products upon approval, if at all, which would have a material adverse effect on our business, results of operations and financial condition.

We may enter into distribution arrangements and marketing alliances for certain products and any failure to successfully identify and implement these arrangements on favorable terms, if at all, may impair our ability to commercialize our product candidates.

We may need to establish a sales force to market one or more of our product candidates, if approved. We do not anticipate having the resources in the foreseeable future to develop global sales and marketing capabilities for all of the products we are developing. We may elect to pursue arrangements regarding the sales and marketing and distribution of one or more of our product candidates, and our future revenues may depend, in part, on our ability to enter into and maintain arrangements with other companies having sales, marketing and distribution capabilities and the ability of such companies to successfully market and sell any such products. Any failure to enter into such arrangements and marketing alliances on favorable terms, if at all, could delay or impair our ability to commercialize our product candidates and could increase our costs of commercialization. Any use of distribution arrangements and marketing alliances to commercialize our product candidates will subject us to a number of risks, including the following:

- we may be required to relinquish important rights to our products or product candidates;
- we may not be able to control the amount and timing of resources that our distributors or collaborators may devote to the commercialization of our product candidates;
- our distributors or collaborators may experience financial difficulties;
- our distributors or collaborators may not devote sufficient time to the marketing and sales of our products; and
- business combinations or significant changes in a collaborator’s business strategy may adversely affect a collaborator’s willingness or ability to complete its obligations under any arrangement.

We may need to enter into additional co-promotion arrangements with third parties where our own sales force is neither well situated nor large enough to achieve maximum penetration in the market. We may not be successful in entering into any co-promotion arrangements, and the terms of any co-promotion arrangements we enter into may not be favorable to us.

If physicians, patients, third party payors and others in the medical community do not accept and use taliglucerase alfa, or any of our other product candidates, if approved, our ability to generate revenue from product sales will be materially impaired.

Physicians and patients, and other healthcare providers, may not accept and use any of our products or any product candidates, if approved, for marketing. Future acceptance and use of any of our products or any product candidates, if approved, will depend upon a number of factors including:

- perceptions by physicians, patients, third party payors and others in the medical community about the safety and effectiveness of taliglucerase alfa or our other drug candidates;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the prevalence and severity of any side effects, including any limitations or warnings contained in our products' approved labeling;
- pharmacological benefits of taliglucerase alfa or our other drug candidates relative to competing products and products under development;
- the efficacy and potential advantages relative to competing products and products under development;
- relative convenience and ease of administration;
- effectiveness of education, marketing and distribution efforts by us and our licensees and distributors, if any;
- publicity concerning taliglucerase alfa or our other drug candidates or competing products and treatments;
- coverage and reimbursement of our products by third party payors; and
- the price for our products and competing products.

A lack of market acceptance of BioManguinhos alfataliglicerase in Brazil, or globally for any of our other products candidates, if approved, would have a material adverse effect on our business, results of operations and financial condition.

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

To date, our development efforts have focused mainly on relatively rare disorders with small patient populations, in particular Gaucher disease and Fabry disease. Currently, most reported estimates of the prevalence of these diseases are based on studies of small subsets of the population of specific geographic areas, which are then extrapolated to estimate the prevalence of the diseases in the broader world population. As new studies are performed, the estimated prevalence of these diseases may change. There can be no assurance that the prevalence of Gaucher disease or Fabry disease in the study populations, particularly in these newer studies, accurately reflect the prevalence of these diseases in the broader world population. If the market opportunities for our current product candidates are smaller than we believe they are, our revenues may be adversely affected and our business may suffer.

Coverage and reimbursement may not be available for one or more of our product candidates, if approved, in all territories which could diminish our sales or affect our ability to sell any such products profitably.

Market acceptance and sales of any one or more of our product candidates, if approved, will depend on coverage and reimbursement policies in the countries in which they are approved for sale. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs they will pay for and establish reimbursement levels. Obtaining reimbursement approval for an approved product from governments and other third party payors is a time consuming and costly process that requires our collaborators or us, as the case may be, to provide supporting scientific, clinical and cost-effectiveness data for the use of our products, if and when approved, to every payor. We may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement or we might need to conduct post-marketing studies in order to demonstrate the cost-effectiveness of approved products, if any, to such payors' satisfaction. Such studies might require our collaborators or us to commit a significant amount of management time and financial and other resources. Even if a payor determines that an approved product is eligible for reimbursement, the payor may impose coverage limitations that preclude payment for some uses that are approved by the FDA or other regulatory authorities. In addition, full reimbursement may not be available for high priced products. Moreover, eligibility for coverage does not imply that any approved product will be reimbursed in all cases or at a rate that allows us to make a profit or even cover our costs. Limited reimbursement amounts may reduce the demand for, or the price of, our product candidates. If coverage and reimbursement are not available or are available only to limited levels, the sales of our products, if approved, may be diminished or we may not be able to sell such products profitably.

We and our collaborating partners may be subject, directly or indirectly, to federal and state healthcare fraud and abuse and false claims laws and regulations. If we or our collaborating partners are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

All marketing activities associated with drug products that are approved for sale in the United States, if any, will be, directly or indirectly through our customers, subject to numerous federal and state laws governing the marketing and promotion of pharmaceutical products in the United States, including, without limitation, the federal Anti-Kickback Law, the federal False Claims Act and HIPAA. These laws may adversely impact, among other things, our proposed sales, marketing and education programs.

The federal Anti-Kickback Law prohibits persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce either the referral of an individual, or the furnishing, recommending, or arranging for a good or service, for which payment may be made under a federal healthcare program, such as the Medicare and Medicaid programs. The term "remuneration" has been broadly interpreted to include anything of value, including for example, gifts, discounts, the furnishing of supplies or equipment, credit arrangements, payments of cash, waivers of co-payments and deductibles, ownership interests and providing anything at less than its fair market value. Despite a series of narrow safe harbors, the federal Anti-Kickback Law prohibits many arrangements and practices that are lawful in businesses outside of the healthcare industry. Penalties for violations of the federal Anti-Kickback Law include criminal penalties and civil sanctions such as fines, imprisonment and possible exclusion from Medicare, Medicaid and other state or federal healthcare programs. Many states have also adopted laws similar to the federal Anti-Kickback Law, some of which apply to the referral of patients for healthcare items or services reimbursed by any source, not only the Medicare and Medicaid programs, and do not contain identical safe harbors.

The federal False Claims Act imposes liability on any person who, among other things, knowingly presents, or causes to be presented, a false or fraudulent claim for payment by a federal healthcare program. In addition, various states have enacted false claims laws analogous to the False Claims Act. Many of these state laws apply where a claim is submitted to any third-party payer and not merely a federal healthcare program. Violations of the federal False Claims Act and the analogous state laws may result in substantial financial penalties, some as much as three times the actual damages sustained by the government.

HIPAA created several new federal crimes, including health care fraud, and false statements relating to health care matters. The health care fraud statute prohibits knowingly and willfully executing a scheme to defraud any health care benefit program, including private third-party payers. The false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for health care benefits, items or services.

We are unable to predict whether we could be subject to actions under any of these or other fraud and abuse laws, or the impact of such actions. Moreover, to the extent that taliglucerase alfa or any of our product candidates, if approved for marketing, will be sold in a foreign country, we and our future collaborators may be subject to similar foreign laws and regulations. If we or any of our future collaborators are found to be in violation of any of the laws described above and other applicable state and federal fraud and abuse laws, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from government healthcare reimbursement programs and the curtailment or restructuring or our operations, any of which could have a material adverse effect on our business, results of operations and financial condition.

Risks Related to Intellectual Property Matters

The intellectual property and assets owned by our subsidiaries are subject to security agreements that secure our payment and other obligations under our 2021 Notes, and our subsidiaries have guaranteed all of those obligations.

In connection with the issuance of our 2021 Notes, we entered into security agreements pursuant to which our subsidiaries provided first priority security interests in all of their assets, which consist of all of our intellectual property and other material assets. The security agreements secure certain payment, indemnification and other obligations under the 2021 Notes. If we were to default on certain of our obligations, or in certain other circumstances generally related to a bankruptcy or insolvency, holders of our outstanding 2021 Notes could seek to foreclose on the collateral under the security agreements to obtain satisfaction our obligations, and our business could be materially and adversely impacted, which would in turn have a material adverse effect on our results of operations and financial condition.

Furthermore, in connection with the issuance of the 2021 Notes, our subsidiaries guaranteed all of our obligations under the indenture governing such convertible notes. If we were to default on our obligations under the indenture, the holders could require our subsidiaries to satisfy all of those obligations under the guarantees.

If we fail to adequately protect or enforce our intellectual property rights or secure rights to third party patents, the value of our intellectual property rights would diminish and our business, competitive position and results of operations would suffer.

As of December 31, 2019, we had 44 pending patent applications of which three are joint pending patent applications with a third party and one is an-in licensed application. However, the filing of a patent application does not mean that we will be issued a patent, or that any patent eventually issued will be as broad as requested in the patent application or sufficient to protect our technology. Any modification required to a current patent application may delay the approval of such patent application which would have a material adverse effect on our business, results of operations and financial condition. In addition, there are a number of factors that could cause our patents, if granted, to become invalid or unenforceable or that could cause our patent applications to not be granted, including known or unknown prior art, deficiencies in the patent application or the lack of originality of the technology. Our competitive position and future revenues will depend in part on our ability and the ability of our licensors and collaborators to obtain and maintain patent protection for our products, methods, processes and other technologies, to preserve our trade secrets, to prevent third parties from infringing on our proprietary rights and to operate without infringing the proprietary rights of third parties. We have filed U.S. and international patent applications for process patents, as well as composition of matter patents, for taliglucerase alfa and our product candidates. However, we cannot predict:

- the degree and range of protection any patents will afford us against competitors and those who infringe upon our patents, including whether third parties will find ways to invalidate or otherwise circumvent our licensed patents;
- if and when patents will issue;
- whether or not others will obtain patents claiming aspects similar to those covered by our licensed patents and patent applications; or
- whether we will need to initiate litigation or administrative proceedings, which may be costly, whether we win or lose.

As of December 31, 2019, we held, or had license rights to, 88 patents. If patent rights covering our products or technologies are not sufficiently broad, they may not provide us with sufficient proprietary protection or competitive advantages against competitors with similar products and technologies. Furthermore, if the USPTO or foreign patent offices issue patents to us or our licensors, others may challenge the patents or circumvent the patents, or the patent office or the courts may invalidate the patents. Thus, any patents we own or license from or to third parties may not provide any protection against our competitors and those who infringe upon our patents.

Furthermore, the life of our patents is limited. The patents we hold, and the patents that may be issued in the future based on patent applications from the patent families, relating to our ProCellEx protein expression system are expected to expire by 2025.

We rely on confidentiality agreements that could be breached and may be difficult to enforce which could have a material adverse effect on our business and competitive position.

Our policy is to enter agreements relating to the non-disclosure of confidential information with third parties, including our contractors, consultants, advisors and research collaborators, as well as agreements that purport to require the disclosure and assignment to us of the rights to the ideas, developments, discoveries and inventions of our employees and consultants while we employ them. However, these agreements can be difficult and costly to enforce. Moreover, to the extent that our contractors, consultants, advisors and research collaborators apply or independently develop intellectual property in connection with any of our projects, disputes may arise as to the proprietary rights to the intellectual property. If a dispute arises, a court may determine that the right belongs to a third party, and enforcement of our rights can be costly and unpredictable. In addition, we rely on trade secrets and proprietary know-how that we seek to protect in part by confidentiality agreements with our employees, contractors, consultants, advisors and others. Despite the protective measures we employ, we still face the risk that:

- these agreements may be breached;
- these agreements may not provide adequate remedies for the applicable type of breach; or
- our trade secrets or proprietary know-how will otherwise become known.

Any breach of our confidentiality agreements or our failure to effectively enforce such agreements may have a material adverse effect on our business and competitive position.

If we infringe the rights of third parties we could be prevented from selling products, forced to pay damages and required to defend against litigation which could result in substantial costs and may have a material adverse effect on our business, results of operations and financial condition.

We have not received to date any claims of infringement by any third parties. However, as our drug candidates progress into clinical trials and commercialization, if at all, our public profile and that of our drug candidates may be raised and generate such claims. Defending against such claims, and occurrence of a judgment adverse to us, could result in unanticipated costs and may have a material adverse effect on our business and competitive position. If our products, methods, processes and other technologies infringe the proprietary rights of other parties, we may incur substantial costs and we may have to:

- obtain licenses, which may not be available on commercially reasonable terms, if at all;
- redesign our products or processes to avoid infringement;
- stop using the subject matter claimed in the patents held by others, which could cause us to lose the use of one or more of our drug candidates;
- defend litigation or administrative proceedings that may be costly whether we win or lose, and which could result in a substantial diversion of management resources; or
- pay damages.

Any costs incurred in connection with such events or the inability to sell our products may have a material adverse effect on our business, results of operations and financial condition.

If we cannot meet requirements under our license agreements, we could lose the rights to our products, which could have a material adverse effect on our business.

We depend on licensing agreements with third parties to maintain the intellectual property rights to certain of our product candidates. Our license agreements require us to make payments and satisfy performance obligations in order to maintain our rights under these agreements. All of these agreements last either throughout the life of the patents that are the subject of the agreements, or with respect to other licensed technology, for a number of years after the first commercial sale of the relevant product.

In addition, we are responsible for the cost of filing and prosecuting certain patent applications and maintaining certain issued patents licensed to us. If we do not meet our obligations under our license agreements in a timely manner, we could lose the rights to our proprietary technology which could have a material adverse effect on our business, results of operations and financial condition.

Risks Relating to Our Operations in Israel

Potential political, economic and military instability in the State of Israel, where the majority of our senior management and our research and development facilities are located, may adversely affect our results of operations.

Our executive office and operations are located in the State of Israel. Accordingly, political, economic and military conditions in Israel directly affect our business. Since the State of Israel was established in 1948, a number of armed conflicts have occurred between Israel and its Arab neighbors. Any hostilities involving Israel or the interruption or curtailment of trade between Israel and its present trading partners, or a significant downturn in the economic or financial condition of Israel, could affect adversely our operations and product development. Although Israel has entered into various agreements with Egypt, Jordan and the Palestinian Authority, there have been times since October 2000 when Israel has experienced an increase in unrest and terrorist activity. The establishment in 2006 of a government in the Gaza Strip by representatives of the Hamas militant group has created additional unrest and uncertainty in the region. Starting in December 2008, for approximately three weeks, Israel engaged in an armed conflict with Hamas in the Gaza Strip. Armed conflicts have taken place between Israel and Hamas in the Gaza Strip in 2008, 2012 and 2014. Our facilities in northern Israel are in range of rockets that were fired from Lebanon into Israel during a 2006 war with the Hizbollah in Lebanon, and suffered minimal damages during one of the rocket attacks. Our insurance policies do not cover us for the damages incurred in connection with these conflicts or for any resulting disruption in our operations. The Israeli government, as a matter of law, provides coverage for the reinstatement value of direct damages that are caused by terrorist attacks or acts of war; however, the government may cease providing such coverage or the coverage might not be enough to cover potential damages. If our facilities are damaged as a result of hostile action, our operations may be materially adversely affected.

In addition to the foregoing, since the end of 2010, numerous acts of protest and civil unrest have taken place in several countries in the Middle East and North Africa, many of which involved significant violence. Civil unrest in Egypt, which borders Israel, has resulted in significant changes to the country's government. There is currently a civil war in Syria, also bordering Israel, and Israel has been hit by rockets and mortars originating from Syria. The ultimate effect of these developments on the political and security situation in the Middle East and on Israel's position within the region is not clear at this time.

Our operations may be disrupted by the obligations of our personnel to perform military service which could have a material adverse effect on our business.

Many of our male employees in Israel, including members of senior management, are obligated to perform up to one month (in some cases more) of annual military reserve duty until they reach the age of 45 and, in the event of a military conflict, could be called to active duty. Our operations could be disrupted by the absence of a significant number of our employees related to military service or the absence for extended periods of military service of one or more of our key employees. A disruption could have a material adverse effect on our business, results of operations and financial condition.

Because a certain portion of our expenses is incurred in New Israeli Shekels, our results of operations may be seriously harmed by currency fluctuations and inflation.

We report our financial statements in U.S. dollars, our functional currency. Although most of our expenses are incurred in U.S. dollars, we pay a portion of our expenses in New Israeli Shekels, or NIS, and as a result, we are exposed to risk to the extent that the inflation rate in Israel exceeds the rate of devaluation of the NIS in relation to the U.S. dollar or if the timing of these devaluations lags behind inflation in Israel. In that event, the U.S. dollar cost of our operations in Israel will increase and our U.S. dollar-measured results of operations will be adversely affected. To the extent that the value of the NIS increases against the dollar, our expenses on a dollar cost basis increase. Our operations also could be adversely affected if we are unable to guard against currency fluctuations in the future. To date, we have not engaged in hedging transactions. In the future, we may enter into currency hedging transactions to decrease the risk of financial exposure from fluctuations in the exchange rate of the U.S. dollar against the NIS. These measures, however, may not adequately protect us from material adverse effects.

The tax benefits available to us require that we meet several conditions and may be terminated or reduced in the future, which would increase our taxes.

We are able to take advantage of tax exemptions and reductions resulting from the "Approved Enterprise" status of our facilities in Israel. To remain eligible for these tax benefits, we must continue to meet certain conditions, including making specified investments in property and equipment, and financing at least 30% of such investments with share capital. If we fail to meet these conditions in the future, the tax benefits would be canceled and we may be required to refund any tax benefits we already have enjoyed. These tax benefits are subject to investment policy by the Investment Center and may not be continued in the future at their current levels or at any level. In recent years the Israeli government has reduced the benefits available and has indicated that it may further reduce or eliminate some of these benefits in the future. The termination or reduction of these tax benefits or our inability to qualify for additional "Approved Enterprise" approvals may increase our tax expenses in the future, which would reduce our expected profits and adversely affect our business and results of operations. Additionally, if we increase our activities outside of Israel, for example, by future acquisitions, such increased activities generally may not be eligible for inclusion in Israeli tax benefit programs.

The Israeli government grants we have received for certain research and development expenditures restrict our ability to manufacture products and transfer technologies outside of Israel and require us to satisfy specified conditions. If we fail to satisfy these conditions, we may be required to refund grants previously received together with interest and penalties which could have a material adverse effect on our business and results of operations.

Our research and development efforts have been financed, in part, through grants that we have received from NATI. We, therefore, must comply with the requirements of the Research Law. Under the Research Law we are prohibited from manufacturing products developed using these grants outside of the State of Israel without special approvals, although the Research Law does enable companies to seek prior approval for conducting manufacturing activities outside of Israel without being subject to increased royalties. We may not receive the required approvals for any proposed transfer of manufacturing activities. Even if we do receive approval to manufacture products developed with government grants outside of Israel, we may be required to pay an increased total amount of royalties (possibly up to 300% of the grant amounts plus interest), depending on the manufacturing volume that is performed outside of Israel, as well as at a possibly increased royalty rate. This restriction may impair our ability to outsource manufacturing or engage in similar arrangements for those products or technologies.

Additionally, under the Research Law, Protalix Ltd. is prohibited from transferring NATI-financed technologies and related intellectual property rights outside of the State of Israel, except under limited circumstances and only with the approval of NATI Council or the Research Committee. Protalix Ltd. may not receive the required approvals for any proposed transfer and, if received, Protalix Ltd. may be required to pay NATI a portion of the consideration that it receives upon any sale of such technology by a non-Israeli entity. The scope of the support received, the royalties that Protalix Ltd. has already paid to NATI, the amount of time that has elapsed between the date on which the know-how was transferred and the date on which NATI grants were received and the sale price and the form of transaction will be taken into account in order to calculate the amount of the payment to NATI. Approval of the transfer of technology to residents of the State of Israel is required, and may be granted in specific circumstances only if the recipient abides by the provisions of applicable laws, including the restrictions on the transfer of know-how and the obligation to pay royalties. No assurance can be made that approval to any such transfer, if requested, will be granted.

These restrictions may impair our ability to sell our technology assets or to outsource manufacturing outside of Israel. The restrictions will continue to apply for a certain period of time even after we have repaid the full amount of royalties payable for the grants. For the years ended December 31, 2017, 2018 and 2019, we recorded grants totaling $3.3 million, $2.2 million and $0.1 million from NATI, respectively. The grants represent 10.4%, 6.2% and 0.2%, respectively, of our gross research and development expenditures for the years ended December 31, 2017, 2018 and 2019. If we fail to satisfy the conditions of the Research Law, we may be required to refund certain grants previously received together with interest and penalties, and may become subject to criminal charges, any of which could have a material adverse effect on our business, results of operations and financial condition.

Investors may have difficulties enforcing a U.S. judgment, including judgments based upon the civil liability provisions of the U.S. federal securities laws against us, our executive officers and most of our directors or asserting U.S. securities laws claims in Israel.

Most of our directors and all of our executive officers are residents of Israel, and accordingly, most of their assets and our assets are located outside the United States. Service of process upon our non-U.S. resident directors and officers and enforcement of judgments obtained in the United States against us, some of our directors and executive officers may be difficult to obtain within the United States. We have been informed by our legal counsel in Israel that investors may find it difficult to assert claims under U.S. securities laws in original actions instituted in Israel or obtain a judgment based on the civil liability provisions of U.S. federal securities laws against us, our officers and our directors. Israeli courts may refuse to hear a claim based on a violation of U.S. securities laws against us or our officers and directors because Israel is not the most appropriate forum to bring such a claim. In addition, even if an Israeli court agrees to hear a claim, it may determine that Israeli law and not U.S. law is applicable to the claim. If U.S. law is found to be applicable, the content of applicable U.S. law must be proved as a fact which can be a time-consuming and costly process. Certain matters of procedure will also be governed by Israeli law. There is little binding case law in Israel addressing the matters described above.

Israeli courts might not enforce judgments rendered outside Israel which may make it difficult to collect on judgments rendered against us. Subject to certain time limitations, an Israeli court may declare a foreign civil judgment enforceable only if it finds that:

- the judgment was rendered by a court which was, according to the laws of the state of the court, competent to render the judgment;
- the judgment may no longer be appealed;
- the obligation imposed by the judgment is enforceable according to the rules relating to the enforceability of judgments in Israel and the substance of the judgment is not contrary to public policy; and
- the judgment is executory in the state in which it was given.

Even if these conditions are satisfied, an Israeli court will not enforce a foreign judgment if it was given in a state whose laws do not provide for the enforcement of judgments of Israeli courts (subject to exceptional cases) or if its enforcement is likely to prejudice the sovereignty or security of the State of Israel. An Israeli court also will not declare a foreign judgment enforceable if:

- the judgment was obtained by fraud;
- there is a finding of lack of due process;
- the judgment was rendered by a court not competent to render it according to the laws of private international law in Israel;
- the judgment is at variance with another judgment that was given in the same matter between the same parties and that is still valid; or
- at the time the action was brought in the foreign court, a suit in the same matter and between the same parties was pending before a court or tribunal in Israel.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our headquarters, including manufacturing facility, executive offices and others, are located in Carmiel, Israel. The facilities currently contain approximately 12,900 sq/ft of manufacturing space and 3,800 sq/ft for a pilot plant, 8,900 sq/ft for offsite warehouse space and approximately 40,000 sq/ft of laboratories, front warehouse and office space, and are leased at a rate of approximately $66,000 per month. In addition, we are entitled to use an additional 12,900 sq/ft in the same facility, which we intend to utilize in connection with an anticipated expansion of our manufacturing facilities. Our facilities are equipped with the requisite laboratory services required to conduct our business, and we believe that the existing facilities are adequate to meet our needs for the foreseeable future. Our original lease for the facility was in effect until 2016, at which time we extended the term until 2021. We retain two additional options to extend the term for a five-year period, for an aggregate of 10 additional years. Upon the exercise of each remaining option to extend the term of the lease, if any, the then current base rent will be increased by 10%.

Item 3. Legal Proceedings

We are not involved in any material legal proceedings.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Our common stock is traded on the NYSE American under the symbol "PLX." Our common stock is also listed on the TASE under the symbol "PLX." As of March 1, 2020, there were approximately 72 holders of record of our common stock. A substantially greater number of holders of our common stock are "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

Item 6. Selected Financial Data

The selected consolidated financial data below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K. The selected consolidated statements of operations data for the years ended December 31, 2019, 2018 and 2017 and the selected consolidated balance sheet data as of December 31, 2019 and 2018, are derived from the audited consolidated financial statements included elsewhere in this Annual Report. The statement of operations data for the years ended December 31, 2016 and 2015 and the balance sheet data as of December 31, 2017, 2016 and 2015 are derived from audited financial statements not included in this Annual Report. The historical results presented below are not necessarily indicative of future results. During 2019, we adopted Accounting Standard Codification topic 842 (Leases) on a modified retrospective basis. Consequently, financial information was not updated and the disclosures required under the new standard are not provided for dates and periods before January 1, 2019.

	Year Ended December 31,				
	2015	**2016**	**2017**	**2018**	**2019**
	(in thousands, except per share amounts)				
Consolidated Statement of Operations Data:					
Revenues from selling goods	$ 4,364	$ 9,199	$ 19,242	$ 8,978	$ 15,866
Revenues from license and R&D services			1,836	25,262	38,827
Cost of goods sold	730	8,398	15,231	9,302	10,895
Research and development expenses, net	20,025	24,608	28,834	33,330	44,616
Selling, general and administrative expenses	7,279	9,356	11,530	10,916	9,899
Financial income (expenses), net	(3,612)	3,987	(48,923)	(7,149)	(7,559)
Loss from continuing operations	$ 27,282	$ 29,176	$ 83,440	$ 26,457	$ 18,276
(Loss) income from discontinued operations	85,319	(189)			
Net (loss) income for the year	58,037	(29,365)	(83,440)	(26,457)	(18,276)
Net (loss) income per share of common stock, basic and diluted:					
Loss from continuing operations	$ (2.87)	$ (2.90)	$ (6.37)	$ (1.80)	$ (1.23)
(Loss) income from discontinued operations	8.99	(0.00)			
Net (loss) income per share of common stock	6.12	(2.90)	(6.37)	(1.80)	(1.23)
Weighted average number of shares of common stock used in computing net loss per share of common stock	9,492,239	10,138,770	13,108,596	14,713,518	14,838,213
Consolidated Balance Sheet Data:					
Cash and cash equivalents	$ 76,374	$ 63,281	$ 51,163	$ 37,808	$ 17,792
All other assets	20,879	18,966	21,051	23,323	27,600
Total assets	97,253	82,247	72,214	61,131	45,392
Current liabilities	11,235	66,212	22,752	25,353	40,175
Long term convertible notes	67,796	19,343	46,267	47,966	50,957
Total liabilities	86,380	92,204	101,671	114,012	115,714
Total stockholders' equity (capital deficiency)	10,873	(9,957)	(29,457)	(52,881)	(70,322)

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 our consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K. Some of the information contained in this discussion and analysis, particularly with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. You should read "Risk Factors" in Item 1A of this Annual Report on Form 10-K for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a biopharmaceutical company focused on the development and commercialization of recombinant therapeutic proteins primarily based on our proprietary ProCellEx® protein expression system. We developed our first commercial drug product, Elelyso®, using our ProCellEx system and we are now focused on utilizing the system to develop a pipeline of proprietary, clinically superior versions of complex recombinant therapeutic proteins that primarily target large, established pharmaceutical markets and that in most cases rely upon known biological mechanisms of action. With our experience to date, we believe ProCellEx will enable us to develop additional proprietary recombinant proteins that are therapeutically superior to existing recombinant proteins currently marketed for the same indications, including applying the unique properties of our ProCellEx system for the oral delivery of therapeutic proteins.

On March 12, 2020, we entered into the Purchase Agreements with the Purchasers. The Purchasers include certain existing and new institutional and other accredited investors. Pursuant to the Purchase Agreements, we, in a private placement in reliance on the exemption from the registration requirements of the Securities Act, agreed to issue and sell to the Purchasers an aggregate of approximately 17.6 million unregistered shares of our common stock at a price per share of $2.485 or, gross aggregate proceeds equal to approximately $43.7 million. Each share issued was accompanied by a warrant to purchase one share of our common stock, or the Warrant Shares, at an exercise price equal to $2.36. We have agreed to file a registration statement with the Commission to register for resale the shares issued in the private placement, including the Warrant Shares.

Pegunigalsidase alfa (PRX-102), our proprietary plant cell culture expressed enzyme in development for the treatment of Fabry disease, is our most advanced product candidate. Our PRX-102 phase III clinical program of PRX-102 for the treatment of Fabry disease includes three separate studies: the *BALANCE, BRIDGE and BRIGHT* studies. The studies are designed to evaluate the potential superiority of PRX-102 over current therapies, demonstrate the potential for improved efficacy and better quality of life for patients with Fabry disease and demonstrate the safety of our drug/therapy. We are also evaluating the potential of a once-monthly treatment regimen with a higher dose of PRX-102. Enrollment has been completed in each of the *BALANCE*, *BRIDGE* and *BRIGHT* clinical studies.

On February 5, 2019, we announced preliminary pharmacokinetic (PK) data from our phase III *BRIGHT* study. Data showed PRX-102 to be well-tolerated; and infusion of 2 mg/kg PRX-102 administered every 4 weeks resulted in the presence of continuous active enzyme throughout the entire infusion interval.

On October 17, 2019, we announced positive 12-month interim data from our *BRIDGE* study. Data from the first 16 of the 22 adult patients (9 males and 7 females) demonstrated a mean improvement in kidney function in both male and female patients when switched from agalsidase alfa (Replagal) to PRX-102.

We anticipate that, in coordination with Chiesi, a BLA will be filed with the FDA under an Accelerated Approval Pathway based on the completed phase I/II clinical trials of PRX-102, and the safety and efficacy data from the ongoing *BRIDGE* study. In October 2019, we met, together with Chiesi, with the FDA to discuss key information on PRX-102 to be included in the proposed BLA filing and reached alignment with the FDA on the Accelerated Approval pathway for PRX-102.

On October 19, 2017, Protalix Ltd., our wholly-owned subsidiary, and Chiesi entered into the Chiesi Ex-US Agreement pursuant to which Chiesi was granted an exclusive license for all markets outside of the United States to commercialize PRX-102. Under the terms and conditions of the Chiesi Ex-US Agreement, Protalix Ltd. retained the right to commercialize PRX-102 in the United States. Under the Chiesi Ex-US Agreement, Chiesi made an upfront payment to Protalix Ltd. of $25.0 million in connection with the execution of the agreement and Protalix Ltd. is entitled to additional payments of up to $25.0 million in development costs, capped at $10.0 million per year. Protalix Ltd. is also eligible to receive an additional up to $320.0 million, in the aggregate, in regulatory and commercial milestone payments. Chiesi is required to make tiered payments of 15% to 35% of its net sales, depending on the amount of annual sales, as consideration for the supply of PRX-102.

On July 23, 2018, Protalix Ltd. entered into the Chiesi U.S. Agreement. Pursuant to the agreement, Chiesi was granted an exclusive license to commercialize PRX-102 in the United States. Protalix Ltd. received an upfront, non-refundable, non-creditable payment of $25.0 million from Chiesi and was entitled to additional payments of up to a maximum of $20.0 million to cover development costs for PRX-102, subject to a maximum of $7.5 million per year. Protalix Ltd. is also eligible to receive an additional up to a maximum of $760.0 million, in the aggregate, in regulatory and commercial milestone payments. Chiesi will also make tiered payments of 15% to 40% of its net sales under the Chiesi U.S. Agreement to Protalix Ltd., depending on the amount of annual sales, subject to certain terms and conditions, as consideration for product supply. Protalix Ltd. agreed to manufacture all of the PRX-102 needed for all purposes under both agreements, subject to certain exceptions, and Chiesi will purchase PRX-102 from Protalix Ltd., subject to certain terms and conditions.

On May 1, 2012, the FDA approved for sale our first commercial product, taliglucerase alfa for injection, an ERT for the long-term treatment of adult patients with a confirmed diagnosis of type 1 Gaucher disease. Subsequently, taliglucerase alfa was approved for marketing by the regulatory authorities of other countries. Taliglucerase alfa is marketed under the name BioManguinhos alfataliglicerase in Brazil and certain other Latin American countries, and under the name Elelyso in other territories.

Since its approval by the FDA, taliglucerase alfa has been marketed by Pfizer, as provided in the Pfizer Agreement. In October 2015, we entered into the Amended Pfizer Agreement which amends and restates the Pfizer Agreement in its entirety. Pursuant to the Amended Pfizer Agreement, we sold to Pfizer our share in the collaboration created under the initial Pfizer Agreement for the commercialization of Elelyso in exchange for a cash payment equal to $36.0 million. Under the Amended Pfizer Agreement, Pfizer has an exclusive license to commercialize Elelyso worldwide other than Brazil; we maintain full rights to BioManguinhos alfataliglicerase in Brazil. We will continue to manufacture drug substance for Pfizer, subject to certain terms and conditions. Under the Amended Pfizer Agreement, Pfizer is responsible for 100% of expenses, and entitled to all revenues globally for Elelyso, excluding Brazil, where we are responsible for all expenses and retain all revenues.

On June 18, 2013, we entered into the Brazil Agreement with Fiocruz, an arm of the Brazilian MoH, for BioManguinhos alfataliglicerase. Fiocruz's purchases of BioManguinhos alfataliglicerase to date have been significantly below certain agreed-upon purchase milestones. We are continuing to supply BioManguinhos alfataliglicerase to Fiocruz under the Brazil Agreement, and patients continue to be treated with BioManguinhos alfataliglicerase in Brazil. We are discussing with Fiocruz potential actions that Fiocruz may take to comply with its purchase obligations and, based on such discussions, we will determine what we believe to be the course of action that is in our best interest.

We are developing an innovative product pipeline using our ProCellEx protein expression system. Our product pipeline currently includes, among other candidates:

(1) pegunigalsidase alfa, or PRX-102, a therapeutic protein candidate for the treatment of Fabry disease, a rare, genetic lysosomal disorder in humans, currently in ongoing phase III clinical trials.

(2) OPRX-106, our oral anti-TNF product candidate which is being developed as an orally-delivered anti-inflammatory treatment using plant cells as a natural capsule for the expressed protein. We released final data generated in our phase IIa clinical trial of OPRX-106 for the treatment of ulcerative colitis in March 2018. Additional data was released in June 2018.

(3) alidornase alfa, or PRX-110, a plant cell expressed recombinant human DNase I chemically modified to resist inhibition by actin, thus enhancing enzymatic activity. We have completed a phase IIa efficacy and safety study of alidornase alfa for the treatment of Cystic Fibrosis.

(4) PRX-115, our plant cell-expressed recombinant PEGylated Uricase (Urate Oxidase) – a chemically modified enzyme to treat Gout.

We have licensed the rights to commercialize taliglucerase alfa worldwide (other than Brazil) to Pfizer, and the rights to commercialize pegunigalsidase alfa worldwide to Chiesi. Otherwise, we hold the worldwide commercialization rights to our other proprietary development candidates. In addition, we continuously evaluate potential strategic marketing partnerships as well as collaboration programs with biotechnology and pharmaceutical companies and academic research institutes.

Critical Accounting Policies

Our significant accounting policies are more fully described in note 1 to our consolidated financial statements appearing at the end of this Annual Report on Form 10-K. We believe that the accounting policies below are critical for one to fully understand and evaluate our financial condition and results of operations.

The discussion and analysis of our financial condition and results of operations is based on our financial statements, which we prepared in accordance with U.S. generally accepted accounting principles. 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 revenues and expenses during the reporting periods. On an ongoing basis, we evaluate such estimates and judgments, including those described in greater detail below. We base our estimates on 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.

Functional Currency

The currency of the primary economic environment in which our operations are conducted is the U.S. dollar. All of our revenues are derived in dollars. In addition, most of our expenses and capital expenditures are incurred in dollars, and the major source of our financing has been provided in dollars.

Revenues

Our primary sources of revenues include our sales of BioManguinhos alfataliglicerase in Brazil and of drug substance to Pfizer under our Amended Pfizer Agreement. We recognize revenue from the Amended Pfizer at a point in time when control over the product is transferred to customers (upon delivery).

We also generate revenues from the Chiesi agreements. According to accounting standard ASC 606, Revenue from Contracts with Customers, and all the related amendments, or ASC 606, a performance obligation is a promise to provide a distinct good or service or a series of distinct goods or services. Goods and services that are not distinct are bundled with other goods or services in the contract until a bundle of goods or services that is distinct is created. A good or service promised to a customer is distinct if the customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer and the entity’s promise to transfer the good or service to the customer is separately identifiable from other promises in the contract.

We have identified two performance obligations in the Chiesi agreements as follows: (1) the license and research and development services and (2) contingent performance obligation regarding future manufacturing.

We determined that the license together with the research and development services should be combined into single performance obligation since Chiesi cannot benefit from the license without the research and development services. The research and development services are highly specialized and are dependent on the supply of the drug.

The future manufacturing is contingent on regulatory approvals of the drug and we deem these services to be separately identifiable from other performance obligations in the contract. Manufacturing services post-regulatory approval are not interdependent or interrelated with the license and research and development services.

The transaction price was comprised of fixed consideration and variable consideration (capped research and development reimbursements). Under ASC 606, the consideration to which we would be entitled upon the achievement of contractual milestones, which are contingent upon the occurrence of future events, are a form of variable consideration. We estimate variable consideration using the most likely method. Amounts included in the transaction price are recognized only when it is probable that a significant reversal of cumulative revenues will not occur. Prior to recognizing revenue from variable consideration, we use significant judgment to determine the probability of a significant reversal of such revenue.

Since the customer benefits from the research and development services as the entity performs the service, revenue from granting the license and the research and development services is recognized over time using the cost-to-cost method. We used significant judgment when we determined the costs expected to be incurred upon satisfying the identified performance obligation.

Revenue from additional research and development services ordered by Chiesi is recognized over time using the cost-to-cost method.

We accounted for the Chiesi US agreement as a modification of the Chiesi Ex-US agreement. As such, we recorded revenue through a cumulative catch-up adjustment.

Our revenue recognition accounting policy prior to January 1, 2019, was materially the same.

Research and Development Expense

We expect our research and development expense to remain our primary expense in the near future as we continue to develop our product candidates. Research and development expense consists of:

- internal costs associated with research and development activities;
- payments made to third party contract research organizations, investigative/clinical sites and consultants;
- manufacturing development costs;
- personnel-related expenses, including salaries, benefits, travel, and related costs for the personnel involved in research and development;
- activities relating to the advancement of product candidates through preclinical studies and clinical trials; and
- facilities and other allocated expenses, which include direct and allocated expenses for rent and maintenance of facilities, as well as laboratory and other supplies.

The following table identifies our current major research and development projects:

Project	**Status**	**Expected Near Term Milestones**
PRX-102 – pegunigalsidase alfa	Phase III clinical trials fully-enrolled and ongoing	BLA submission under Accelerated Approval pathway, disclosure of final results of *BRIDGE* and *BRIGHT* studies
OPRX-106 – Oral anti-TNF	Phase IIa completed	Evaluate potential partnership for next-step clinical development
PRX-110 – alidornase alfa	Phase IIa completed	Evaluate potential partnership
PRX-115 – Uricase	Preclinical	

We anticipate incurring increasing costs in connection with the continued development of all of the product candidates in our pipeline. Our internal resources, employees and infrastructure are not tied to any individual research project and are typically deployed across all of our projects. We currently do not record and maintain research and development costs per project.

The costs and expenses of our projects are partially funded by grants we have received from NATI. Each grant is deducted from the related research and development expenses as the costs are incurred. For additional information regarding the grant process, see “Business—Israeli Government Programs—Encouragement of Industrial Research, Development and Technology Innovation, 1984” in Item 1 of this Annual Report. There can be no assurance that we will continue to receive grants from NATI in amounts sufficient for our operations, if at all. In addition, under the two Chiesi Agreements, Protalix Ltd. is entitled to payments of up to $45.0 million in the aggregate to cover development costs for pegunigalsidase alfa, capped at $17.5 million per year. As of December 31, 2019, we have received, or are entitled to receive, reimbursements equal to $40.1 million from Chiesi and additional payments equal to approximately $9.1 million in connection with the performance of extension studies.

At this time, due to the inherently unpredictable nature of preclinical and clinical development processes and given the early stage of our preclinical product development programs, we are unable to estimate with any certainty the costs we will incur in the continued development of the product candidates in our pipeline for potential commercialization. Clinical development timelines, the probability of success and development costs can differ materially from expectations. The current focus of our product development efforts are on pegunigalsidase alfa. Our future research and development expenses for pegunigalsidase alfa and the other product candidates will depend on the clinical success of each product candidate, as well as ongoing assessments of each product candidate's commercial potential. In addition, we cannot forecast with any degree of certainty which product candidates may be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements. See "Risk Factors—If we are unable to develop and commercialize our product candidates, our business will be adversely affected" and "—We may not obtain the necessary U.S., EMA or other worldwide regulatory approvals to commercialize our drug candidates in a timely manner, if at all, which would have a material adverse effect on our business, results of operations and financial condition."

We expect our research and development expenses to continue to be our primary expense in the future as we continue the advancement of our clinical trials and preclinical product development programs for our product candidates, particularly with respect to the development of pegunigalsidase alfa. The lengthy process of completing clinical trials and seeking regulatory approvals for our product candidates requires expenditure of substantial resources. Any failure or delay in completing clinical trials, or in obtaining regulatory approvals, could cause a delay in generating product revenue and cause our research and development expense to increase and, in turn, have a material adverse effect on our operations. Due to the factors set forth above, we are not able to estimate with any certainty when we would recognize any net cash inflows from our projects. See "Risk Factors—Clinical trials are very expensive, time-consuming and difficult to design and implement and may result in unforeseen costs which may have a material adverse effect on our business, results of operations and financial condition."

Share-Based Compensation

The discussion below relates to our share-based compensation.

In accordance with the guidance, we record the benefit of any grant to a non-employee and remeasure the benefit in any future vesting period for the unvested portion of the grants, as applicable. In addition, we use the straight-line accounting method for recording the benefit of the entire grant, unlike the accelerated method we use to record grants made to employees.

We measure share-based compensation cost for all share-based awards at the fair value on the grant date and recognition of share-based compensation over the service period for awards that we expect will vest. The fair value of stock options is determined based on the number of shares granted and the price of our ordinary shares, and calculated based on the Black-Scholes valuation model. We recognize such value as expense over the service period using the accelerated method.

The guidance requires companies to estimate the expected term of the option rather than simply using the contractual term of an option. Because of lack of sufficient data on past option exercises by employees, the expected term of the options could not be based on historic exercise patterns. Accordingly, we adopted the simplified method, according to which companies may calculate the expected term as the average between the vesting date and the expiration date, assuming the option was granted as a "plain vanilla" option.

In performing the valuation, we assumed an expected 0% dividend yield in the previous years and in the next years. We do not have a dividend policy and given the lack of profitability, dividends are not expected in the foreseeable future, if at all. The guidance stipulates a number of factors that should be considered when estimating the expected volatility, including the implied volatility of traded options, historical volatility and the period that the shares of the company are being publicly traded.

The risk-free interest rate used in the valuation of the options is based on the implied yield of U.S. federal reserve zero–coupon government bonds. The remaining term of the bonds used for each valuation was equal to the expected term of the grant. This methodology has been applied to all grants valued by us. The guidance requires the use of a risk–free interest rate based on the implied yield currently available on zero–coupon government issues of the country in whose currency the exercise price is expressed, with a remaining term equal to the expected life of the option being valued. This requirement has been applied for all grants valued as part of this report.

Convertible Notes

All outstanding convertible notes are accounted for using the guidance set forth in the Financial Accounting Standards Board, or FASB, Accounting Standards Codification (ASC) 815 requiring that we determine whether the embedded conversion option must be separated and accounted for separately. ASC 470-20 regarding debt with conversion and other options requires the issuer of a convertible debt instrument that may be settled in cash upon conversion to separately account for the liability (debt) and equity (conversion option) components of the instrument in a manner that reflects the issuer's nonconvertible debt borrowing rate. We accounted for the 4.5% convertible notes, which we refer to as the 2018 Notes, as liability, on an aggregated basis, in their entirety.

Our 2021 Notes were accounted for partially as liability and equity components of the instrument and partially as a debt host contract with an embedded derivative resulting from the conversion feature. During the year ended December 31, 2017, the embedded derivative was reclassified to additional paid in capital.

Issuance costs regarding the issuance of the 2021 Notes are amortized using the effective interest rate.

During the year ended December 31, 2018, note holders converted $1.15 million aggregate principal amount of the 2021 Notes into a total of 153,742 shares of Common Stock and cash payments of approximately $15,887, in the aggregate. In addition, in June 2018, we exchanged $3.42 million aggregate principal amount of our outstanding 4.50% convertible promissory notes due 2018, which we refer to as the 2018 Notes, for 261,363 shares of common stock and approximately $2.23 million in cash and delivered the necessary funds under the indenture governing the 2018 Notes, which was $2.53 million. On September 15, 2018, the 2018 Notes matured and have been paid in full. There were no note conversions during the year ended December 31, 2019.

As of December 31, 2019, a total of $57.9 million aggregate principal amount of the 2021 Notes were outstanding. In addition, as of December 31, 2019, none of the 2018 Notes were outstanding.

Year ended December 31, 2019 Compared to the Year Ended December 31, 2018

Revenues from Selling Goods

We recorded revenues of $15.9 million for the year ended December 31, 2019, an increase of $6.9 million, or 77%, compared to revenues of $9.0 million for the year ended December 31, 2018. The increase resulted primarily from an increase of $5.5 million in sales of drug product to Brazil as well as an increase of $1.4 million in sales of drug substance to Pfizer.

Revenues from License and R&D services

We recorded revenues from license and R&D services of $38.8 million for the year ended December 31, 2019, an increase of $13.5 million compared to revenues of $25.3 million for the year ended December 31, 2018. Revenues from the license agreements represent the revenues we recognized in connection with the Chiesi Agreements. The increase is primarily due to revenues recognized in connection with additional studies performed and with revenues recognized in connection with an anticipated milestone payment.

Cost of Goods Sold

Cost of goods sold was $10.9 million for the year ended December 31, 2019, an increase of $1.6 million or 17%, compared to cost of goods sold of $9.3 million for the year ended December 31, 2018. The increase is primarily due to an increase in sales of goods.

Research and Development Expenses, Net

Research and development expenses, net were $44.6 million for the year ended December 31, 2019, an increase of $11.3 million, or 34% from $33.3 million for the year ended December 31, 2018. The increase resulted primarily from an increase of $9.1 million in clinical trial related costs as well as a decrease of $2.1 million in grants received from the Israeli Innovation Authority.

We expect research and development expenses to continue to be our primary expense.

Selling, General and Administrative Expenses

Selling, general and administrative expenses were $9.9 million for the year ended December 31, 2019, a decrease of $1.0 million, or 9%, from $10.9 million for the year ended December 31, 2018. The decrease resulted primarily due to costs related to the Chiesi US Agreement we entered into in 2018, which were not incurred in 2019.

Financial Expenses and Income, Net

Financial expense, net was $7.6 million for the year ended December 31, 2019, an increase of $0.5 million, or 7%, compared to financial expenses of $7.1 million for the year ended December 31, 2018. Financial expenses are comprised primarily of interest expense on our outstanding convertible notes equal to $4.3 million and $4.6 million for the years ended December 31, 2019 and 2018, respectively. The increase is primarily due to an increase in costs related to amortization of debt issuance costs and debt discount of $0.4 million, as well as to exchange rate differences.

Year ended December 31, 2018 Compared to the Year Ended December 31, 2017

Revenues from Selling Goods

We recorded revenues of $9.0 million for the year ended December 31, 2018, a decrease of approximately $10.2 million, or 53%, compared to revenues of $19.2 million for the year ended December 31, 2017. Revenues include $3.7 million of products sold in Brazil and $5.3 million of drug substance sold to Pfizer. The decrease resulted from a decrease of $6.9 million in sales of drug substance to Pfizer and $3.4 million in sales of drug product to Brazil.

Revenues from License and R&D services

We recorded revenues of $25.3 million for the year ended December 31, 2018, an increase of $23.5 million compared to revenues of $1.8 million for the year ended December 31, 2017. Revenues from the license agreements represent the revenues we recognized in connection with the Chiesi agreements including a cumulative catch-up adjustment in the third quarter in the amount of $6.2 million.

Cost of Goods Sold

Cost of goods sold was $9.3 million for the year ended December 31, 2018, a decrease of $5.9 million, or 39%, compared to the cost of revenues of $15.2 million for the year ended December 31, 2017.

Research and Development Expenses

Research and development expenses were $35.5 million for the year ended December 31, 2018, an increase of $3.3 million, or 10% from $32.2 million for the year ended December 31, 2017. The increase resulted primarily from an increase in clinical trial activity during 2018.

We expect research and development expenses to continue to be our primary expense as we enter into a more advanced stage of preclinical and clinical trials for certain of our product candidates, primarily with respect to pegunigalsidase alfa.

Selling, General and Administrative Expenses

Selling, general and administrative expenses were $10.9 million for the year ended December 31, 2018, a decrease of $0.6 million, or 5%, from $11.5 million for the year ended December 31, 2017. The decrease resulted primarily from a decrease in sales expenses.

Financial Expenses and Income

Financial expense was $7.1 million for the year ended December 31, 2018, compared to financial expenses of $48.9 million for the year ended December 31, 2017. Financial expenses for the year ended December 31, 2017 included a charge of $38.1 million as a result of the re-measurement of the fair value of the 2021 Notes embedded derivative. In addition, financial expenses are comprised primarily from interest expense on our outstanding convertible notes.

Liquidity and Capital Resources

Our sources of liquidity include our cash balances. At December 31, 2019, we had $17.8 million in cash and cash equivalents. We have primarily financed our operations through equity and debt financings, business collaborations, and grant funding. In the fourth quarter of 2017, Chiesi made a payment to Protalix Ltd. of $25.0 million in connection with the execution of the Chiesi Ex-US Agreement and in the third quarter of 2018, Chiesi made a payment to Protalix Ltd. of $25.0 million in connection with the execution of the Chiesi US Agreement.

During the year ended December 31, 2019, we received total proceeds of approximately $30.2 million from expense reimbursements in relation to our collaboration with Chiesi and, during the same period, we were entitled to receive total proceeds of approximately $15.2 million from sales of BioManguinhos alfataliglicerase to Fiocruz and sales of drug substance to Pfizer.

Cash Flows

Net cash used in operations was $19.4 million for the year ended December 31, 2019. The net loss for the year ended December 31, 2019 of $18.3 million was further increased by a $9.6 million decrease in contracts liability, which was partially offset by an increase of $2.7 million in accounts payable and accruals, and by $3.0 million amortization of debt issuance costs and debt discount. Net cash used in investing activities for the year ended December 31, 2019 was $0.9 million and consisted primarily of purchase of property and equipment, and an increase in restricted deposit. On March 12, 2020, we entered into securities purchase agreements with certain purchasers for the sale of common stock and warrants for aggregate gross proceeds of $43.7 million.

Future Funding Requirements

We expect to continue to incur significant expenditures in the near future, including significant research and development expenses related primarily to the clinical trials of PRX-102. Our material cash needs for the next 24 months will include, among other expenses, (i) costs of preclinical and clinical trials, (ii) employee salaries, (iii) payments for rent and operation of our manufacturing facilities, (iv) fees to our consultants and legal advisors, patents and fees for service providers in connection with our research and development efforts and (v) payment of principal and interest on our outstanding convertible promissory notes and other debt. We believe that the funds currently available to us are sufficient to satisfy our capital needs for at least 12 months.

We may be required to raise additional capital in the future in order to develop and commercialize our product candidates and continue research and development activities. Our ability to raise capital, and the amounts of necessary capital, will depend on many other factors, including:

- our ability to maintain the listing of our common stock with the NYSE American;
- our efforts, combined with those of Chiesi, to commercialize PRX-102;
- our progress in commercializing BioManguinhos alfataliglicerase in Brazil;
- the costs of commercialization activities, including product marketing, sales and distribution;
- the progress and results of our clinical trials, particularly our clinical trials of PRX-102;
- the duration and cost of discovery and preclinical development and laboratory testing and clinical trials for our product candidates;
- conversions of our 2021 Notes from time to time;
- the timing and outcome of regulatory review of our product candidates; and
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims and other intellectual property rights.

We expect to finance our future cash needs through corporate collaborations, licensing or similar arrangements, public or private equity offerings and/or debt financings. We currently do not have any commitments for future external funding, except with respect to the development-related payments and milestone payments that may become payable under the Chiesi Agreements.

Our management is in the process of evaluating refinancing and restructuring alternatives, including a restructuring of our outstanding convertible notes, and related transactions. However, there is no certainty about our ability to obtain such funding.

Effects of Currency Fluctuations

Currency fluctuations could affect us through increased or decreased acquisition costs for certain goods and services. We do not believe currency fluctuations have had a material effect on our results of operations during the years ended December 31, 2017, 2018 or 2019.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements as of December 31, 2018 and 2019.

Recently Issued Accounting Pronouncements

Certain recently issued accounting pronouncements are discussed in note 1p of the financial statements included in Item 8 of this Annual Report on Form 10-K.

Contractual Obligations

The following table summarizes our significant contractual obligations at December 31, 2019:

(U.S. dollars in thousands)	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Convertible notes - interest	$ 8,688	$ 4,344	$ 4,344		
Convertible notes – principal amount	$ 57,918		$ 57,918		
Operating lease obligations	$ 2,152	$ 1,240	$ 912		
Purchase obligations (1)	$ 4,772	$ 4,556	$ 216		
Certain clinical contract	$ 9,820	$ 6,909	$ 2,911		
Liability for employee rights upon retirement	$ 2,565				$ 2,565
Total	$ 85,915	$ 17,049	$ 66,301		$ 2,565

(1) Represents open purchase orders issued to certain suppliers and other vendors mainly in connection with our research and development activities that were outstanding as of December 31, 2019.

The foregoing table does not include (i) annual license fees, which are immaterial, (ii) payments we may be required to make to certain of our licensors in the time periods set forth above upon the achievement of agreed-upon milestones and (iii) royalty payments payable by us to certain of our licensors in connection with the commercial sale of our product candidates, if any. If all of the contingencies with respect to milestone payments under our research and license agreements are met, the aggregate milestone payments payable would be approximately $14.3 million, and would be payable, if at all, as our projects progress over the course of a number of years. The royalty payments payable by our company in connection with sales of each of our product candidates, if any, shall not exceed low, single-digit percentages of net sales of the product.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Currency Exchange Risk

The currency of the primary economic environment in which our operations are conducted is the dollar. Most of our revenues and approximately 50% of our expenses and capital expenditures are incurred in dollars, and a significant source of our financing has been provided in U.S. dollars. Since the dollar is the functional currency, monetary items maintained in currencies other than the dollar are remeasured using the rate of exchange in effect at the balance sheet dates and non-monetary items are remeasured at historical exchange rates. Revenue and expense items are remeasured at the average rate of exchange in effect during the period in which they occur. Foreign currency translation gains or losses are recognized in the statement of operations.

Approximately 40% of our costs, including salaries, expenses and office expenses, are incurred in NIS. Inflation in Israel may have the effect of increasing the U.S. dollar cost of our operations in Israel. If the U.S. dollar declines in value in relation to the NIS, it will become more expensive for us to fund our operations in Israel. A revaluation of 1% of the NIS will affect our loss before tax by less than 1%. The exchange rate of the U.S. dollar to the NIS, based on exchange rates published by the Bank of Israel, was as follows:

	Year Ended December 31,		
	2017	**2018**	**2019**
Average rate for period	3.600	3.595	3.565
Rate at year-end	3.467	3.748	3.456

To date, we have not engaged in hedging transactions. In the future, we may enter into currency hedging transactions to decrease the risk of financial exposure from fluctuations in the exchange rate of the U.S. dollar against the NIS. These measures, however, may not adequately protect us from material adverse effects due to the impact of inflation in Israel.

Interest Rate Risk

Our exposure to market risk is confined to our cash and cash equivalents. We consider all short term, highly liquid investments, which include short-term deposits with original maturities of three months or less from the date of purchase, that are not restricted as to withdrawal or use and are readily convertible to known amounts of cash, to be cash equivalents. The primary objective of our investment activities is to preserve principal while maximizing the interest income we receive from our investments, without increasing risk. We invest any cash balances primarily in bank deposits and investment grade interest-bearing instruments. We are exposed to market risks resulting from changes in interest rates. We do not use derivative financial instruments to limit exposure to interest rate risk. Our interest gains may decline in the future as a result of changes in the financial markets.

Item 8. Financial Statements and Supplementary Data

See the Index to Consolidated Financial Statements on Page F-1 attached hereto.

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

We conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this Form 10-K. The controls evaluation was conducted under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer. Disclosure controls and procedures are controls and procedures designed to reasonably assure that information required to be disclosed in our reports filed under the Exchange Act, such as this Form 10-K, is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms. Disclosure controls and procedures are also designed to reasonably assure that such information is accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

The evaluation of our disclosure controls and procedures included a review of the controls' objectives and design, our implementation of the controls and their effect on the information generated for use in this Annual Report on Form 10-K. This type of evaluation will be performed on a quarterly basis so that the conclusions of management, including the Chief Executive Officer and Chief Financial Officer, concerning the effectiveness of the disclosure controls and procedures can be reported in our periodic reports on Form 10-Q and Form 10-K. The overall goals of these various evaluation activities are to monitor our disclosure controls and procedures, and to modify them as necessary. Our intent is to maintain the disclosure controls and procedures as dynamic systems that change as conditions warrant.

Based on the controls evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of the end of the period covered by this Form 10-K, our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified by the Commission, and that material information related to our company and our consolidated subsidiaries are made known to management, including the Chief Executive Officer and Chief Financial Officer, particularly during the period when our periodic reports are being prepared.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. Internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures of our company are being made only in accordance with authorizations of management and our directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

Management assessed our internal control over financial reporting as of December 31, 2019, the end of our fiscal year. Management based its assessment on criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Management's assessment included evaluation of elements such as the design and operating effectiveness of key financial reporting controls, process documentation, accounting policies and our overall control environment.

Based on our assessment, management has concluded that our internal control over financial reporting was effective as of the end of the fiscal year to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles. We reviewed the results of management's assessment with the Audit Committee of our Board of Directors.

The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by Kesselman & Kesselman, an independent registered public accounting firm, as stated in their report included herein.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within a company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Projections of any evaluation of controls effectiveness to future periods are subject to risks. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

Changes in internal controls

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15f and 15d-15f under the Exchange Act) that occurred during the quarter ended December 31, 2019 that have materially affected, or that are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information in our 2020 Proxy Statement regarding directors and executive officers appearing under the headings “Security Ownership of Certain Beneficial Owners and Management— Section 16(a) Beneficial Ownership Reporting Compliance” and “Election of Directors” is incorporated by reference in this section.

Item 11. Executive Compensation

The information appearing in our 2020 Proxy Statement under the headings “Director Compensation,” “Compensation Discussion and Analysis,” “Report of the Compensation Committee,” and “Executive Compensation” is incorporated by reference in this section.

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

The information appearing in our 2020 Proxy Statement under the heading “Security Ownership of Certain Beneficial Owners and Management” is incorporated by reference in this section.

Equity Compensation Plan Information

The following table provides information as of December 31, 2019 with respect to the shares of our common stock that may be issued under our existing equity compensation plan.

	A	B	C
Plan Category	**Number of Securities to be Issued Upon Exercise of Outstanding Options**	**Weighted Average Exercise Price of Outstanding Options**	**Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column A)**
Equity Compensation Plans Approved by Stockholders	1,055,197	$ 13.34	690,182
Equity Compensation Plans Not Approved by Stockholders	-	-	-
Total	1,055,197	$ 13.34	690,182

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

The information appearing in our 2020 Proxy Statement under the headings “Election of Directors—Corporate Governance” and “—Certain Relationships and Related Transactions” is incorporated by reference in this section.

Item 14. Principal Accountant Fees and Services

The information appearing in our 2020 Proxy Statement under the heading “Ratification of Appointment of Independent Registered Public Accounting Firm” is incorporated by reference in this section.

PART IV

Item 15. Exhibits and Financial Statement Schedules

The following documents are filed as part of this Annual Report on Form 10-K:

1. *Financial Statements*. The following Consolidated Financial Statements of Protalix BioTherapeutics, Inc. are included in Item 8 of this Annual Report on Form 10-K:

2. *Financial Statement Schedule.* Financial statement schedules have been omitted since they are either not required, are not applicable or the required information is shown in the consolidated financial statements or related notes.

3. *Exhibits.*

		Incorporated by Reference				
Exhibit Number	Exhibit Description	Form	File Number	Exhibit	Date	Filed Herewith
3.1	Certificate of Incorporation of the Company	8-K	333-48677	3.1	April 1, 2016	
3.2	Amendment to Certificate of Incorporation of the Company	Def 14A	001-33357	Appen. A	July 1, 2016	
3.3	Second Amendment to Certificate of Incorporation of the Company	Def 14A	001-33357	Appen. A	October 10, 2018	
3.4	Third Amendment to Certificate of Incorporation of the Company	8-K	001-33357	3.1	December 19, 2019	
3.5	Bylaws of the Company	8-K	001-33357	3.2	October 17, 2018	
4.1	Form of Restricted Stock Agreement/Notice	8-K	001-33357	4.1	July 18, 2012	
4.2	Indenture, dated as of December 7, 2016, between Protalix BioTherapeutics, Inc. the guarantors party thereto, The Bank of New York Mellon Trust Company, N.A., as trustee and Wilmington Savings Fund Society, FSB, as collateral agent	8-K	001-33357	4.1	December 7, 2016	

4.3	Form of 7.50% Convertible Note due 2018 (Issued in Financing)	8-K	001-33357	4.2	December 7, 2016	
4.4	Form of 7.50% Convertible Note due 2018 (Issued in Exchange)	8-K	001-33357	4.3	December 7, 2016	
4.5	First Supplemental to Indenture, dated as of July 24, 2017, by and among Protalix BioTherapeutics, Inc., the guarantors party thereto, The Bank of New York Mellon Trust Company, N.A., as trustee, and Wilmington Savings Fund Society, FSB, as collateral agent	8-K	001-33357	4.2	July 25, 2017	
4.6	Second Supplemental Indenture, dated as of November 27, 2017, by and among Protalix BioTherapeutics, Inc., the guarantors party hereto and The Bank of New York Mellon Trust Company, N.A., as trustee, registrar, paying agent and conversion agent	8-K	001-33357	4.1	December 1, 2017	
4.7	Description of Capital Stock					X
10.1	2006 Stock Incentive Plan, as amended	Def 14A	001-33357	Annex A	March 6, 2018	
10.2	Employment Agreement between Protalix Ltd. and Yoseph Shaaltiel, dated as of September 1, 2004	8-K	001-33357	10.3	January 8, 2007	
10.3	Employment Agreement between Protalix Ltd. and Einat Almon, dated as of December 19, 2004	8-K	001-33357	10.3	January 8, 2007	
10.4	Lease Agreement between Protalix Ltd. and Angel Science Park (99) Ltd., dated as of October 28, 2003 as amended on April 18, 2005	8-K	001-33357	10.9	January 8, 2007	
10.5	Unprotected Lease Agreement	10-K	001-33357	10.21	March 17, 2008	
10.6†	Amended and Restated Agreement between Protalix Ltd. and Comercio e Serviços Ltda. dated June 17, 2013	10-Q	001-33357	10.1	May 8, 2014	
10.7†	Technology Transfer and Supply Agreement made as of June 18, 2013 by and between Protalix Ltd. and Fundação Oswaldo Cruz	10-Q	001-33357	10.3	May 8, 2014	
10.8	Employment Agreement with Moshe Manor dated September 28, 2014	8-K	001-33357	10.1	September 29, 2014	
10.9†	Amended and Restated Exclusive License and Supply Agreement by and between Pfizer Inc. and Protalix Ltd., dated October 12, 2015	10-Q/A	001-33357	10.1	December 11, 2015	

10.10	Form of Note Purchase Agreement, dated of December 1, 2016 among Protalix BioTherapeutics, Inc. and the Purchasers	8-K	001-33357	10.1	December 7, 2016	
10.11	Form of Exchange Agreement, dated of December 1, 2016 among Protalix BioTherapeutics, Inc. and the Existing Holders	8-K	001-33357	10.2	December 7, 2016	
10.12	Form of U.S. Security Agreement, dated of December 7, 2016 among Protalix BioTherapeutics, Inc., the guarantors party thereto and Wilmington Savings Fund Society, FSB, as collateral agent	8-K	001-33357	10.3	December 7, 2016	
10.13	Form of Security Agreement/Debenture, dated of December 7, 2016 between Protalix BioTherapeutics, Inc. and Altshuler Shaham Trusts Ltd., as security trustee	8-K	001-33357	10.4	December 7, 2016	
10.14†	Exclusive License and Supply Agreement dated as of October 17, 2017, made by and between Protalix Ltd. and Chiesi Farmaceutici S.p.A.	10-K	001-33357	10.16	March 6, 2018	
10.15†	Exclusive U.S. License and Supply Agreement dated as of July 23, 2018, made by and between Protalix Ltd. and Chiesi Farmaceutici S.p.A.	10-Q	001-33357	10.1	November 7, 2018	
10.16	Employment Agreement made effective as of May 20, 2019, by and between Protalix Ltd. and Mr. Dror Bashan	8-K	001-33357	10.1	May 21, 2019	
10.17	Employment Agreement made effective as of July 28, 2019, by and between Protalix Ltd. and Mr. Eyal Rubin	8-K	001-33357	10.1	July 29, 2019	
21.1	Subsidiaries	10-K	001-33357	21.1	February 26, 2010	
23.1	Consent of Kesselman & Kesselman, Certified Public Accountants (Isr.), A member of PricewaterhouseCoopers International Limited, independent registered public accounting firm for the Registrant					X
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X

31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X
32.1	18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, Certification of Chief Executive Officer	X
32.2	18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, Certification of Chief Financial Officer	X
101.INS	XBRL INSTANCE FILE	X
101.SCH	XBRL SHEMA FILE	X
101.CAL	XBRL CALCULATION FILE	X
101.DEF	XBRL DEFINITION FILE	X
101.LAB	XBRL LABEL FILE	X
101.PRE	XBRL PRESENTATION FILE	X

† Portions of this exhibit were omitted and have been filed separately with the Secretary of the Securities and Exchange Commission pursuant to the Registrant's application requesting confidential treatment under Rule 24b-2 of the Exchange Act.

Item 16. Form 10-K Summary

None.

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, as of March 12, 2020.

PROTALIX BIOTHERAPEUTICS, INC.

By: /s/ Dror Bashan
Dror Bashan

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Dror Bashan and Eyal Rubin, and each of them, as his true and lawful attorneys-in-fact and agents, with full power of substitution and re-substitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that said attorneys-in-fact and agents, or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ Dror Bashan Dror Bashan	President, Chief Executive Officer (Principal Executive Officer) and Director	March 12, 2020
/s/ Eyal Rubin Eyal Rubin	Chief Financial Officer, Treasurer and Secretary (Principal Financial and Accounting Officer)	March 12, 2020
/s/ Zeev Bronfeld Zeev Bronfeld	Chairman of the Board	March 12, 2020
/s/ Amos Bar Shalev Amos Bar Shalev	Director	March 12, 2020
/s/ Pol F. Boudes Pol F. Boudes, M.D.	Director	March 12, 2020
/s/ David Granot David Granot	Director	March 12, 2020
/s/ Gwen A. Melincoff Gwen A. Melincoff	Director	March 12, 2020
/s/ Aharon Schwartz Aharon Schwartz, Ph.D.	Director	March 12, 2020

PROTALIX BIOTHERAPEUTICS, INC.
CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

To the board of directors and stockholders of Protalix Biotherapeutics, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Protalix BioTherapeutics, Inc. and its subsidiaries (the "Company") as of December 31, 2019 and 2018, and the related consolidated statements of operations, changes in capital deficiency and cash flows for each of the three years in the period ended December 31, 2019 including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in note 1p to the consolidated financial statements, the Company changed the manner in which it accounts for leases during the year ended December 31, 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

Kesselman & Kesselman, Trade Tower, 25 Hamered Street, Tel-Aviv 6812508, Israel, P.O Box 5005 Tel-Aviv 6150001
Telephone: +972 -3- 7954555, Fax:+972 -3- 7954556, www.pwc.co.il

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

/S/ Kesselman & Kesselman
Certified Public Accountants (Isr.)
A member of PricewaterhouseCoopers International Limited

Tel Aviv, Israel

March 12, 2020

We have served as the Company's auditor since 2000.

PROTALIX BIOTHERAPEUTICS, INC.
CONSOLIDATED BALANCE SHEETS
(U.S. dollars in thousands)

	December 31,	
	2018	**2019**
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 37,808	$ 17,792
Accounts receivable – Trade	4,729	4,700
Other assets	1,877	1,832
Inventories	8,569	8,155
Total current assets	$ 52,983	$ 32,479
NON-CURRENT ASSETS:		
Funds in respect of employee rights upon retirement	$ 1,758	$ 1,963
Property and equipment, net	6,390	5,273
Operating lease right of use assets	-	5,677
Total assets	$ 61,131	$ 45,392
LIABILITIES NET OF CAPITAL DEFICIENCY		
CURRENT LIABILITIES:		
Accounts payable and accruals:		
Trade	$ 5,211	$ 6,495
Other	10,274	11,905
Operating lease liabilities	-	1,139
Contracts liability	9,868	16,335
Promissory note	-	4,301
Total current liabilities	$ 25,353	$ 40,175
LONG TERM LIABILITIES:		
Convertible notes	$ 47,966	$ 50,957
Contracts liability	33,027	16,980
Liability for employee rights upon retirement	2,374	2,565
Operating lease liabilities	-	4,528
Other long term liabilities	5,292	509
Total long term liabilities	$ 88,659	$ 75,539
Total liabilities	$ 114,012	$ 115,714
COMMITMENTS (Note 6)		
CAPITAL DEFICIENCY		
Common Stock, $0.001 par value: Authorized - as of December 31, 2018 and 2019, 25,000,000 shares and 120,000,000 respectively; issued and outstanding, respectively - as of December 31, 2018 and 2019, 14,838,213 shares	15	15
Additional paid-in capital	269,657	270,492
Accumulated deficit	(322,553)	(340,829)
Total capital deficiency	(52,881)	(70,322)
Total liabilities net of capital deficiency	$ 61,131	$ 45,392

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

PROTALIX BIOTHERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(U.S. dollars in thousands, except share and per share amounts)

	Year Ended December 31,		
	2017	**2018**	**2019**
REVENUES FROM SELLING GOODS	$ 19,242	$ 8,978	$ 15,866
REVENUES FROM LICENSE AND R&D SERVICES	1,836	25,262	38,827
TOTAL REVENUE	21,078	34,240	54,693
COST OF GOODS SOLD	(15,231)	(9,302)	(10,895)
RESEARCH AND DEVELOPMENT EXPENSES	(32,170)	(35,534)	(44,693)
Less – grants	3,336	2,204	77
RESEARCH AND DEVELOPMENT EXPENSES, NET	(28,834)	(33,330)	(44,616)
SELLING, GENERAL AND ADMINISTRATIVE EXPENSES	(11,530)	(10,916)	(9,899)
OPERATING LOSS	(34,517)	(19,308)	(10,717)
FINANCIAL EXPENSES	(9,725)	(7,685)	(7,966)
FINANCIAL INCOME	188	536	407
LOSS FROM CHANGE IN FAIR VALUE OF CONVERTIBLE NOTES EMBEDDED DERIVATIVE	(38,061)	-	-
LOSS ON EXTINGUISHMENT OF CONVERTIBLE NOTES	(1,325)	-	-
FINANCIAL EXPENSES – NET	(48,923)	(7,149)	(7,559)
NET LOSS FOR THE YEAR	$ (83,440)	$ (26,457)	$ (18,276)
NET LOSS PER SHARE OF COMMON STOCK - BASIC AND DILUTED	$ (6.37)	$ (1.80)	$ (1.23)
WEIGHTED AVERAGE NUMBER OF SHARES OF COMMON STOCK USED IN COMPUTING LOSS PER SHARE – BASIC AND DILUTED	13,108,596	14,713,518	14,838,213

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

PROTALIX BIOTHERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CHANGES IN CAPITAL DEFICIENCY
(U.S. dollars in thousands)

	Common Stock	Common Stock	Additional Paid–In Capital	Accumulated Deficit	Total
	Number of Shares	Amount			
Balance at January 1, 2017	**12,413,409**	**$ 12**	**$ 202,687**	**$ (212,656)**	**$ (9,957)**
Changes during 2017:					
Share-based compensation related to stock options			337		337
Reclassification of embedded derivative			43,634		43,634
Convertible note conversions	1,959,471	2	18,652		18,654
Equity component of convertible notes			1,315		1,315
Net loss				(83,440)	(83,440)
Balance at December 31, 2017	**14,372,880**	**$ 14**	**$ 266,625**	**$ (296,096)**	**$ (29,457)**
Changes during 2018:					
Share-based compensation related to stock options			498		498
Share-based compensation related to restricted stock award	2,990	*	16		16
Convertible note conversions	200,997	*	1,369		1,369
Convertible note payment	261,346	1	1,149		1,150
Net loss				(26,457)	(26,457)
Balance at December 31, 2018	**14,838,213**	**$ 15**	**$ 269,657**	**$ (322,553)**	**$ (52,881)**
Changes during 2019:					
Share-based compensation related to stock options			835		835
Net loss				(18,276)	(18,276)
Balance at December 31, 2019	**14,838,213**	**$ 15**	**$ 270,492**	**$ (340,829)**	**$ (70,322)**

* Represents an amount less than $1.

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

PROTALIX BIOTHERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(U.S. dollars in thousands)

	Year Ended December 31,		
	2017	**2018**	**2019**
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net loss	$ (83,440)	$ (26,457)	$ (18,276)
Adjustments required to reconcile net loss to net cash used in operating activities:			
Share based compensation	337	514	835
Depreciation	1,920	1,671	1,617
Financial expenses (income), net (mainly exchange differences)	(40)	20	378
Changes in accrued liability for employee rights upon retirement	(18)	(18)	(10)
Gain on amounts funded in respect of employee rights upon retirement	(21)	(46)	(58)
Loss on sale of fixed assets	6		
Loss on extinguishment of convertible notes	1,325		
Net loss (income) in connection with conversion of convertible notes	(116)	213	
Change in fair value of convertible notes embedded derivative	38,061		
Amortization of debt issuance costs and debt discount	2,334	2,602	2,991
Issuance of shares for interest payment in connection with conversions of convertible notes	2,391	234	
Changes in operating assets and liabilities:			
Increase (decrease) in contracts liability (including non-current portion)	24,178	17,880	(9,580)
Decrease (increase) in accounts receivable and other assets	25	(3,099)	188
Changes in right of use assets			(110)
Decrease (increase) in inventories	(2,588)	(736)	414
Increase (decrease) in accounts payable and accruals	4,902	(761)	2,735
Increase (decrease) in other long term liabilities	750	241	(482)
Net cash used in operating activities	$ (9,994)	$ (7,742)	$ (19,358)
CASH FLOWS FROM INVESTING ACTIVITIES:			
Purchase of property and equipment	$ (971)	$ (686)	$ (627)
Proceeds from sale of property and equipment	3		
Decrease (increase) in restricted deposit	(146)	62	(259)
Amounts funded in respect of employee rights upon retirement, net	(5)	33	3
Net cash used in investing activities	$ (1,119)	$ (591)	$ (883)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Net payment for convertible notes	$ (10,961)	$ (4,752)	
Net proceeds from issuance of convertible notes	9,542		
Net cash used in financing activities	$ (1,419)	$ (4,752)	
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	$ 414	$ (270)	$ 225
NET DECREASE IN CASH AND CASH EQUIVALENTS	(12,118)	(13,355)	(20,016)
BALANCE OF CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	63,281	51,163	37,808
BALANCE OF CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 51,163	$ 37,808	$ 17,792

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

PROTALIX BIOTHERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(U.S. dollars in thousands)

(CONTINUED)

	Year Ended December 31,		
	2017	**2018**	**2019**
SUPPLEMENTARY INFORMATION ON INVESTING AND FINANCING ACTIVITIES NOT INVOLVING CASH FLOWS:			
Purchase of property and equipment	$ 526	$ 225	$ 98
Convertible note conversions	$ 16,263	$ 2,285	
Right of use assets obtained in exchange for new operating lease liabilities			$ 388
SUPPLEMENTARY DISCLOSURE ON CASH FLOWS			
Interest paid	$ 4,854	$ 4,585	$ 4,344

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

NOTE 1 - SIGNIFICANT ACCOUNTING POLICIES

a. General

Protalix BioTherapeutics, Inc. (collectively with its subsidiaries, the "Company") and its wholly-owned subsidiaries, Protalix Ltd. and Protalix B.V. (the "Subsidiaries"), are biopharmaceutical companies focused on the development and commercialization of recombinant therapeutic proteins based on the Company's proprietary ProCellEx® protein expression system ("ProCellEx"). To date, the Company has successfully developed taliglucerase alfa (marketed under the name BioManguinhos alfataliglicerase in Brazil and certain other Latin American countries and Elelyso® in the rest of the territories) for the treatment of Gaucher disease that has been approved for marketing in the United States, Brazil, Israel and other markets. The Company has a number of product candidates in varying stages of the clinical development process. The Company's strategy is to develop proprietary recombinant proteins that are therapeutically superior to existing recombinant proteins currently marketed for the same indications.

The Company's product pipeline currently includes, among other candidates:

(1) pegunigalsidase alfa, or PRX-102, a therapeutic protein candidate for the treatment of Fabry disease, a rare, genetic lysosomal disorder;

(2) alidornase alfa, or PRX-110, a proprietary plant cell recombinant human Deoxyribonuclease 1, or DNase; and

(3) OPRX-106, the Company's oral anti-TNF product candidate which is being developed as an orally-delivered anti-inflammatory treatment using plant cells as a natural capsule for the expressed protein.

The Company, together with its commercialization partner for PRX-102, Chiesi Farmaceutici S.p.A. ("Chiesi"), plans to file a biologics license application ("BLA") for PRX-102 for the treatment of Fabry disease by April 2020 through the Accelerated Approval pathway of the U.S. Food and Drug Administration ("FDA"). This decision is the result of a series of meetings and correspondence between the Company and Chiesi, on the one hand, and the FDA, on the other hand. The Company and Chiesi have initiated preparations for the BLA submission based on clinical data generated in the one-year completed phase I/II clinical trials of PRX-102 and from the ongoing phase III BRIDGE clinical trial, as well as safety data from all on-going studies. The BLA will also include extensive data from the Company's completed nonclinical program, as well as information regarding production of PRX-102.

Obtaining marketing approval with respect to any product candidate in any country is dependent on the Company's ability to implement the necessary regulatory steps required to obtain such approvals. The Company cannot reasonably predict the outcome of these activities.

On October 19, 2017, Protalix Ltd. and Chiesi entered into an Exclusive License and Supply Agreement (the "Chiesi Ex-US Agreement") pursuant to which Chiesi was granted an exclusive license for all markets outside of the United States to commercialize pegunigalsidase alfa. On July 23, 2018, Protalix Ltd. entered into an Exclusive License and Supply Agreement with Chiesi (the "Chiesi US Agreement") with respect to the commercialization of pegunigalsidase alfa in the United States.

Under each of the Chiesi Ex-US Agreement and the Chiesi US Agreement (collectively, the "Chiesi Agreements"), Chiesi made an upfront payment to Protalix Ltd. of $25.0 million in connection with the execution of each agreement. In addition, under the Chiesi Ex-US Agreement, Protalix Ltd. is entitled to additional payments of up to $25.0 million in pegunigalsidase alfa development costs, capped at $10.0 million per year, and to receive additional payments of up to $320.0 million, in the aggregate, in regulatory and commercial milestone payments. Under the Chiesi US Agreement, Protalix Ltd. is entitled to payments of up to a maximum of $20.0 million to cover development costs for pegunigalsidase alfa, subject to a maximum of $7.5 million per year, and to receive additional payments of up to a maximum of $760.0 million, in the aggregate, in regulatory and commercial milestone payments.

NOTE 1 - SIGNIFICANT ACCOUNTING POLICIES (continued)**:**

Under the terms of both of the Chiesi Agreements, Protalix Ltd. will manufacture all of the pegunigalsidase alfa needed under the agreements, subject to certain exceptions, and Chiesi will purchase pegunigalsidase alfa from Protalix, subject to certain terms and conditions. Under the Chiesi Ex-US Agreement, Chiesi is required to make tiered payments of 15% to 35% of its net sales, depending on the amount of annual sales outside of the United States, as consideration for product supply. Under the Chiesi US Agreement, Chiesi is required to make tiered payments of 15% to 40% of its net sales, depending on the amount of annual sales in the United States, as consideration for product supply.

Since its approval by the FDA, taliglucerase alfa has been marketed by Pfizer Inc. ("Pfizer") in accordance with the exclusive license and supply agreement entered into between Protalix Ltd. and Pfizer, which is referred to herein as the Pfizer Agreement. In October 2015, Protalix Ltd. and Pfizer entered into an amended exclusive license and supply agreement, which is referred to herein as the Amended Pfizer Agreement, pursuant to which the Company sold to Pfizer its share in the collaboration created under the Pfizer Agreement for the commercialization of Elelyso. As part of the sale, the Company agreed to transfer its rights to Elelyso in Israel to Pfizer while gaining full rights to it in Brazil. Under the Amended Pfizer Agreement, Pfizer is entitled to all of the revenues, and is responsible for 100% of expenses globally for Elelyso, excluding Brazil where the Company is responsible for all expenses and retains all revenues.

On June 18, 2013, the Company entered into a Supply and Technology Transfer Agreement (the "Brazil Agreement") with Fundação Oswaldo Cruz ("Fiocruz"), an arm of the Brazilian Ministry of Health (the "Brazilian MoH"), for taliglucerase alfa. Fiocruz's purchases of BioManguinhos alfataliglicerase to date have been significantly below certain agreed upon purchase milestones and, accordingly, the Company has the right to terminate the Brazil Agreement. Notwithstanding the termination right, the Company is, at this time, continuing to supply BioManguinhos alfataliglicerase to Fiocruz under the Brazil Agreement, and patients continue to be treated with BioManguinhos alfataliglicerase in Brazil.

NOTE 1 - SIGNIFICANT ACCOUNTING POLICIES (continued)**:**

b. Basis of presentation

The Company's financial statements have been prepared in accordance with generally accepted accounting principles in the United States ("U.S. GAAP").

c. Use of estimates in the preparation of financial statements

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates.

d. Functional currency

The dollar is the currency of the primary economic environment in which the operations of the Company and its Subsidiaries are conducted. The Company's revenues are derived in dollars. Most of the Company's expenses and capital expenditures are incurred in dollars, and the major source of the Company's financing has been provided in dollars.

Transactions and balances originally denominated in dollars are presented at their original amounts. Balances in non-dollar currencies are translated into dollars using historical and current exchange rates for non-monetary and monetary balances, respectively. For non-dollar transactions and other items (stated below) reflected in the statements of operations, the following exchange rates are used: (i) for transactions – exchange rates at the transaction dates or average rates; and (ii) for other items (derived from non-monetary balance sheet items such as depreciation and amortization, etc.) – historical exchange rates. Currency transaction gains and losses are recorded as financial income or expenses, as appropriate.

e. Cash equivalents

The Company considers all short-term, highly liquid investments, which include short-term bank deposits with original maturities of three months or less from the date of purchase, that are not restricted as to withdrawal or use and are readily convertible to known amounts of cash, to be cash equivalents.

f. Inventories

Inventories are valued at the lower of cost or net realizable value. Cost of raw and packaging materials and purchased products is determined using the "moving average" basis.

Cost of finished products is determined as follows: the value of the raw and packaging materials component is determined primarily using the "moving average" basis; the value of the labor and overhead component is determined on an average basis over the production period.

Inventory is written down for estimated obsolescence based upon management assumptions about future demand and market conditions.

g. Property and equipment

1. Property and equipment are stated at cost, net of accumulated depreciation and amortization.

2. The Company's assets are depreciated by the straight-line method on the basis of their estimated useful lives as follows:

	Years
Laboratory equipment	5
Furniture	10-15
Computer equipment	3

NOTE 1 - SIGNIFICANT ACCOUNTING POLICIES (continued)**:**

Leasehold improvements are amortized by the straight-line method over the expected lease term, which is shorter than the estimated useful life of the improvements.

h. Impairment in value of long-lived assets

The Company tests long-lived assets for impairment if an indication of impairment exists. If the sum of expected future cash flows of definite life assets (undiscounted and without interest charges) is less than the carrying amount of such assets, the Company recognizes an impairment loss, and writes down the assets to their estimated fair values.

i. Income taxes

1. Deferred income taxes

   Deferred taxes are determined utilizing the assets and liabilities method based on the estimated future tax effects of the differences between the financial accounting and tax bases of assets and liabilities under the applicable tax laws. Deferred tax balances are computed using the tax rates expected to be in effect when those differences reverse. A valuation allowance in respect of deferred tax assets is provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. The Company has provided a full valuation allowance with respect to its deferred tax assets. The Company used statutory tax rates of 27% and 23%. See note 12.

2. Uncertainty in income taxes

   Tax benefits recognized in the financial statements are those that the Company's management deems at least more likely than not to be sustained, based on technical merits. The amount of benefits recorded for these tax benefits is measured as the largest benefit the Company's management deems more likely than not to be sustained.

j. Revenue Recognition

On January 1, 2018, the Company adopted the new accounting standard, ASC 606, Revenue from Contracts with Customers, and all the related amendments, using the modified retrospective method. The implementation of this Accounting Standards Update (ASU) did not have a material impact on the Company's consolidated financial statements at adoption.

The Company's revenue recognition accounting policy from January 1, 2018, following the adoption of the new revenue standard

A contract with a customer exists only when: the parties to the contract have approved it and are committed to perform their respective obligations, the Company can identify each party's rights regarding the distinct goods or services to be transferred ("performance obligations"), the Company can determine the transaction price for the goods or services to be transferred, the contract has commercial substance and it is probable that the Company will collect the consideration to which it will be entitled in exchange for the goods or services that will be transferred to the customer.

Revenues are recorded in the amount of consideration to which the Company expects to be entitled in exchange for performance obligations upon transfer of control to the customer.

1. Revenues from selling products

   The Company recognizes revenues from selling goods at a point in time when control over the product is transferred to customers (upon delivery).

NOTE 1 - SIGNIFICANT ACCOUNTING POLICIES (continued)**:**

2. Revenues from Chiesi Agreements

According to ASC 606, a performance obligation is a promise to provide a distinct good or service or a series of distinct goods or services. Goods and services that are not distinct are bundled with other goods or services in the contract until a bundle of goods or services that is distinct is created. A good or service promised to a customer is distinct if the customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer and the entity's promise to transfer the good or service to the customer is separately identifiable from other promises in the contract.

The Company has identified two performance obligation in Chiesi agreements as follows: (1) the license and research and development services and (2) contingent performance obligation regarding future manufacturing.

The Company determined that the license together with the research and development services should be combined into single performance obligation since Chiesi cannot benefit from the license without the research and development services. The research and development services are highly specialized and are dependent on the supply of the drug.

The future manufacturing is contingent on regulatory approvals of the drug and Company deems these services to be separately identifiable from other performance obligations in the contract. Manufacturing services post-regulatory approval are not interdependent or interrelated with the license and research and development services.

The transaction price was comprised of fixed consideration and variable consideration (capped research and development reimbursements). Under ASC 606, the consideration to which the Company would be entitled upon the achievement of contractual milestones, which are contingent upon the occurrence of future events, are a form of variable consideration. The Company estimates variable consideration using the most likely method. Amounts included in the transaction price are recognized only when it is probable that a significant reversal of cumulative revenues will not occur. Prior to recognizing revenue from variable consideration, the Company uses significant judgment to determine the probability of significant reversal of such revenue.

Since the customer benefits from the research and development services as the entity performs the service, revenue from granting the license and the research and development services is recognized over time using the cost-to-cost method. The Company used significant judgment when it determined the costs expected to be incurred upon satisfying the identified performance obligation.

Revenue from additional research and development services ordered by Chiesi, is recognized over time using the cost-to-cost method.

The Company accounted for the Chiesi US agreement as a modification of the Chiesi Ex-US agreement. As such, the Company recorded revenue through a cumulative catch-up adjustment in the third quarter of 2018 in the amount of $6.2 million.

The Company's revenue recognition accounting policy prior to January 1, 2018, was materially the same.

k. Research and development costs

Research and development costs are expensed as incurred and consist primarily of personnel, subcontractors and consultants (mainly in connection with clinical trials), facilities, equipment and supplies for research and development activities. Grants received by the Israeli Subsidiary from the National Authority for Technological Innovation ("NATI"), which has replaced many of the functions of the Office of the Chief Scientist of Israel's Ministry of Industry, Trade and Labor (the "OCS"), are recognized when the grant becomes receivable, provided there is reasonable assurance that the Company or the Subsidiaries will comply with the conditions attached to the grant and there is reasonable assurance the grant will be received. The grant is deducted from the research and development expenses as the applicable costs are incurred. In connection with purchases of assets, amounts assigned to intangible assets to be used in a particular research and development project that have no alternative future use are charged to research and development costs at the purchase date. Cost of research and development services are included in research and development expenses.

NOTE 1 - SIGNIFICANT ACCOUNTING POLICIES (continued)**:**

l. Concentration of credit risks and trade receivable

Financial instruments that potentially subject the Company to concentration of credit risk consist principally of bank deposits. The Company deposits these instruments with highly rated financial institutions, mainly in Israeli banks, and, as a matter of policy, limits the amounts of credit exposure to any one financial institution.

The Company has not experienced any credit losses in these accounts and does not believe it is exposed to any significant credit risk on these instruments. The Company's trade receivables represent amounts to be received from Pfizer, Brazil and Chiesi. The Company does not require Pfizer, Brazil or Chiesi to post collateral with respect to receivables.

m. Share-based compensation

The Company accounts for employee's share-based payment awards classified as equity awards using the grant-date fair value method. The fair value of share-based payment transactions is recognized as an expense over the requisite service period.

The Company elected to recognize compensation cost for an award with only service conditions that has a graded vesting schedule using the accelerated method based on the multiple-option award approach.

When stock options are granted as consideration for services provided by consultants and other non-employees, the grant is accounted for based on the fair value of the stock options issued. Options granted are recognized over the related service period using the straight-line method.

The Company elects to account for forfeitures as they occur.

n. Net loss per share

Basic and diluted loss per share ("LPS") are computed by dividing net loss by the weighted average number of shares of the Company's Common Stock, par value $0.001 per share (the "Common Stock") outstanding for each period. The calculation of diluted LPS does not include approximately 7,684,820, 7,458,380 and 7,838,120 shares of Common Stock underlying outstanding options, restricted shares of Common Stock and shares issuable upon conversion of the convertible notes for the fiscal years ended December 31, 2017, 2018 and 2019, respectively, because the effect would be anti-dilutive. The computation of basic and diluted net loss per common share was adjusted retroactively for all periods presented to reflect the Company's reverse stock split. See also note 9(b).

o. Convertible notes

All outstanding convertible notes are accounted for using the guidance set forth in the Financial Accounting Standards Board ("FASB") Accounting Standards Codification (ASC) 815 requiring that the Company determine whether the embedded conversion option must be separated and accounted for separately. ASC 470-20 regarding debt with conversion and other options requires the issuer of a convertible debt instrument that may be settled in cash upon conversion to separately account for the liability (debt) and equity (conversion option) components of the instrument in a manner that reflects the issuer's nonconvertible debt borrowing rate. The Company accounted for the 2018 Notes (as defined in note 10a) as a liability, on an aggregated basis, in their entirety. The 2021 Notes were accounted for partially as liability and equity components of the instrument and partially as a debt host contract with an embedded derivative resulting from the conversion feature. During the year ended December 31, 2017, the embedded derivative was reclassified to additional paid in capital.

NOTE 1 - SIGNIFICANT ACCOUNTING POLICIES (continued)**:**

Issuance costs regarding the issuance of the 2021 Notes are amortized using the effective interest rate. The debt discount and debt issuance costs regarding the issuance of the 2018 Notes were deferred and amortized over the 2018 Notes period (5 years).

As of December 31, 2019, a total of $57.9 million aggregate principal amount of the 2021 Notes were outstanding. In addition, as of December 31, 2019, none of the 2018 Notes were outstanding.

p. Leases

Leases are classified as finance or operating, with classification affecting the pattern and classification of expense recognition in the income statement. The Company determines if an arrangement is a lease at inception. Lease classification is governed by five criteria in ASC 842-10-25-2. If any of these five criteria is met, the Company classifies the lease as a finance lease. Otherwise, the Company classifies the lease as an operating lease.

Operating leases are included in operating lease right-of-use ("ROU") assets, other current liabilities and operating lease liabilities in the consolidated balance sheets.

ROU assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating and finance lease ROU assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. The Company uses its incremental borrowing rate based on the information available at the commencement date to determine the present value of the lease payments. The Company's incremental average borrowing rate at inception was 12.58%.

The Company elected the package of transition practical expedients permitted under the transition guidance within the new standard which, among other things, allows the Company to carryforward the historical lease classification.

The new lease standard also provides practical expedients for an entity's ongoing accounting. The Company elected the short-term lease recognition exemption for all leases with a term shorter than 12 months. This means, for those leases, the Company does not recognize ROU assets or lease liabilities, including not recognizing ROU assets or lease liabilities for existing short-term leases of those assets in transition. The Company also elected the practical expedient to not separate lease and non-lease components for all of the Company's leases, other than leases of real estate.

Lease terms will include options to extend or terminate the lease when it is reasonably certain that the Company will either exercise or not exercise the option to renew or terminate the lease. The Company recognizes lease expenses over the lease term on a straight line basis.

The depreciable life of leasehold improvements is limited by the expected lease term, unless there is a transfer of title or a purchase option for the leased asset reasonably certain of exercise.

Additionally, following the adoption of the new lease standard and in subsequent measurements, the Company applies the portfolio approach to account for the operating lease ROU assets and liabilities for certain car leases and incremental borrowing rates.

q. Recently adopted standards

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU No. 2016-02, "Leases" (Topic 842). The guidance establishes an ROU model that requires a lessee to recognize an ROU asset and lease liability on the balance sheet for all leases. The Company adopted the new lease standard and all the related amendments on January 1, 2019 and used the effective date as the Company's date of initial application. Consequently, financial information was not updated and the disclosures required under the new standard are not provided for dates and periods before January 1, 2019. A modified retrospective transition approach is required, applying the new standard to all leases existing at the date of initial application. As of the adoption date, the Company recognized an operating lease asset and a liability of $5.9 million and $5.7 million, respectively, as of January 1, 2019 on its balance sheet.

NOTE 2 - COMMERCIALIZATION AGREEMENTS

1. On November 30, 2009, Protalix Ltd. and Pfizer entered into the Pfizer Agreement (as amended in June 2013) pursuant to which Pfizer was granted an exclusive, worldwide license to develop and commercialize taliglucerase alfa, except for Israel and Brazil. Under the Pfizer Agreement Protalix was entitled to 40% of the results (profits or losses) earned on Pfizer's sales of taliglucerase alfa.

   In October 2015, the Company entered into the Amended Pfizer Agreement with Pfizer. Pursuant to the amendment, the Company granted Pfizer an exclusive license in the entire world, including Israel but excluding Brazil. Pfizer acquired all the information, knowledge and permission to manufacture and sell Elelyso.

   Protalix Ltd. also agreed to provide Pfizer with:

   a. Manufacturing and supply of the drug substance for its incorporation into the licensed product in consideration of an agreed price per unit.

   b. Assistance in arranging for the manufacture of the drug substance by Pfizer or by alternative supplier chosen by Pfizer in consideration of an agreed hourly rate plus reimbursement of expenses.

   Promissory note – as of the date of the amendment, the Company owed Pfizer $4.3 million as a result of the accumulated losses incurred by the Collaboration Operation. Following the new agreements, the Company committed to pay Pfizer the principal sum of the debt at the earlier of (a) November 12, 2020 and (b) the date upon which it becomes due pursuant to any event of default, as defined. As of December 31, 2018, the promissory note was presented in "other long term liabilities." As of December 31, 2019, the promissory note was classified to current liabilities.

2. In October 2017, Protalix Ltd. entered into the Chiesi Ex-U.S. Agreement with respect to the commercialization of pegunigalsidase alfa (hereafter – the drug) for the treatment of Fabry disease. Under the terms of the Chiesi Agreement, Protalix Ltd. granted to Chiesi exclusive licensing rights for the commercialization of the drug for all markets outside of the United States. At the effective date, Protalix Ltd. had maintained the exclusive commercialization rights to the drug in the United States, which rights were subsequently granted to Chiesi in July 2018.

   Protalix Ltd. will be mainly responsible for (i) continuing the development of the drug until a regulatory approval is granted and (ii) manufacture and supply the drug to Chiesi, based on Chiesi's requests.

   The consideration consists of the following:

   a. Upfront, non-refundable payment of $25.0 million.

   b. Additional payments of up to $25.0 million in development costs, capped at $10.0 million per year.

   c. Payments for additional studies, as may be approved from time to time by Chiesi.

   d. Milestone payments of up to $320.0 million with respect to certain regulatory and commercial events as defined in the Chiesi Agreement.

   e. Additional payments as consideration for the supply of the drug. The payment will vary from 15% to 35% of Chiesi's average selling price of the drug, depending on the amount of annual sales.

   f. Protalix Ltd. will be the sole manufacturer of the drug.

   Chiesi does not have sublicensing rights (except for certain territories).

NOTE 2 - COMMERCIALIZATION AGREEMENTS (continued)**:**

In July 2018, Protalix Ltd. entered into the Chiesi U.S. Agreement with respect to the commercialization of the drug for the treatment of Fabry disease. Under the terms of the Chiesi U.S. Agreement, Protalix Ltd. granted to Chiesi exclusive licensing rights for the commercialization of the drug for all markets in the United States. Protalix Ltd. will be mainly responsible for (i) continuing the development of the drug until a regulatory approval is granted, (ii) continuing certain clinical development efforts in relation to the drug after a regulatory approval is granted and (iii) manufacture and supply the drug to Chiesi, based on Chiesi's requests.

The consideration consists of the following:

a. Upfront, non-refundable payment of $25.0 million.

b. Additional payments of up to $20.0 million in development costs, capped at $7.5 million per year.

c. Payments for additional studies, as may be approved from time to time by Chiesi.

d. Milestone payments of up to $760.0 million with respect to certain regulatory and commercial events as defined in the Chiesi Agreement.

e. Additional payments as consideration for the supply of the drug. The payment will vary from 15% to 40% of Chiesi's average selling price of the drug, depending on the amount of annual sales.

f. Protalix will be the sole manufacturer of the drug.

Chiesi does not have sublicensing rights.

As of December 31, 2019, the Company has received, or is entitled to receive, the following payments from Chiesi:

a. Upfront payments equal to $50.0 million, in the aggregate.

b. Payments equal to approximately $40.1 million in consideration for development services performed.

c. Payments equal to approximately $9.1 million in connection with the performance of extension studies.

During the last quarter of 2019, the Company recognized revenues of approximately $4.5 million related to a $10.0 million future milestone payment. The Company assessed the likelihood of achieving the milestone using the most likely amount method and evaluated for the constraint by including in the transaction price variable consideration to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur. Based on the Company's judgement, the milestone payment is expected to be received in the beginning of 2021.

3. On June 18, 2013, Protalix Ltd. entered into the Brazil Agreement with Fiocruz for BioManguinhos alfataliglicerase. Fiocruz's purchases of BioManguinhos alfataliglicerase to date have been significantly below certain agreed upon purchase milestones and, accordingly, the Company has the right to terminate the Brazil Agreement. Notwithstanding, the Company is, at this time, continuing to supply BioManguinhos alfataliglicerase to Fiocruz under the Brazil Agreement, and patients continue to be treated with BioManguinhos alfataliglicerase in Brazil. Approximately 25% of adult Gaucher patients in Brazil are currently treated with BioManguinhos alfataliglicerase. The Company is discussing with Fiocruz potential actions that Fiocruz may take to comply with its purchase obligations and, based on such discussions, the Company will determine what it believes to be the course of action that is in the best interest of the Company.

NOTE 3 - PROPERTY AND EQUIPMENT

a. Composition of property and equipment grouped by major classifications is as follows:

	December 31,	
(*U.S. dollars in thousands*)	**2018**	**2019**
Laboratory equipment	$ 16,732	$ 16,849
Furniture and computer equipment	2,565	2,636
Leasehold improvements	16,191	16,492
Equipment under construction	18	
	$ 35,506	$ 35,977
Less – accumulated depreciation and amortization	(29,116)	(30,704)
	$ 6,390	$ 5,273

NOTE 3 - PROPERTY AND EQUIPMENT (continued)**:**

b. Depreciation in respect of property and equipment totaled approximately $1.9 million, $1.7 million and $1.6 million for the years ended December 31, 2017, 2018 and 2019, respectively.

NOTE 4 - INVENTORIES

a. Inventories at December 31, 2018 and 2019 consisted of the following:

	December 31,	
(*U.S. dollars in thousands*)	**2018**	**2019**
Raw materials	$ 3,792	$ 3,607
Work in progress		552
Finished goods	4,777	3,996
	$ 8,569	$ 8,155

b. During the years ended December 31, 2018 and 2019, the Company recorded approximately $1.1 million and $0.5 million, respectively, for write-down of inventory under cost of goods sold.

NOTE 5 - LIABILITY FOR EMPLOYEE RIGHTS UPON RETIREMENT

The Israeli Subsidiary is required to make a severance payment upon dismissal of an employee or upon termination of employment in certain circumstances. The severance pay liability to the employees (based upon length of service and the latest monthly salary - one month's salary for each year employed) is recorded on the Company's balance sheets under "Liability for employee rights upon retirement." The liability is recorded as if it were payable at each balance sheet date on an undiscounted basis.

The liability is funded in part from the purchase of insurance policies or by the establishment of pension funds with dedicated deposits in the funds. The amounts used to fund these liabilities are included in the Company's balance sheets under "Funds in respect of employee rights upon retirement." These policies are the Company's assets. However, under labor agreements and subject to certain limitations, any policy may be transferred to the ownership of the individual employee for whose benefit the funds were deposited. In the years ended December 31, 2017, 2018 and 2019, the Company deposited approximately $166,000, $145,000 and $143,000, respectively, with insurance companies in connection with its severance payment obligations.

In accordance with the current employment agreements with certain employees, the Company makes regular deposits with certain insurance companies for accounts controlled by each applicable employee in order to secure the employee's rights upon retirement. The Company is fully relieved from any severance pay liability with respect to each such employee after it makes the payments on behalf of the employee. The liability accrued in respect of these employees and the amounts funded, as of the respective agreement dates, are not reflected in the Company's balance sheets, as the amounts funded are not under the control and management of the Company and the pension or severance pay risks have been irrevocably transferred to the applicable insurance companies (the "Contribution Plans").

The amounts of severance pay expenses were approximately $906,000, $781,000 and $784,000 for each of the years ended December 31, 2017, 2018 and 2019, respectively, of which approximately $746,000, $620,000 and $642,000 in the years ended December 31, 2017, 2018 and 2019, respectively, were in respect of the Contribution Plans. Gain on amounts funded in respect of employee rights upon retirement totaled approximately $21,000, $46,000 and $58,000 for the years ended December 31, 2017, 2018 and 2019, respectively.

The Company expects to contribute approximately $866,000 in the year ending December 31, 2020 to insurance companies in connection with its severance liabilities for its operations for that year, approximately $722,000 of which will be contributed to one or more Contribution Plans.

During the five-year period following December 31, 2019, the Company expects to pay future benefits to three employees upon each such employee's normal retirement age. The Company anticipates that the benefits payable will be approximately $246,000.

NOTE 6 - COMMITMENTS

a. Royalty Commitments

The Company is obligated to pay royalties to NATI on proceeds from the sale of products developed from research and development activities that were funded, partially, by grants from NATI or its predecessor, the Office of the Israeli Innovation Authority (IIA). At the time the grants were received, successful development of the related projects was not assured.

In the case of failure of a project that was partly financed as described above, the Company is not obligated to pay any such royalties or repay funding received from NATI or the IIA.

Under the terms of the applicable funding arrangements, royalties of 3% to 6% are payable on the sale of products developed from projects funded by NATI or the IIA, which payments shall not exceed, in the aggregate, 100% of the amount of the grant received (dollar linked), plus, commencing upon January 1, 2001, interest at an annual rate based on LIBOR. In addition, if the Company receives approval to manufacture products developed with government grants outside the State of Israel, it will be required to pay an increased total amount of royalties (possibly up to 300% of the grant amounts plus interest), depending on the manufacturing volume that is performed outside the State of Israel, and, possibly, an increased royalty rate.

Royalty expenses to NATI or the IIA are included in the statement of operations as a component of the cost of revenues and were approximately $1,384,000, $1,619,000 and $1,390,000 during the years ended December 31, 2017, 2018 and 2019, respectively.

At December 31, 2018 and 2019, the maximum total royalty amount payable by the Company under these funding arrangements is approximately $41.9 million and $40.8 million, respectively (without interest, assuming 100% of the funds are payable).

b. Subcontracting Agreements

The Company has entered into sub-contracting agreements with several clinical providers and consultants in Israel, the United States and certain other countries in connection with its primary product development process. As of December 31, 2019, total commitments under said agreements were approximately $9.8 million.

NOTE 7 - OPERATING LEASES

The Company is a party to a number of lease agreements for its facilities, the latest of which has been extended until 2021. The Company has the option to extend certain of such agreements on two additional occasions for additional five-year periods each, for a total of 10 additional years. During the extended lease period, the aggregate monthly rental payments will increase by 7.5%-10% for each option. The Company expects to exercise these options in future periods. As of December 31, 2019, the Company provided bank guarantees of approximately $439,000, in the aggregate, to secure the fulfillment of its obligations under the lease agreements. As of December 31, 2018, the future minimum lease payments required under the operating leases for such premises are approximately $758,000, $758,000 and $621,000, for fiscal years 2019 through 2021, respectively.

The Company entered into several three-year leases for vehicles which are regularly amended as new vehicles are leased. As of December 31, 2018, the future minimum lease payments for the years ending December 31, 2019, 2020 and 2021 are approximately $474,000, $333,000 and $82,000, respectively.

NOTE 7 – OPERATING LEASES (continued)**:**

The following table sets forth data regarding the Company's operating leases for the year ended December 31, 2019:

(*U.S. dollars in thousands*)	December 31, 2019
Operating lease costs	$ 1,219
Cash paid for amounts included in the measurement of lease liabilities	1,329
Weighted average remaining lease term (in years)	10.508
Weighted average discount rate	12.7%

The following table sets forth a maturity analysis of the Company's operating lease liabilities as of December 31, 2019:

(*U.S. dollars in thousands*)	December 31, 2019
2020	$ 1,139
2021	$ 956
2022	$ 845
2023	$ 806
After 2024	$ 6,683
Total undiscounted cash flows	$ 10,429
Less: imputed interest	$ 4,762
Present value of operating lease liabilities	$ 5,667

NOTE 8 - REVENUE

The following table summarizes the Company's disaggregation of revenues:

	Year ended December 31,		
(U.S. dollars in thousands)	**2017**	**2018**	**2019**
Pfizer	$ 12,181	$ 5,320	6,722
Brazil	$ 7,061	$ 3,658	9,144
Revenues from selling goods	$ 19,242	$ 8,978	15,866
Revenues from license and R&D services	$ 1,836	$ 25,262	38,827

During the last quarter of 2019, the Company recognized revenues of approximately $4.5 million related to a $10.0 million future milestone payment. The Company assessed the likelihood of achieving the milestone using the most likely amount method and evaluated for the constraint by including in the transaction price variable consideration to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur. Based on the Company's judgement, the milestone payment is expected to be received in the beginning of 2021.

NOTE 9 - SHARE CAPITAL

a. Rights of the Company's Common Stock

The Company's Common Stock is listed on the NYSE American and on the Tel Aviv Stock Exchange. Each share of Common Stock is entitled to one vote. The holders of shares of Common Stock are also entitled to receive dividends whenever funds are legally available, when and if declared by the Board of Directors. Since its inception, the Company has not declared any dividends.

NOTE 9 – SHARE CAPITAL (continued):

b. Reverse stock split

On December 9, 2019, the Company's stockholders approved an amendment to the Company's Certificate of Incorporation, as amended, to, among other things, effect a reverse stock split at a ratio of one-for-ten. The ratio was determined by the Company's Board of Directors on December 5, 2019 and the reverse stock split became effective at midnight December 19, 2019. All share and per share amounts included in the consolidated financial statements have been adjusted retrospectively to reflect the effect of the reverse stock split.

c. Stock based compensation

On December 14, 2006, the Board of Directors adopted the Protalix BioTherapeutics, Inc. 2006 Stock Incentive Plan, as amended (the "Plan"). The Plan has since been amended to, among other things, increase the number of shares of common stock available under the Plan to 2,384,165 shares. The grant of options to Israeli employees under the Plan is subject to the terms stipulated by Sections 102 and 102A of the Israeli Income Tax Ordinance. Each option grant made to an Israeli citizen is subject to the track chosen by the Company, either Section 102 or Section 102A of the Israeli Income Tax Ordinance, and pursuant to the terms thereof, the Company is not allowed to claim, as an expense for tax purposes, the amounts credited to employees as a benefit, including amounts recorded as salary benefits in the Company's accounts, in respect of options granted to employees under the Plan, with the exception of the work-income benefit component, if any, determined on the grant date. For Israeli non-employees, the share option plan is subject to Section 3(i) of the Israeli Income Tax Ordinance.

As of December 31, 2019, 690,182 shares of Common Stock remain available for grant under the Plan.

For purposes of determining the fair value of the options and restricted stock unit granted to employees and non-employees, the Company's management uses the fair value of the Common Stock.

From January 1, 2017 through December 31, 2019, the Company granted options and shares of restricted stock to certain employees and non-employees as follows:

1. **Options and restricted stock unit granted to employees:**

a) Below is a table summarizing all of the options grants to employees during the year ended December 31, 2019:

No. of options granted	Exercise price	Vesting period	Fair value at grant (U.S. dollars in thousands)	Expiration period
160,000	$ 4.69	4 years	$ 449	10 years
80,000	$ 2.00	4 years	$ 97	10 years

Set forth below are grants made by the Company to employees (including related parties) during the three-year period ended December 31, 2019 (a portion of such grants appear in the table above):

On September 13, 2018, the Company's compensation committee approved the grant of 10-year options to purchase, in the aggregate, 636,000 shares of Common Stock, of which options to purchase 400,000 shares of Common Stock were granted to the Company's executive officers and options to purchase 236,000 shares of Common Stock were granted to other employees with an exercise price equal to $5.60 per share and $5.10 per share, respectively, under the Plan. The options vest over a four-year period in 16 equal quarterly increments. Vesting of the options granted to the executive officers is subject to acceleration in full upon a Corporate Transaction or a Change in Control, as those terms are defined in the Plan, and are subject to certain other terms and conditions. The Company estimated the fair value of the options on the date of grant using the Black-Scholes option-pricing model to be approximately $1.9 million based on the following weighted average assumptions: share price equal to $5.10; dividend yield of 0% for all years; expected volatility of 64.3%; risk-free interest rates of 2.9%; and expected life of six years.

NOTE 9 – SHARE CAPITAL (continued):

In June 2019, the Company granted to its new chief executive officer 10-year options to purchase, in the aggregate, 160,000 shares of Common Stock under the Plan. The options have an exercise price equal to $4.69 per share, vest over a four-year period in 16 equal quarterly increments. Vesting of the options is subject to acceleration in full upon a Corporate Transaction or a Change in Control, as those terms are defined in the Plan, and are subject to certain other terms and conditions. The Company estimated the fair value of the options on the date of grant using the Black-Scholes option-pricing model to be approximately $449,000 based on the following weighted average assumptions: share price equal to $4.69; dividend yield of 0% for all years; expected volatility of 65.3%; risk-free interest rates of 1.8%; and expected life of six years.

In September 2019, the Company granted to its new chief financial officer 10-year options to purchase, in the aggregate, 80,000 shares of Common Stock under the Plan. The options have an exercise price equal to $2.00 per share and vest over a four-year period in 16 equal quarterly increments. Vesting of the options is subject to acceleration in full upon a Corporate Transaction or a Change in Control, and are subject to certain other terms and conditions. The Company estimated the fair value of the options on the date of grant using the Black-Scholes option pricing model to be approximately $97,000 based on the following weighted average assumptions: share price equal to $2.00; dividend yield of 0% for all years; expected volatility of 66.48%; risk-free interest rates of 1.695%; and expected life of six years. In addition, contingent upon certain conditions, the new chief financial officer is entitled to a grant of restricted stock units with an aggregate value of $100,000, on an annual basis.

b) The total unrecognized compensation cost of employee stock options at December 31, 2019 is approximately $0.8 million. The unrecognized compensation cost of employee stock options is expected to be recognized over a weighted average period of 1.07 years.

During the three years ended December 31, 2019, no cash was received from employees as a result of employee stock option exercises and the Company did not realize any tax benefit in connection with any exercises.

2. A summary of share option plans, and related information, under all of the Company's equity incentive plans for the years ended December 31, 2017, 2018 and 2019 is as follows:

a) Options granted to employees:

	Year ended December 31,					
	2017		2018		2019	
	Number of options	Weighted average exercise price	Number of options	Weighted Average Exercise Price	Number of options	Weighted average exercise price
Outstanding at beginning of year	488,421	$ 36.17	472,962	$ 36.04	1,000,068	$ 15.47
Changes during the year:						
Granted			636,000	5.41	240,000	3.79
Forfeited and Expired	15,459	40.04	108,894	46.04	199,871	14.14
Outstanding at end of year	472,962	$ 36.04	1,000,068	$ 15.47	1,040,197	$ 13.03
Exercisable at end of year	445,746	$ 36.96	394,486	$ 30.65	532,322	$ 21.04

NOTE 9 – SHARE CAPITAL (continued)**:**

b) Options and restricted stocks granted to consultants, directors, and other service providers:

	Year ended December 31,					
	2017		2018		2019	
	Number of Options/ restricted stock	Weighted average exercise price	Number of options/ restricted stock	Weighted average exercise Price	Number of options/ restricted stock	Weighted average exercise price
Outstanding at beginning of year	20,800	$ 31.56	20,000	$ 32.82	15,000	$ 33.70
Changes during the year:						
Expired	800	0.001	5,000	30.20		
Outstanding at end of year	20,000	32.82	15,000	33.70	15,000	33.70
Exercisable at end of year	20,000	$ 32.82	15,000	$ 33.70	15,000	$ 33.70

c) The following tables summarize information concerning outstanding and exercisable options and restricted stock as of December 31, 2019:

	December 31, 2019				
	Options outstanding			Options exercisable	
Exercise prices	Number of options outstanding at end of year	Weighted average remaining contractual life	Number of options exercisable	Weighted average remaining contractual life
$ 2.00	80,000	9.73	5,000	9.73
$ 4.69	160,000	9.50	20,000	9.50
$ 5.10	228,062	8.65	72,687	8.54
$ 5.60	258,126	7.09	120,626	5.24
$ 17.20	149,209	4.39	149,209	4.39
$ 23.70	90,000	1.84	90,000	1.84
$ 33.70	15,000	0.62	15,000	0.62
$ 69.00	68,000	0.15	68,000	0.15
$ 96.60	6,800	0.83	6,800	0.83
	1,055,197		547,322	

d) The following table illustrates the effect of share-based compensation on the statement of operations:

	Year ended December 31,		
(U.S. dollars in thousands)	2017	2018	2019
Research and development expenses	$ 182	$ 310	$ 513
Selling, general and administrative expenses	155	204	322
	$ 337	$ 514	$ 835

b. Private and 144A Offerings

2. On July 24, 2017, the Company entered into a Note Purchase Agreement with certain institutional investors relating to the private issuance and sale by the Company of $10.0 million in aggregate principal amount of its 2021 Notes. The 2021 Notes were issued pursuant to the base indenture dated December 7, 2016. Concurrently, the Company exchanged with certain existing note holders $9.0 million aggregate principal amount of the Company's outstanding 2018 Notes for $8.55 million aggregate principal amount of newly issued 2022 Notes (as described in note 10c). See also note 10c.

NOTE 9 – SHARE CAPITAL (continued):

3. On May 22, 2018, the Company agreed to a privately negotiated exchange with certain existing note holders to exchange $3,423,000 aggregate principal amount of the Company's outstanding 2018 Notes for 261,363 shares of the Company's common stock and $2.23 million in cash to cover outstanding principal and accrued interest on the exchanged 2018 Notes. See also note 10a.

NOTE 10 - CONVERTIBLE NOTES

a. 4.5% Convertible Notes ("2018 Notes")

On September 18, 2013, the Company completed a private placement of $69.0 million in aggregate principal amount of Senior Convertible Notes (the "2018 Notes") which accrued interest at a rate of 4.50% per year. In December 2016, $54.1 million aggregate principal amount of 2018 Notes were exchanged for 2021 Notes and shares of common stock (see also note 10b) and in July 2017, $9.0 million aggregate principal amount of 2018 Notes were exchanged for 2022 Notes as defined in note 10c (see also note 10c). On June 2018, the Company exchanged $3.423 million aggregate principal amount of the Company's 2018 Notes for 261,363 shares of Common Stock and approximately $2.23 million in cash and delivered the necessary funds under the indenture governing the 2018 Notes to effectively discharge such notes, which was $2.53 million. On September 15, 2018, the 2018 Notes matured and were paid in full.

The following table sets forth total interest expense recognized for the years ended December 31, 2017 and 2018 related to the 2018 Notes:

	December 31,	
(*U.S. dollars in thousands*)	**2017**	**2018**
Contractual interest expense	$ 501	$ 139
Amortization of debt issuance costs and debt discount	71	15
Gain from early redemption	-	(32)
Total	$ 572	$ 122

b. 7.5% Convertible Notes ("2021 Notes")

On December 1, 2016, the Company entered into a note purchase agreement with institutional investors, which held part of the 2018 Notes (the "2016 Purchasers"), relating to the sale by the Company of $22.5 million aggregate principal amount of 7.50% Senior Secured Convertible Notes due 2021 in a private placement pursuant to Section 4(a)(2) under the Securities Act of 1933, as amended (the "Securities Act"). Concurrently with the consummation of the private placement of the 2021 Notes, the Company entered into a privately negotiated exchange agreement (the "2016 Exchange Agreement") with certain existing note holders identified therein to exchange $54.1 million aggregate principal amount of the Company's outstanding 2018 Notes for (i) $40.186 million aggregate principal amount of 2021 Notes, (ii) 2,384,673 shares of Common Stock and (iii) cash, equal to the accrued and unpaid interest on the 2018 Notes and any fractional shares. The closing date of the purchase agreement and the 2016 Exchange Agreement was December 7, 2016. The issuance of the 2021 Notes and shares in the exchange and the private placement were made in reliance on the exemption from the registration requirements of the Securities Act pursuant to Section 4(a)(2) thereof. The net proceeds from the private placement were $19.7 million, after deducting the placement agent's fees and the Company's estimated offering expenses.

In connection with the completion of the exchange and the private placement, the Company entered into the 2016 Indenture. The 2021 Notes accrue interest at a rate of 7.50% per year, payable semiannually in arrears on May 15 and November 15 of each year, beginning on May 15, 2017. A portion of the interest payable may be made in shares of Common Stock at the Company's election. The Notes will mature on November 15, 2021.

On July 24, 2017, the Company entered into another note purchase agreement with certain institutional investors relating to the private issuance and sale by the Company of $10.0 million in aggregate principal amount of its 2021 Notes. The 2021 Notes were issued pursuant to the 2016 Indenture dated (December 7, 2016). The net proceeds from this purchase agreement were $9.5 million, after deducting the Company's offering expenses.

NOTE 10 – CONVERTIBLE NOTES (continued):

Holders may convert their 2021 Notes at any time. The initial conversion rate for the 2021 Notes is 117.64706 shares of the Common Stock for each $1,000 principal amount of 2021 Notes (equivalent to an initial conversion price of approximately $8.50 per share of the Common Stock). Upon conversion, the Company may settle the 2021 Notes by paying or delivering, as the case may be, cash, shares of Common Stock or a combination thereof, at the Company's election.

During the year ended December 31, 2018, note holders converted $1.15 million aggregate principal amount of the 2021 Notes into a total of 153,742 shares of Common Stock and cash payments of approximately $15,887, in the aggregate. As of December 31, 2019, a total of $57.9 million aggregate principal amount of the 2021 Notes were outstanding.

Prior to the maturity date, the Company may redeem in cash:

a) any or all of the 2021 Notes if the last reported sale price of the common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days exceeds 150% of the conversion price on each applicable trading day, or

b) all of the 2021 Notes then outstanding if the aggregate principal amount of the 2021 Notes then outstanding is less than 15% of the aggregate principal amount of the notes issued.

No redemption was made during the years 2018 and 2019.

The 2021 Notes are guaranteed by the Restricted Subsidiaries (as defined in the 2016 Indenture) and are secured by a first-priority security interest in all of the present and after-acquired assets of the Company and each of the Restricted Subsidiaries (the "Collateral"), including, but not limited to, (i) 100% of the capital stock of the Guarantors (as defined in the 2016 Indenture) and each Restricted Subsidiary of the Company that is held by the Company or any Restricted Subsidiary, (ii) intellectual property, including all copyrights, copyright licenses, patents, patent licenses, software, trademarks, trademark licenses and trade secrets and other proprietary information, including, but not limited to, domain names, (iii) all cash, deposit accounts, securities accounts, commodities accounts and contract rights, (iv) all real property and leased property, subject to applicable minimum thresholds, as set forth in the 2016 Indenture, and (v) all other tangible and intangibles of the Company and the Guarantors. In connection with the grant of such liens, the Company entered into certain agreements with both Wilmington Savings Fund Society, FSB, as collateral agent in the United States, and with Altshuler Shaham Trusts Ltd., as security trustee in Israel. The 2016 Indenture restricts the ability of the Company, the Subsidiaries and any future subsidiaries to make certain investments, including transfers of the Company's assets that constitute collateral securing the 2016 Notes, in its existing and future foreign subsidiaries, subject to certain exceptions.

Upon (i) the occurrence of a fundamental change (as defined in the 2016 Indenture) or (ii) if the Company calls the 2021 Notes for redemption as described below (either event, a "make-whole fundamental change") and a holder elects to convert its 2021 Notes in connection with such make-whole fundamental change, the Company will, in certain circumstances, increase the conversion rate by a number of additional shares (the "Additional Shares"). In no event will the conversion rate exceed the maximum conversion rate, which is 178.73100 shares per $1,000 principal amount of 2021 Notes, which amount is inclusive of repayment of the principal of the 2021 Notes.

If a fundamental change occurs at any time, holders will have the right, at their option, to require the Company to purchase for cash any or all of the 2021 Notes, or any portion of the principal amount thereof, that is equal to $1,000 or an integral multiple of $1,000 in excess thereof, on a date of the Company's choosing that is not less than 20 calendar days nor more than 35 calendar days after the date of the applicable fundamental change company notice. The price the Company is required to pay for a 2021 Note is equal to 100% of the principal amount of such 2021 Note plus accrued and unpaid interest, if any, to, but excluding, the fundamental change purchase date. Under the terms of the 2016 Indenture, the Company is required to maintain a minimum cash balance of at least $7.5 million.

NOTE 10 – CONVERTIBLE NOTES (continued)**:**

As the settlement upon conversion was subject to compliance with the listing standards of the NYSE American, until the Company's stockholders' approval was obtained, the Company was prohibited by these rules from issuing shares in excess of 20% of its outstanding shares (calculated as of December 1, 2016). On April 12, 2017, the Company's stockholders approved the issuance of shares of the Company's Common Stock in excess of 20% of the Company's outstanding shares of Common Stock to settle conversion requests and pay interest on the Company's issued 2021 Notes.

The following table sets forth total interest expense recognized related to the 2021 Notes:

	Year Ended December 31,		
(U.S. Dollars in thousands)	**2017**	**2018**	**2019**
Contractual interest expense	$ 4,434	$ 4,359	$ 4,344
Debt discount amortization	2,309	2,587	2,991
Change in fair value of convertible note embedded derivative	38,061		
Interest payment in connection with conversions	3,918	234	
Loss (income) in connection with conversions	(1,643)	245	
Total	$ 47,079	$ 7,425	$ 7,335

c. 4.5% Convertible Notes Due 2022 ("2022 Notes")

On July 24, 2017, the Company entered into a privately negotiated exchange agreement (the "2017 Exchange Agreement") with certain existing note holders identified therein to exchange $9.0 million aggregate principal amount of the Company's outstanding 2018 Notes for (i) $8.55 million aggregate principal amount of the Company's 4.5% convertible promissory notes due 2022, (ii) $275,000 in cash consideration and (iii) cash equal to the accrued and unpaid interest on the exchanged 2018 Notes. All of the 2022 Notes were converted during the year ended December 31, 2017 into 1,123,964 shares of Common Stock.

The following table sets forth total interest expense recognized related to the 2022 Notes:

(U.S. Dollars in thousands)	Year Ended December 31, 2017
Contractual interest expense	$ 55
Debt premium amortization	(46)
Loss on extinguishment	1,325
Total	$ 1,334

NOTE 11 - FAIR VALUE MEASUREMENT

The Company discloses fair value measurements for financial assets and liabilities. Fair value is based on the price that would be received from the sale of an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date.

The accounting standard establishes a fair value hierarchy that prioritizes observable and unobservable inputs used to measure fair value into three broad levels, which are described below:

Level 1: Quoted prices (unadjusted) in active markets that are accessible at the measurement date for assets or liabilities. The fair value hierarchy gives the highest priority to Level 1 inputs.

Level 2: Observable prices that are based on inputs not quoted on active markets, but corroborated by market data.

Level 3: Unobservable inputs are used when little or no market data is available. The fair value hierarchy gives the lowest priority to Level 3 inputs.

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 and considers counterparty credit risk in its assessment of fair value.

NOTE 11 – FAIR VALUE MEASUREMENT (continued)**:**

The fair value of the financial instruments included in the working capital of the Company is usually identical or close to their carrying value. The fair value of the convertible notes derivative is based on level 3 measurement.

The fair value of the $57.9 million 2021 Notes as of December 31, 2019 is approximately $60.9 million based on a level 3 measurement.

The Company prepared a valuation of the fair value of the 2021 Notes (a Level 3 valuation) as of December 31, 2019. The value of these notes were estimated by implementing the binomial model. The liability component was valued based on the Income Approach. The following parameters were used:

	2021 Notes
Stock price (USD)	3.28
Expected term	1.88
Risk free rate	1.57%
Volatility	90.74%
Yield	11.02%

NOTE 12 - TAXES ON INCOME

a. The Company

Protalix BioTherapeutics, Inc. is taxed according to U.S. tax laws. The Company's income is taxed in the United States at the rate of up to 27%.

On December 22, 2017, the Tax Cuts and Jobs Act (the "Act") was enacted into law. The new legislation represents fundamental and dramatic modifications to the U.S. tax system. The Act contained several key tax provisions that impacted the Company including the reduction of the maximum U.S. federal corporate income tax rate from 35% to 21%, effective January 1, 2018. Other significant changes under the Act included, among others, a one-time repatriation tax on accumulated foreign earnings, a limitation of net operating loss deduction to 80% of taxable income, and indefinite carryover of post-2017 net operating losses. The Act also repealed the corporate alternative minimum tax for tax years beginning after December 31, 2017. Losses generated prior to January 1, 2018 will still be subject to the 20-year carryforward limitation and the alternative minimum tax.

Other impacts due to the Act included the repeal of the domestic manufacturing deduction, modification of taxation of controlled foreign corporations, a base erosion anti-abuse tax, modification of interest expense limitation rules, modification of limitation on deductibility of excessive executive compensation, and taxation of global intangible low-taxed income.

Modification of interest expense limitation rules under the Act provides generally that for taxable years 2018-2021 interest expense deduction shall be limited to 30% of the EBITDA and for taxable years 2022 onwards to 30% of EBIT. Disallowed interest deduction may be carried forward indefinitely. The Company believes that any potential impact (if applicable) of this limitation will be offset by utilization of available net operating losses.

U.S. GAAP requires that the impact of tax legislation be recognized in the period in which the law was enacted.

The Company believes that all future profits of its subsidiaries will be indefinitely reinvested or that there is no expectation to distribute any taxable dividends from these subsidiaries. The determination of the amount of the unrecognized deferred tax liability related to the undistributed earnings is estimated as an immaterial amount.

NOTE 12 – TAXES ON INCOME (continued)**:**

b. Protalix Ltd.

The Israeli Subsidiary is taxed according to Israeli tax laws:

1. **Tax rates**

The income of the Israeli Subsidiary, other than income from "Approved Enterprises," is taxed in Israel at the regular corporate tax rates.

In December 2016, the Economic Efficiency Law (Legislative Amendments for Implementing the Economic Policy for the 2017 and 2018 Budget Years), 2016 was published, introducing a gradual reduction in corporate tax rate from 25% to 23%. However, the law also included a temporary provision setting the corporate tax rate in 2017 at 24%. As a result, the corporate tax rate was 23% in 2018 and is 23% in 2019 and thereafter.

Capital gain on a sale of assets is subject to capital gain tax according to the corporate tax rate in effect in the year during which the assets are sold.

2. **The Law for the Encouragement of Capital Investments, 1959 (the "Encouragement of Capital Investments Law")**

Under the Encouragement of Capital Investments Law, including Amendment No. 60 to the Encouragement of Capital Investments Law as published in April 2005, by virtue of the "Approved Enterprise" or "Benefited Enterprise" status the Israeli Subsidiary is entitled to various tax benefits as follows:

a. **Reduced tax rates**

Income derived from the Approved Enterprise during a 10-year period commencing upon the year in which the enterprise first realizes taxable income is tax exempt, provided that the maximum period to which it is restricted by the Encouragement of Capital Investments Law has not elapsed.

The Israeli Subsidiary has an "Approved Enterprise" plan since 2004 and "Benefited Enterprise" plan since 2009. The period of benefits in respect of the main enterprise of the Company has not yet commenced. The period during which the Company is entitled to benefits in connection with the Benefited Enterprise expires in 2021.

If the Israeli Subsidiary subsequently pays a dividend out of income derived from the "Approved Enterprise" or "Benefited Enterprise" during the tax exemption period, it will be subject to tax on the gross amount distributed (including the company tax on these amounts), at the rate which would have been applicable if such income not been exempted.

b. **Accelerated depreciation**

The Israeli Subsidiary is entitled to claim accelerated depreciation, as provided by Israeli law, in the first five years of operation of each asset, in respect of buildings, machinery and equipment used by the Approved Enterprise and the Benefited Enterprise.

c. **Conditions for entitlement to the benefits**

The Israeli Subsidiary's entitlement to the benefits described above is subject to its fulfillment of conditions stipulated by the law, rules and regulations published thereunder, and the instruments of approval for the specific investment in an approved enterprise. Failure by the Israeli Subsidiary to comply with these conditions may result in the cancellation of the benefits, in whole or in part, and the Subsidiary may be required to refund the amount of the benefits with interest. The Israeli Subsidiary received a final implementation approval with respect to its "Approved Enterprise" from the Investment Center.

NOTE 12 – TAXES ON INCOME (continued)**:**

d. **Amendment of the Law for the Encouragement of Capital Investments, 1959**

In recent years, several amendments have been made to the Encouragement of Capital Investments Law which have enabled new alternative benefit tracks, subject to certain conditions. The Encouragement of Capital Investments Law was amended as part of the Economic Policy Law for the years 2011-2012 (amendment 68 to the Encouragement of Capital Investments Law), which was passed by the Israeli Knesset on December 29, 2010. The amendment sets alternative benefit tracks to those currently in effect under the provisions of the Encouragement of Capital Investments Law. On December 29, 2016, Amendment 73 to the Encouragement of Capital Investments Law was published. This amendment sets new benefit tracks, inter alia, "Preferred Technological Enterprise" and "Special Preferred Technological Enterprise" (the "Capital Investments Law Amendment"). To date, the Company has elected not to have the Capital Investments Law Amendment apply to the Company.

c. Tax losses carried forward to future years

As of December 31, 2019, the Company had aggregate net operating loss ("NOL") carry-forwards equal to approximately $213.1 million that are available to reduce future taxable income as follows:

1. **The Company**

The Company's carry-forward NOLs, equal to approximately $29.0 million (as of December 31, 2018, approximately $26 million), may be restricted under Section 382 of the Internal Revenue Code ("IRC"). IRC Section 382 applies whenever a corporation with NOL experiences an ownership change. As a result of IRC Section 382, the taxable income for any post change year that may be offset by a pre-change NOL may not exceed the general IRC Section 382 limitation, which is the fair market value of the pre-change entity multiplied by the IRC long-term tax exempt rate.

Significant judgment is required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, the Company considered all available evidence, including past operating results, the most recent projections for taxable income, and prudent and feasible tax planning strategies. The Company reassesses its valuation allowance periodically and if future evidence allows for a partial or full release of the valuation allowance, a tax benefit will be recorded accordingly.

2. **Protalix Ltd.**

At December 31, 2019, the Israeli Subsidiary had approximately $184.1 million (as of December 31, 2018, approximately $185 million) of carry-forward NOLs that are available to reduce future taxable income with no limited period of use.

d. Deferred income taxes:

The components of the Company's net deferred tax assets at December 31, 2018 and 2019 were as follows:

	December 31,	
(*U.S. dollars in thousands*)	**2018**	**2019**
In respect of:		
Research and development expenses	$ 6,188	$ 9,247
Other timing differences	(11)	25
Net operating loss carry forwards	49,436	50,236
Valuation allowance	(55,613)	(59,508)
	-	-

Deferred taxes are computed using the tax rates expected to be in effect when those differences reverse.

NOTE 12 – TAXES ON INCOME (continued)**:**

e. Reconciliation of the theoretical tax expense to actual tax expense

The main reconciling item between the statutory tax rate of the Company and the effective rate is the provision for a full valuation allowance in respect of tax benefits from carry forward tax losses due to the uncertainty of the realization of such tax benefits (see above).

f. Tax assessments

In accordance with the Income Tax Ordinance, as of December 31, 2019, all of Protalix Ltd.'s tax assessments through tax year 2014 are considered final. A summary of open tax years by major jurisdiction is presented below:

Jurisdiction:	Years:
Israel	2015-2019
United States (*)	2015-2019

(*) Includes federal, state and local (or similar provincial jurisdictions) tax positions.

NOTE 13 - SUPPLEMENTARY FINANCIAL STATEMENT INFORMATION

Balance sheets:

	December 31,	
(*U.S. dollars in thousands*)	**2018**	**2019**
a. Other assets:		
Institutions	$ 574	$ 604
State of Israel (see note 6a)	190	26
Restricted deposit	561	820
Prepaid expenses	453	314
Sundry	99	68
	$ 1,877	$ 1,832

	December 31,	
(*U.S. dollars in thousands*)	**2018**	**2019**
b. Accounts payable and accruals – other:		
Payroll and related expenses	$ 1,099	$ 1,381
Interest payable	555	555
Provision for vacation	1,658	1,754
Accrued expenses	6,368	7,360
Royalties payable	369	757
Property and equipment suppliers	225	98
	$ 10,274	$ 11,905

NOTE 14 - RELATED PARTY TRANSACTIONS

	Year Ended December 31,		
(*U.S. dollars in thousands*)	**2017**	**2018**	**2019**
Compensation (including share-based compensation) to the non-executive directors	$ 499	$ 467	$ 444

NOTE 15 - SELECTED QUARTERLY FINANCIAL DATA (Unaudited)

Summarized quarterly financial data for the years ended December 31, 2019 and 2018 are set forth in the following tables:

	Three Months Ended							
	2018				2019			
	(U.S. dollars in thousands, except per share data)							
	March 31	June 30	Sept. 30	Dec. 31	March 31	June 30	Sept. 30	Dec. 31
Revenues from selling goods	$ 4,553	$ 2,006	$ 663	$ 1,756	$ 3,530	$ 3,430	$ 5,126	$ 3,780
Revenues from license agreements	2,161	2,832	11,672	8,597	6,909	8,817	9,122	13,979
Operating (loss) profit	(5,151)	(6,744)	(3,741)	(3,672)	(5,534)	(5,839)	(1,544)	2,200
Net (loss) profit for the period	$ (7,239)	$ (8,462)	$ (5,322)	$ (5,434)	$ (7,264)	$ (7,743)	$ (3,560)	$ 291
Net basic and diluted income (loss) per share of common stock	$ (0.5)	$ (0.6)	$ (0. 4)	$ (0. 4)	$ (0.5)	$ (0.5)	$ (0.2)	$ 0.02

NOTE 16 - SUBSEQUENT EVENTS

On March 12, 2020, the Company entered into securities purchase agreements (the “Purchase Agreements”), with certain existing and new institutional and other accredited investors (the “Purchasers”). Pursuant to the Purchase Agreements, the Company, in a private placement in reliance on the exemption from the registration requirements of the Securities Act (the “Private Placement”), agreed to issue and sell to the Purchasers an aggregate of approximately 17.6 million unregistered shares of Common Stock at a price per share of $2.485. Upon the closing, the Company will generate gross proceeds equal to approximately $43.7 million in the Private Placement. Each share of Common Stock issued was accompanied by a warrant to purchase one share of Common Stock (the “Warrant Shares”), at an exercise price equal to $2.36.

In accordance with ASC 855 “Subsequent Events” the Company evaluated subsequent events through the date the condensed consolidated financial statements were issued. The Company concluded that no other subsequent events have occurred that would require recognition or disclosure in the consolidated financial statements.

Exhibit 4.7

DESCRIPTION OF CAPITAL STOCK

The following summarizes the material terms of the capital stock of Protalix BioTherapeutics, Inc. We are a Delaware corporation. The rights of our stockholders are governed by the Delaware General Corporation Law (the "DGCL") and by our Certificate of Incorporation, as amended, and our Bylaws, which are exhibits to our Annual Report on Form 10-K filed with the Securities and Exchange Commission (the "Commission") and available at *www.sec.gov*. The following summary is qualified in its entirety by reference to the applicable provisions of the DGCL and our Certificate of Incorporation, as amended, and Bylaws, which are subject to future amendment in accordance with the provisions thereof. Our common stock is the only class of our securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

Authorized Capital Stock

General. Our charter provides that we may issue up to 120,000,000 shares of common stock, par value $0.001 per share, and 100,000,000 shares of preferred stock, par value $0.0001 per share. The number of shares of our common stock issued and outstanding as of a recent date is set forth on the cover page of our most recent Annual Report on Form 10-K or Quarterly Report on Form 10-Q filed with the Commission. We currently have no outstanding shares of preferred stock.

Common Stock

Voting Rights. Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Accordingly, holders of a majority of the shares of common stock entitled to vote in any election of directors may elect all of the directors standing for election.

Dividends. Subject to the preferential rights, if any, of the holders of any outstanding series of our preferred stock, holders of shares of our common stock are entitled to receive dividends when, as and if declared by our Board of Directors (our "Board") out of funds legally available therefor.

Dividend Policy. We have never declared or paid any cash dividends on our capital stock. We currently intend to retain any future earnings to finance the growth and development of our business and therefore do not anticipate paying any cash dividends in the foreseeable future. Any future determination to pay cash dividends will be at the discretion of our Board and will depend upon our financial condition, operating results, capital requirements, covenants in our debt instruments (if any), and such other factors as our Board deems relevant.

Liquidation. In the event of our liquidation, dissolution or winding-up, after payment of all of our debts and liabilities, the holders of our common stock are entitled to share ratably in all remaining assets available for distribution after the payment of debts and liabilities and after provision has been made for each class of stock, if any, having preferences over our common stock. Holders of our common stock, as such, have no preemptive or other rights and there are no redemption provisions applicable to our common stock. All of our outstanding shares of common stock are fully paid and nonassessable. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future. In accordance with the rules of the Tel Aviv Stock Exchange, we are allowed to issue securities with preferential rights relating to dividends, but such securities may not have voting rights.

Other Rights. The holders of our common stock have no preemptive rights and no rights to convert their common stock into any other securities, and our common stock is not subject to any redemption or sinking fund provisions.

Preferred Stock

Our Certificate of Incorporation, as amended, authorizes the issuance of up to 100,000,000 shares of preferred stock with such voting rights, rights of redemption and other relative rights and preferences as may be determined from time to time by our Board. Accordingly, our Board is empowered, without stockholder approval, to issue preferred stock with dividend, liquidation, conversion, voting or other rights which could adversely affect the voting power or other rights of the holders of our common stock. The preferred stock could be utilized, under certain circumstances, as a method of discouraging, delaying or preventing a change in control of our company.

Anti-Takeover Effects of Provisions of Delaware Law, Our Certificate of Incorporation, as Amended, and Our By-laws

Delaware statutory law, our Certificate of Incorporation, as amended, and our Bylaws contain provisions that could make acquisition of our Company by means of a tender offer, a proxy contest or otherwise more difficult. These provisions are intended to discourage certain types of coercive takeover practices and takeover bids that our Board may consider inadequate and to encourage persons seeking to acquire control of us to first negotiate with our Board. We believe that the benefits of increased protection of our ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging takeover or acquisition proposals because, among other things, negotiation of these proposals could result in an improvement of their terms. The description of our Certificate of Incorporation, as amended, and our Bylaws set forth below is only a summary and is qualified in its entirety by reference to our amended and restated certificate of incorporation and amended and restated Bylaws, which are exhibits to our most recent Annual Report on Form 10-K.

Blank Check Preferred Stock. Our amended and restated certificate of incorporation permits us to issue, without any further vote or action by the stockholders, up to 100,000,000 shares of preferred stock in one or more series and, with respect to each such series, to fix the number of shares constituting the series and the designation of the series, the voting powers (if any) of the shares of the series, and the preferences and relative, participating, optional and other rights, if any, and any qualifications, limitations or restrictions, of the shares of such series. The ability to issue such preferred stock could discourage potential acquisition proposals and could delay or prevent a change in control.

Number of Directors; Filling Vacancies; Removal. Our Bylaws provide that the number of directors which shall constitute the whole of the Board shall be fixed from time to time by resolution of the Board. Directors shall be elected by a plurality vote of the shares represented in person or by proxy at the annual meeting of stockholders in each year and entitled to vote on the election of directors. Elected directors shall hold office until the next annual meeting and until their successors shall be duly elected and qualified. Directors need not be stockholders. If, for any cause, the Board shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient at a special meeting of stockholders called for that purpose in the manner provided in our Bylaws. In addition, our amended and restated certificate of incorporation and amended and restated Bylaws provide that a Board vacancy resulting from the death, removal or resignation of a director, as well as a vacancy resulting from an increase in the number of directors or if the stockholders fail at any meeting of stockholders at which directors are to be elected to elect the number of directors then constituting the whole Board, may be filled solely by the affirmative vote of a majority of the remaining directors then in office even though that may be less than a quorum of the Board.

Special Meetings. Special Meetings of our stockholders may be called, for any purpose or purposes, by the Chairman of the Board or the President or the Board of Directors at any time. Upon written request of any stockholder or stockholders holding in the aggregate not less than 10% of all of the votes entitled to be cast on any issue proposed to be considered at the Special Meeting signed, dated and delivered in person or sent by registered mail to the Chairman of the Board, President or Secretary of our company, the Secretary shall call a special meeting of stockholders to be held at the principal office of the corporation or at such place and at such time as the Secretary may fix, such meeting to be held not less than 10 nor more than 60 days after the receipt of such request, and if the Secretary shall neglect or refuse to call such meeting within seven days after the receipt of such request, the stockholder making such request may do so.

No Stockholder Action by Written Consent Unless Approved by the Board. Our Bylaws requires that all actions to be taken by stockholders must be taken at a duly called annual or special meeting, and stockholders are not permitted to act by written consent. These provisions will make it more difficult for stockholders to take an action opposed by our Board.

Section 203 of the Delaware General Corporation Law. Section 203 of the DGCL provides that, subject to certain specified exceptions, a corporation will not engage in any "business combination" with any "interested stockholder" for a three-year period following the time that such stockholder becomes an interested stockholder unless (1) before that time, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder, (2) upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced (excluding certain shares) or (3) on or after such time, both the board of directors of the corporation and at least $66^{2}/_{3}$% of the outstanding voting stock which is not owned by the interested stockholder approves the business combination. Section 203 of the DGCL generally defines an "interested stockholder" to include (x) any person that owns 15% or more of the outstanding voting stock of the corporation, or is an affiliate or associate of the corporation and owned 15% or more of the outstanding voting stock of the corporation at any time within three years immediately prior to the relevant date and (y) the affiliates and associates of any such person.

Section 203 of the DGCL generally defines a "business combination" to include (1) any merger or consolidation with an interested stockholder or other entity if the merger or consolidation is caused by the interested stockholder and as a result section (a) of Section 203 is no longer applicable to the surviving entity, (2) sales or other dispositions of 10% or more of the corporation's assets with or to an interested stockholder, (3) certain transactions resulting in the issuance or transfer to the interested stockholder of any stock of the corporation or its subsidiaries, (4) certain transactions which would increase the proportionate share of the stock of the corporation or its subsidiaries owned by the interested stockholder and (5) receipt by the interested stockholder of the benefit (except proportionately as a stockholder) of any loans, advances, guarantees, pledges, or other financial benefits.

We have elected not to be subject to Section 203 of the DGCL.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company.

Listing Information

Our common stock is listed on the NYSE American and the Tel Aviv Stock Exchange under the symbol "PLX."

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-230604) and on Form S-8 (No. 333-148983, No. 333-182677, No. 333-203960 and No. 333-225526) of Protalix BioTherapeutics, Inc. of our report dated March 12, 2020 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ Kesselman & Kesselman

Kesselman & Kesselman
Certified Public Accountants (lsr.)
A member firm of PricewaterhouseCoopers International Limited

Tel-Aviv, Israel
March 12, 2020

EXHIBIT 31.1

CERTIFICATION

I, Dror Bashan, certify that:

1. I have reviewed this Annual Report on Form 10-K of Protalix BioTherapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)**)** for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 12, 2020

/s/ Dror Bashan
Dror Bashan
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION

I, Eyal Rubin, certify that:

1. I have reviewed this Annual Report on Form 10-K of Protalix BioTherapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)**)** for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 12, 2020

/s/ Eyal Rubin
Eyal Rubin
Sr. Vice President, Chief Financial Officer, Treasurer

EXHIBIT 32.1

PROTALIX BIOTHERAPEUTICS, INC.

CERTIFICATION

In connection with the Annual Report of Protalix BioTherapeutics, Inc. (the "Company") on Form 10-K for the period ended December 31, 2019 as filed with the Securities and Exchange Commission (the "Report"), I, Dror Bashan, President and Chief Executive Officer of the Company, hereby certify as of the date hereof, solely for purposes of Title 18, Chapter 63, Section 1350 of the United States Code, that to my knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company at the dates and for the periods indicated.

This Certificate is being furnished to the Securities and Exchange Commission as an exhibit to the Report.

Dated: March 12, 2020

/s/ Dror Bashan
Dror Bashan
President and Chief Executive Officer

EXHIBIT 32.2

PROTALIX BIOTHERAPEUTICS, INC.

CERTIFICATION

In connection with the Annual Report of Protalix BioTherapeutics, Inc. (the "Company") on Form 10-K for the period ended December 31, 2019 as filed with the Securities and Exchange Commission (the "Report"), I, Eyal Rubin, Vice President and Chief Financial Officer of the Company, hereby certify as of the date hereof, solely for the purposes of Title 18, Chapter 63, Section 1350 of the United States Code, that to my knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company at the dates and for the periods indicated.

This Certificate is being furnished to the Securities and Exchange Commission as an exhibit to the Report.

Dated: March 12, 2020

/s/ Eyal Rubin
Eyal Rubin
Sr. Vice President and Chief Financial Officer