REPLIGEN CORP
Form 10-K
February 25, 2016
Table of Contents

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2015

OR

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

For the transition period from to

Commission File Number 000-14656

REPLIGEN CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	04-2729386
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

41 Seyon Street, Bldg. 1, Suite 100

Waltham, MA	02453
(Address of principal executive offices)	(Zip Code)

Registrant s telephone number, including area code: (781) 250-0111

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

Title of Each Class	Name of Exchange on Which Registered
Common Stock, $0.01 Par Value Per Share	The NASDAQ Stock Market LLC

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 x.

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 x.

Indicate by checkmark 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 x No ¨.

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes x No ¨.

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

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

Large accelerated filer x	Accelerated filer ¨	Non-accelerated filer ¨ (Do not check if a smaller reporting company)	Smaller reporting company ¨

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates as of June 30, 2015, the last business day of the registrant s most recently completed second fiscal quarter, was $1,348,697,533.

The number of shares of the registrant s common stock outstanding as of February 18, 2016 was 33,031,533.

Documents Incorporated By Reference

The registrant intends to file a proxy statement pursuant to Regulation 14A within 120 days of the end of the fiscal year ended December 31, 2015. Portions of such proxy statement are incorporated by reference into Part III of this Annual Report on Form 10-K.

Table of Contents

Table of Contents

Table of Contents

PART I

ITEM 1. BUSINESS

The following discussion of our business contains forward-looking statements that involve risks and uncertainties. When used in this report, the words intend, anticipate, believe, estimate, plan and expect and similar expressions as they relate to us are included to identify forward-looking statements. Our actual results could differ materially from those anticipated in these forward-looking statements and are a result of certain factors, including those set forth under Risk Factors and elsewhere in this Annual Report on Form 10-K.

Overview

Repligen Corporation (Repligen, the Company or we) is a bioprocessing company focused on the development, production and commercialization of innovative products used in the process of manufacturing biologic drugs (bioprocessing). Biologic drugs include monoclonal antibodies, recombinant proteins and vaccines and represent a growing area of drug development. Our customers include leading life sciences companies, global biopharmaceutical companies, and contract manufacturers worldwide. The high-value technologies that we provide enable biologics manufacturers to cost-effectively increase drug production yields while retaining the highest quality and safety standards.

Repligen is a longtime global market leader in the manufacture of Protein A ligands, sold to life sciences companies under long term supply agreements. Protein A is a critical reagent used to purify monoclonal antibodies (mAbs) on the market (over 50) or in development (over 300). In December 2011, we strengthened our Protein A market leadership with the acquisition of Novozymes s bioprocessing business (Novozymes) in Lund, Sweden (the Novozymes Acquisition).

We established and have executed on a diversification strategy to selectively expand the number of bioprocessing products that we sell directly to end users. With the Novozymes Acquisition, we gained a portfolio of growth factors, led by LONG® R3 IGF-1, which is used in cell culture media to increase productivity. LONG®R3 IGF-1 is sold in collaboration with MilliporeSigma (formerly Sigma Aldrich), our exclusive distributor for the product. We also developed and directly market our OPUS® process-scale line of pre-packed chromatography columns for the capture and purification of biologic drugs in clinical development. Most recently, in June 2014, we acquired the business of Refine Technology, including Refine s Alternating Tangential Flow (ATF) System, a best-in-class device used to generate extremely high cell concentrations during the fermentation step of the biologic drug manufacturing process (the Refine Business and the acquisition of the Refine Business, the Refine Acquisition).

We market our products globally through a direct commercial organization in the U.S., Europe and Asia, as well as through strategic partners in select markets. In 2014 and 2015, we invested in expanding our global commercial organization, adding sales, marketing and applications personnel who interact directly with our end users. Our customer base comprises of leading life sciences companies, major contract manufacturers and 20 of the top 25 biopharmaceutical companies.

Customers use our products to produce initial quantities of drug for clinical studies, then scale-up to larger volumes as the drug progresses to commercial production following regulatory approval. Detailed specifications for a drug s manufacturing process are included in applications that must be approved by regulators, such as the U.S. Food and Drug Administration and the European Medicines Agency, throughout the clinical trial process and prior to final commercial approval. As a result, products that become part of the manufacturing specifications of a late-stage clinical or commercial process can be very sticky due to the regulatory hurdles, costs and uncertainties associated with displacing them.

Table of Contents

Many of our products are early in their adoption cycle, and together with the expansion of our commercial organization and strategic acquisitions, have contributed to product revenue expansion from $41.8 million in 2012 to $83.5 million in 2015. To meet increased demand for our products, we have increased the volume and scale of manufacturing at our two manufacturing facilities in the U.S. and Sweden.

We were incorporated in May 1981 under the laws of the State of Delaware. Our principal executive offices are located at 41 Seyon Street, Waltham, Massachusetts 02453 and our telephone number is (781) 250-0111. We conduct manufacturing in Waltham and at our facility in Lund, Sweden.

Our Market Opportunity

The global biologics drug market is estimated to be over $200 billion. This market includes mAbs, proteins and vaccines. mAb-based biologics alone accounted for approximately $80 billion of revenue, and represented six of the top 10 best-selling drugs across the pharmaceutical industry, in 2014. Industry sources project the biologics market to grow at approximately 8-10% annually over the next five years, driven by strength in the mAb class of biologics. This strength is evidenced by the rate of new approvals, expanded labels for marketed mAbs and the emergence of biosimilar versions of originator mAbs. In 2015, a record of nine therapeutic mAbs were approved by the U.S. Food and Drug Administration (FDA) to treat a diverse range of diseases, including the first-ever approvals of mAbs to control LDL or bad cholesterol. There are currently more than 300 mAbs in various stages of clinical development, addressing a wide range of medical conditions including asthma, migraines and Alzheimer s disease.

In addition to investments in the discovery and development of novel biologic drugs, there has been substantial investment in follow-on products (biosimilars and biobetters) by generic and specialty pharmaceutical as well as large biopharmaceutical companies. We believe development of follow-on products is accelerating as the first major mAbs begin to come off patent in the EU and U.S. For example, there are at least 12 companies attempting to market the first Humira® (adalimumab) biosimilar, which faces patent expiration in the U.S. at the end of 2016. Also, due to the high cost of biologic drugs, many countries in the developing and emerging markets have been aggressively investing in biomanufacturing capabilities to supply lower cost alternatives or biosimilars for the local markets We believe they are focused on innovative technologies that offer greater manufacturing flexibility, production yields and lower-costs through improved process efficiencies.

The Biologics Manufacturing Process

Manufacturing biologic drugs requires three fundamental steps. First, upstream manufacturing involves the production of the biologic by living cells that are grown in a bioreactor under controlled conditions. These cells, or factories, are highly sensitive to the conditions under which they grow, including the composition of the cell culture media and the growth factors used to stimulate increased cell growth and protein production, or titre. In the second, downstream step, the biologic must be separated and purified, typically through various filtration and chromatography steps. In the third stage of the process, the purified biologic drug is formulated, quality controlled and packaged into its final injectable form.

Biologics are generally high value therapies. Given the inherent complexities of the process and drug product, we have observed that manufacturers are seeking and investing in innovative technologies that address pressure points in the production process in order to improve yields. We see that manufacturers are also seeking technologies that reduce cost of goods as the biologic drug moves through clinical stages and into commercial processes by adopting single-use technologies as well as other products that confer more flexibility and efficiency.

Table of Contents

Our Products

Downstream Products

Protein A

We are the leading provider of Protein A ligands, an essential component of Protein A chromatography resins (media) used in the purification of virtually all monoclonal antibody-based drugs on the market (more than 50) or in development (more than 300). We manufacture multiple forms of Protein A ligands under long term supply agreements for major life sciences companies including GE Healthcare and MilliporeSigma, who in turn sell their Protein A chromatography media to end users (biopharmaceutical manufacturers). We have two manufacturing sites, one in Lund, Sweden and another in Waltham, MA, collectively supporting overall global demand for our Protein A ligands. On February 23, 2016, we amended our long term supply agreements with GE Healthcare to, among other things, extend the terms of the supply agreement relating to our Lund, Sweden facility through 2019. The supply agreement relating to our Waltham, MA facility runs through 2021. This dual manufacturing capability gives us strong business continuity and reduces overall supply risk for our major customers.

Protein A chromatography media is considered the industry standard for purification of mAbs, due to the ability of Protein A to selectively bind to or capture mAbs from crude protein mixtures. Protein A media is packed into chromatography columns as the standard first step in a purification process. As a result of Protein A s high affinity for antibodies, the mAb product is highly purified and concentrated within this first capture step before moving to polishing steps. The global Protein A media market that we supply generates annual revenues of $350-$400 million. We expect continued growth for our Protein A ligands as new drugs are approved and biosimilar manufacturing accelerates.

Chromatography products

Our chromatography portfolio includes a number of products used in the downstream purification and quality control of biological drugs. The main driver of growth in this portfolio is our OPUS® pre-packed chromatography column line. Our other products include Protein A chromatography resins used in a small number of commercial drug processes and ELISA test kits used by quality control departments to detect and measure the presence of leached Protein A in the final product.

Chromatography columns, packed with chromatography media, are used in biomanufacturing to purify the contents of a bioreactor. For late-stage clinical and large commercial processes, stainless steel columns are standard, and are packed in-house by the biomanufacturer. For clinical stage manufacturing, biomanufacturers value the quick turnover, cost savings and convenience of using pre-packed columns such as OPUS® versus traditional glass columns.

OPUS columns are pre-packed with purification media and are an efficient plug-and-play solution for our customers, and is a growing area of our business. As biomanufacturers have become acutely focused on improving the drug development process, they are moving towards flexible manufacturing and disposable solutions such as OPUS. Over the past three years we have observed customers moving away from in-house solutions (self-packed glass columns). They are starting to adopt the OPUS ready-to-use format due to convenience, flexibility and consistent product performance. OPUS columns save labor time, reduce overall costs and improve overall manufacturing efficiency, allowing biomanufacturers to reassign resources to higher value-add processes.

Our OPUS line is distinctly open platform, providing desirable opportunities for customization. For example, most biopharmaceutical manufacturers utilize three different chromatography media in a given process and our flexible columns are designed to meet these needs. We differentiate ourselves in the pre-packed column space by packing any brand of chromatography media in OPUS to any bed height, ensuring the most convenient and efficient process for end users. The plug-and-play nature of our OPUS columns make them ideal for purification of antibodies and recombinant proteins. With the launch of OPUS 45 cm diameter columns in 2014 and 60 cm columns in 2015, we have further differentiated ourselves from our competitors who offer a limited number of column diameter and resin (media) options. By offering these larger columns, we are making inroads in the glass column market which customers typically self-pack.

Table of Contents

Pre-packed chromatography columns are at the early stages of adoption; we estimate that currently, we and our competitors collectively capture approximately 30% of a $165 million addressable market. As our sales force expands and we increase the number of call points, we are seeing more multi-site adoption of our OPUS® prepacked columns, including increased use by contract manufacturers, where quick turnover of multiple production runs is critical to profitability. We expect continued strong growth for this product line as we aim to expand geographically and provide best-in-class service and support.

Upstream Products

Growth factors

Most biopharmaceuticals are produced through a mammalian cell fermentation process. In order to stimulate increased cell growth and maximize overall yield from a bioreactor, manufacturers often add growth factors, such as insulin, to the cell culture fermentation media. As part of the Novozymes Acquisition, we acquired several cell culture growth factor additives. Among those products is LONG®R3 IGF-1, our insulin-like growth factor that has been shown to be 100 times more biologically potent than insulin (the industry standard), thereby increasing recombinant protein production in cell culture fermentation applications. LONG®R3 IGF-1 is currently used in the manufacture of several commercial biopharmaceutical products and is sold through a distribution partnership with MilliporeSigma. Our goal over the last few years with MilliporeSigma has been to focus on pipeline development and work with customers already familiar with the product to more broadly adopt LONG®R3 IGF-1 as a platform product.

We estimate that the current market for cell culture growth factors is $75-$80 million. We are gaining share of this market as customers displace insulin with LONG®R3 IGF-1. We anticipate continued growth for this product group as our pipeline of opportunities advances from early-stage clinical to late-stage clinical and commercial manufacturing processes.

ATF Systems

The ATF System is a technologically advanced filtration device used to continuously remove cellular metabolic waste products during the course of a fermentation run, freeing healthy cells to continue producing the biologic drug of interest. The ATF System is designed to both increase the density of cells in a bioreactor and extend the production run, resulting in significantly greater product yield of up to two- to three-fold as well as reduced costs. This is important to biomanufacturers who seek to maximize output from their existing facilities. ATF Systems consist of a stainless steel housing that contains a consumable filter and an associated pump and controller. We sell the ATF System in a variety of sizes suitable for use in laboratory and scale-up all the way to production bioreactors as large as 2,000 liters. ATF Systems are used in the production of several FDA-approved monoclonal antibodies.

Following our acquisition of the ATF System from Refine Technology in 2014, we integrated the production of ATF into our operations in Waltham, MA.

We estimate that the current market for cell retention devices is approximately $125-150 million. Within this market, we expect continued growth for our ATF franchise over the next several years, as biologics manufacturing accelerates globally and as large pharmaceutical customers who have evaluated the system adopt the technology as platform. The ATF System strengthens our upstream fermentation business and significantly broadens our technology base.

Research and Development

Our research activities are focused on developing new bioprocessing products. Specifically, we plan to focus these efforts on our ATF, OPUS and chromatography portfolio, including next generation Protein A ligands. Research and development expenses totaled approximately $5.7 million, $5.6 million and $7.3 million for the years ended December 31, 2015, 2014 and 2013, respectively.

Table of Contents

Licensing Agreements

HDAC Agreement with BioMarin

On January 21, 2014, we out-licensed our HDACi portfolio, which includes the Friedreich s ataxia program, to BioMarin Pharmaceuticals Inc. Friedreich s ataxia is an inherited disease that causes progressive damage to the nervous system resulting in symptoms ranging from impaired walking and speech problems to heart disease. Pursuant to the terms of the agreement, BioMarin agrees to use commercially reasonable efforts to commercialize HDACi portfolio product until the later of (i) the expiration of the last-to-expire valid claim of an issued and unexpired patent or pending patent application claiming a compound included in the agreement or (ii) 10 years. Under the terms of the agreement, Repligen received an upfront payment of $2 million in January 2014 from BioMarin and we have the potential to receive up to $160 million in future milestone payments for BioMarin s development, regulatory approval and commercial sale of portfolio compounds included in the agreement. These potential milestone payments are approximately 37% related to clinical development and 63% related to initial commercial sales in specific geographies. In addition, Repligen is eligible to receive royalties on sales of qualified products developed. The royalty rates are tiered and begin in the mid-single-digits for the first HDACi portfolio product and for the first non-HDACi portfolio product with lesser amounts for any backup products developed under the agreement. Repligen s receipt of these royalties is subject to customary offsets and deductions. There are no refund provisions in this agreement. Royalties under this agreement are paid on a country-by-country basis during the period beginning on the first commercial sale of a compound in such country, until the later of: (i) the expiration of exclusivity period granted by a governmental authority to prevent the entry of generic product into such country; (ii) the expiration of the last-to-expire valid claim of an issued and unexpired patent or pending patent application claiming such compound in such country; or (iii) ten years following the first commercial sale of such HDACi portfolio product in any country. Royalty payments on products derived from the compounds included in the agreement are calculated by multiplying net sales of such product for the calendar year by an applicable royalty rate based on incremental net sale amounts. We have no further obligations to BioMarin.

SMA Agreement with Pfizer

On December 28, 2012, we entered into an exclusive worldwide licensing agreement (the License Agreement) with Pfizer to advance the SMA program, which is led by RG3039 and also includes backup compounds and enabling technologies. Under the terms of the License Agreement, we received $5 million from Pfizer as an upfront payment on January 22, 2013, a $1 million milestone payment on September 4, 2013 and a $1 million milestone payment on December 28, 2014. On January 26, 2015, Pfizer notified us that they were terminating the License Agreement for convenience, effective as of April 26, 2015. We do not intend to invest additional resources to the development of the SMA program.

RG1068

Our clinical development portfolio previously included RG1068, a synthetic human hormone we had developed as a novel imaging agent for the improved detection of pancreatic duct abnormalities in combination with magnetic resonance imaging in patients with pancreatitis and potentially other pancreatic diseases. On December 23, 2014, Innovate Biopharmaceuticals, Inc. (Innovate) acquired our RG1068 program for a nominal amount. Innovate is solely responsible for future development and commercialization of RG1068. If Innovate gains marketing approval and successfully commercializes RG1068, Repligen is eligible to receive royalties through the latter of ten years after the first commercial sale or the entry of a generic equivalent into the U.S. market.

Sales and Marketing

Our sales and marketing strategy supports our objective of establishing Repligen as a leading provider of products and services, addressing upstream, downstream and quality control needs of bioprocessing customers in

Table of Contents

the biotechnology and biopharmaceutical industries. Through our products and brands, including Protein A, LONG®R3 IGF-1, OPUS®, ATF we provide premiere offerings and services to our bioprocess customers. We are committed to being a partner of choice for our customers with distributor and supply agreements in place for our growth factor and Protein A products with GE Healthcare and MilliporeSigma. On February 23, 2016, we amended our long term supply agreements with GE Healthcare to, among other things, extend the terms of the supply agreement relating to our Lund, Sweden facility through 2019. The supply agreement relating to our Waltham, MA facility runs through 2021. We have invested in our commercial organization and now have 23 sales, marketing, product management and service individuals providing service and support to our expanding customer base. Our global sales organization has both distributor and direct sales personnel, depending on the market and application area. We will continue to expand our commercial organization. This organization also helps us identify market needs and new technologies that we can license and develop into new products.

Segment and Geographic Areas

We have one reportable segment. Segment and geographical information is contained in Note 2 of the notes to our consolidated financial statements as of and for the years ended December 31, 2015, 2014 and 2013.

Significant Customers and Geographic Reporting

Customers for our bioprocessing products include major life science companies, contract manufacturing organizations, biopharmaceutical companies, diagnostics companies and laboratory researchers.

The following table represents the Company s total revenue by geographic area (based on the location of the customer):

	Years ended December 31,		
	2015	2014	2013
Sweden	37%	38%	35%
United States	28%	33%	51%
United Kingdom	17%	20%	12%
Other	18%	9%	2%
Total	100%	100%	100%

Royalty revenue from Bristol represented 27% of total revenues for the fiscal year ended December 31, 2013; no such revenues were generated in 2014 and 2015.

GE Healthcare, our largest bioprocessing customer, accounted for 37%, 38% and 35% of total revenues in the fiscal years ended December 31, 2015, 2014 and 2013, respectively. MilliporeSigma, our second largest bioprocessing customer, accounted for 29%, 33% and 25% of total revenues in the fiscal years ended December 31, 2015, 2014 and 2013, respectively.

Employees

As of February 18, 2016, we had 168 employees. Of those employees, 12 were engaged in engineering and research and development, 102 in manufacturing, 23 in sales and marketing and 31 in administrative functions. Each of our employees has signed a confidentiality agreement. None of our U.S. employees are covered by collective bargaining agreements. We have two collective bargaining agreements that cover our 61 employees in Sweden, comprising approximately 36% of our total workforce. The current collective bargaining agreements expire on March 31, 2016. We are currently in negotiations to renew these collective bargaining agreements, and the risk of any work stoppage is low. The Company considers its employee relations to be satisfactory.

Patents, Licenses and Proprietary Rights

Repligen considers patents to be an important element in the protection of our competitive and proprietary position and actively, and selectively, pursues patent protection in the United States and in major countries

Table of Contents

abroad. As further described below, Repligen owns or has exclusive rights to a number of U.S. patents and U.S. pending patent applications as well as corresponding foreign patents and patent applications. The expiration of key patents owned or licensed by us or the failure of patents to issue on pending patent applications could create increased competition, with potential adverse effects on our business prospects.

Other forms of market protection, including trade secrets and know-how, are also considered important elements of our proprietary strategy. Our policy is to require each of our employees, consultants, business partners and major customers to execute confidentiality agreements upon the commencement of an employment, consulting, business relationship, or product related audit with us. These agreements provide that all confidential information developed or made known to the other party during the course of the relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. In the case of employees and consultants, the agreements generally provide that all inventions conceived by the individual in the course of rendering services to Repligen shall be our exclusive property.

Protein A

We have developed proprietary technology, trade secrets, and know-how relating to the manufacture of recombinant Protein A at a scale and quality standard which is consistent with the requirements of the biopharmaceutical industry. In addition, in April 2010, we were granted U.S. Patent No. 7,691,608, Nucleic Acids Encoding Recombinant Protein A, which claims a recombinant gene that encodes a Protein A molecule with an amino acid sequence identical to that of the natural Protein A molecule, which has long been commercialized for bioprocessing applications. This U.S. patent, with the term adjustment that was granted, will remain in effect until June 2028. Foreign equivalents of this patent have been issued in Sweden, Netherlands, Great Britain, France, Germany and Canada. The claims of U.S. Patent No. 7,691,608 cover compositions of matter including isolated nucleic acids, expression vectors, bacterial cells that include the nucleic acids, as well as methods of producing truncated Protein A polypeptides, methods of producing affinity chromatography resins, and methods of purifying proteins.

OPUS

In January 2012, Repligen filed a provisional patent application with the U.S. Patent and Trademark Office (USPTO) which covers certain unique features of our OPUS pre-packed columns. Pending claims that relate to these unique features cover the ease and flexibility of column packing, bed height adjustment and cleaning that is improved over existing pre-packed column designs. In January 2013, we filed an international patent cooperation treaty (PCT) application as well as a utility application with the USPTO on the basis of the provisional application. The OPUS pre-packed column patent application is pending in the United States, Australia, Canada, Europe, Hong Kong, India, and Japan.

ATF Systems

As part of the Refine Acquisition, Repligen acquired the exclusive rights to an issued U.S. patent (US 6,544,424) covering the Alternating Tangential Flow (ATF) System and a process related to the filtration of biologic fluids from a bioreactor through hollow fiber filters by the action of a diaphragm pump which creates alternating tangential flow through the filter. The patent expires in 2020. Another patent has been issued in the U.S. covering improvements on the original ATF design that include a screen filter module (US 9,050,547). This family of patents and applications has issued or is pending in Brazil, Canada, China, Europe, India, and Korea. Other additional improvements on the original ATF systems and methods are covered by patent applications pending in one or more of the US, Canada, China, Europe, India, Japan, and Korea.

Spinal Muscular Atrophy

In 2009, Repligen entered into an exclusive license agreement with a non-profit organization, FSMA, now called CureSMA, for worldwide rights to patent applications related to compositions and methods for the

Table of Contents

treatment of spinal muscular atrophy. FSMA had funded the development of these compounds and identified a novel enzyme target (DcpS) that these compounds inhibit. In 2011, we were granted U.S. Patent Nos. 7,888,366 and 7,985,755, both entitled 2,4 Diaminoquinazolines for Spinal Muscular Atrophy, with allowed composition claims that cover both the genus and the species of the chemical structures of the lead clinical candidates. The expiration date of U.S. Patent No. 7,888,366 (the 366 patent) is in 2028 with potential for patent term extension. The expiration date of U.S. Patent No. 7,985,755 (the 755 patent) is in 2027 with potential for patent term extension. U.S. Patent No. 9,067,897, which is a continuation of the 366 patent, was issued in 2015 and expires in 2027. Foreign equivalents of these U.S. patents have been issued and/or are pending in Australia, Canada, Europe, Hong Kong, Japan, and New Zealand.

Pursuant to the License Agreement, we licensed all of our intellectual property related to SMA to Pfizer and Pfizer has assumed responsibility for maintaining existing intellectual property and prosecuting new intellectual property relating to this program. On January 26, 2015, Pfizer issued to us a notice of its termination of the License Agreement for convenience, effective as of April 26, 2015.

Histone Deacetylase Inhibitors

Repligen has entered into an exclusive license agreement with The Scripps Research Institute for worldwide rights to a patent application claiming compounds and methods for treating Friedreich s ataxia with inhibitors of histone deacetylase. We have extended this original work and filed additional patent applications which claim both methods and compositions for treating Friedreich s ataxia. We licensed all of our intellectual property related to HDAC to BioMarin and BioMarin has assumed responsibility for maintaining existing intellectual property and prosecuting new intellectual property relating to this program. On January 21, 2014, we out-licensed our HDAC Inhibitor (HDACi) portfolio to BioMarin Pharmaceuticals Inc. Our out-licensed HDACi portfolio included patent applications in the United States as well as patent applications in Europe, Canada, Japan and Australia. Patents, if any, that are granted in the U.S. based on these patent applications are expected to expire from 2029 to 2032.

Competition

Our bioprocessing products compete on the basis of quality, performance, cost effectiveness, and application suitability with numerous established technologies. Additional products using new technologies that may be competitive with our products may also be introduced. Many of the companies selling or developing competitive products have greater financial and human resources, research and development, manufacturing and marketing experience than we do. They may succeed in developing products that are more effective or less costly than any that we may develop. These competitors may also prove to be more successful in their production, marketing and commercialization activities. We cannot be certain that the research, development and commercialization efforts of our competitors will not render any of our existing or potential products obsolete.

Manufacturing

We manufacture seven commercial forms of Protein A including native Protein A for life sciences companies including GE Healthcare and MilliporeSigma under long-term supply agreements which expire between 2019 and 2021. Native Protein A is manufactured in Sweden, while the recombinant forms are manufactured in Waltham, Massachusetts or in both Waltham, Massachusetts and Sweden. We currently manufacture our growth factor products in Sweden and our OPUS chromatography columns and ATF System products in Waltham, Massachusetts.

We generally purchase raw materials from more than one commercially established company and believe that the necessary raw materials are currently commercially available in sufficient quantities necessary to meet market demand. However, there are only a limited number of suppliers of materials related to the ATF System products, one of which is the primary supplier of materials used for consumable ATF System products.

Table of Contents

We utilize our own facilities in Waltham, Massachusetts and Sweden as well as third party contract manufacturing organizations to carry out certain fermentation and recovery operations, while the purification, immobilization, packaging and quality control testing of our bioprocessing products are conducted at our facilities. Our U.S. facility, located in Waltham, Massachusetts and our Sweden facility, located in Lund, are both ISO 9001 certified and maintain formal quality systems to maintain process control, traceability, and product conformance. We practice continuous improvement initiatives based on routine internal audits as well as external feedback and audits performed by our partners and customers. In addition, we maintain a business continuity management system which focuses on key areas such as contingency planning, security stocks and off-site storage of raw materials and finished goods to ensure continuous supply of our products.

Available Information

We maintain a website with the address www.repligen.com. We are not including the information contained on our website as a part of, or incorporating it by reference into, this Annual Report on Form 10-K. We make available free of charge through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and amendments to these reports, as soon as reasonably practicable after we electronically file such materials with, or furnish such materials to, the Securities and Exchange Commission. Our Code of Business Conduct and Ethics is also available free of charge through our website.

In addition, the public may read and copy any materials that we file with the Securities and Exchange Commission at the Securities and Exchange Commission s Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the Securities and Exchange Commission at 1-800-SEC-0330. Also, our filings with the Securities and Exchange Commission may be accessed through the Securities and Exchange Commission s Electronic Data Gathering, Analysis and Retrieval (EDGAR) system at www.sec.gov.

Table of Contents

ITEM 1A. RISK FACTORS

Investors should carefully consider the risk factors described below before making an investment decision.

If any of the events described in the following risk factors occur, our business, financial condition or results of operations could be materially harmed. In that case the trading price of our common stock could decline, and investors may lose all or part of their investment. Additional risks and uncertainties that we are unaware of or that we currently deem immaterial may also become important factors that affect Repligen.

This Annual Report on Form 10-K contains forward looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward looking statements as a result of certain factors, including the risks faced by us described below and elsewhere in this Annual Report on Form 10-K.

We face competition from numerous competitors, most of whom have far greater resources than we have, which may make it more difficult for us to achieve significant market penetration.

The bioprocessing market is intensely competitive, subject to rapid change and significantly affected by new product introductions and other market activities of industry participants.

Many of our competitors are large, well-capitalized companies with significantly more market share and resources than we have. As a consequence, they are able to spend more aggressively on product development, marketing, sales and other product initiatives than we can. Many of these competitors have:

- significantly greater name recognition;
- larger and more established distribution networks;
- additional lines of products and the ability to bundle products to offer higher discounts or other incentives to gain a competitive advantage;
- greater experience in conducting research and development, manufacturing, clinical trials, marketing, obtaining regulatory approval and entering into collaboration or other strategic partnership arrangements; and
- greater financial and human resources for product development, sales and marketing and patent litigation.

Our current competitors or other companies may at any time develop additional products that compete with our products. If an existing or future competitor develops products that compete with or are superior to our products, our revenue may decline. In addition, some of our competitors may compete by lowering the price of their products. If prices were to fall, we may not be able to improve our gross margins or sales growth sufficiently to maintain and grow our profitability.

We depend on, and expect to continue to depend on, a limited number of customers for a high percentage of our revenues.

The loss of, or a significant reduction in orders from, any of these customers would significantly reduce our revenues and harm our results of operations. If a large customer purchases fewer of our products, defers orders or fails to place additional orders with us, our revenue could decline, and our operating results may not meet market expectations. In addition, if those customers order our products, but fail to pay on time or at all, our liquidity and operating results could be materially and adversely affected. Furthermore, if any of our current or future products compete with those of any of our largest customers, these customers may place fewer orders with us or cease placing orders with us, which would negatively affect our revenues and operating results.

10

Table of Contents

As we evolve from a company dependent on others to commercialize our products to a company selling directly to end users, we may encounter difficulties in expanding our product portfolio and our commercial efforts.

In connection with the Company s decision to focus our efforts on the growth of our core bioprocessing business, we are increasingly seeking to develop and commercialize our own portfolio of products. Our future financial performance will depend, in part, on our ability to successfully develop and acquire additional bioprocessing products. There is no guarantee that we will be able to successfully acquire or develop additional bioprocessing products, and the Company s financial performance will likely suffer if we are unable to do so.

If intangible assets that we recorded in connection with our acquisitions become impaired, we could have to take significant charges against earnings.

In connection with the accounting for the Novozymes Acquisition, we recorded a significant amount of intangible assets, including developed technology and customer relationships relating to the growth factor products. In addition, in connection with the accounting for the Refine Acquisition, we recorded a significant amount of intangible assets, including developed technology and customer relationships relating to the ATF system. Under U.S. GAAP, we must assess, at least annually and potentially more frequently, whether the value of intangible assets has been impaired. Intangible assets will be assessed for impairment in the event of an impairment indicator. Any reduction or impairment of the value of intangible assets will result in a charge against earnings, which could materially adversely affect our results of operations and shareholders equity in future periods.

Our exposure to political, economic and other risks that arise from operating a multinational business has and may continue to increase.

Our operations and sales outside of the United States have increased as a result of the Novozymes Acquisition and the Refine Acquisition and the continued expansion of our commercial organization. Risks related to these increased foreign operations include:

- fluctuations in foreign currency exchange rates;
- changes in general economic and political conditions in countries where we operate, particularly as a result of ongoing economic instability within the European Union and other foreign jurisdictions;
- being subject to complex and restrictive employment and labor laws and regulations, as well as union and works council restrictions;
- changes in tax laws or rulings in the United States or other foreign jurisdictions that may have an adverse impact on our effective tax rate;
- being subject to burdensome foreign laws and regulations, including regulations that may place an increased tax burden on our operations;
- being subject to longer payment cycles from customers and experiencing greater difficulties in timely accounts receivable collections; and
- required compliance with a variety of foreign laws and regulations.

Our business success depends in part on our ability to anticipate and effectively manage these and other. We cannot assure you that these and other related factors will not materially adversely affect our international operations or business as a whole.

We may be unable to manage efficiently having become a larger and more geographically diverse organization.

The Novozymes Acquisition, the Refine Acquisition, the continued expansion of our commercial sales operations, and our organic growth have increased the scope and complexity of our business. We will face

Table of Contents

challenges inherent in efficiently managing a more complex business with an increased number of employees over large geographic distances, including the need to implement appropriate systems, policies, benefits and compliance programs. Our inability to manage successfully the geographically more diverse (including from a cultural perspective) and substantially larger combined organization could materially adversely affect our operating results and, as a result, the market price of our common stock.

Our business is subject to a number of environmental risks.

Our manufacturing business involves the controlled use of hazardous materials and chemicals and is therefore subject to numerous environmental and safety laws and regulations and to periodic inspections for possible violations of these laws and regulations. In addition to these hazardous materials and chemicals, our facility in Sweden also uses Staphylococcus aureus and toxins produced by Staphylococcus aureus in some of its manufacturing processes. Staphylococcus aureus and the toxins it produces, particularly enterotoxins, can cause severe illness in humans. The costs of compliance with environmental and safety laws and regulations are significant and have increased since we completed the acquisition of the Novozymes Biopharma Business. Any violations, even if inadvertent or accidental, of current or future environmental, safety laws or regulations and the cost of compliance with any resulting order or fine could adversely affect our operations.

Our acquisitions expose us to risks that could adversely affect our business, and we may not achieve the anticipated benefits of acquisitions of businesses or technologies.

In addition to the Novozymes Acquisition and the Refine Acquisition, and as a part of our growth strategy, we may make selected acquisitions of complementary products and/or businesses. Any acquisition involves numerous risks and operational, financial, and managerial challenges, including the following, any of which could adversely affect our business, financial condition, or results of operations:

- difficulties in integrating new operations, technologies, products, and personnel;
- problems maintaining uniform procedures, controls and policies with respect to our financial accounting systems;
- lack of synergies or the inability to realize expected synergies and cost-savings;
- difficulties in managing geographically dispersed operations;
- underperformance of any acquired technology, product, or business relative to our expectations and the price we paid;
- negative near-term impacts on financial results after an acquisition, including acquisition-related earnings charges;
- the potential loss of key employees, customers, and strategic partners of acquired companies;
- claims by terminated employees and shareholders of acquired companies or other third parties related to the transaction;
- the assumption or incurrence of additional debt obligations or expenses, or use of substantial portions of our cash;
- the issuance of equity securities to finance or as consideration for any acquisitions would dilute the ownership of our stockholders;

the issuance of equity securities to finance or as consideration for any acquisitions may not be an option of if the price of our common stock is low or volatile which could preclude us from completing any such acquisitions;

any collaboration, strategic alliance and licensing arrangement may require us to relinquish valuable rights to our technologies or product candidates, or grant licenses on terms that are not favorable to us;

Table of Contents

diversion of management s attention and company resources from existing operations of the business;

inconsistencies in standards, controls, procedures, and policies;

the impairment of intangible assets as a result of technological advancements, or worse-than-expected performance of acquired companies; and

assumption of, or exposure to, historical liabilities of the acquired business, including unknown contingent or similar liabilities that are difficult to identify or accurately quantify.

In addition, the successful integration of acquired businesses requires significant efforts and expense across all operational areas, including sales and marketing, research and development, manufacturing, finance, legal, and information technologies. There can be no assurance that any of the acquisitions we may make will be successful or will be, or will remain, profitable. Our failure to successfully address the foregoing risks may prevent us from achieving the anticipated benefits from any acquisition in a reasonable time frame, or at all.

The ATF System business relies on a limited number of suppliers or, in some cases, one supplier, and may not be able to find replacements or immediately transition to alternative suppliers, which could have a material adverse effect on the ATF System business and our financial condition, results of operations and reputation.

There are only a limited number of suppliers of materials related to the ATF System products, one of which is the primary supplier of materials used for consumable ATF System products. An interruption in operations of the business related to these products could occur if we encounter delays or difficulties in securing these materials, or if we cannot then obtain an acceptable substitute. Any such interruption could significantly affect the business related to these products and our financial condition, results of operations and reputation.

We believe that only a small number of suppliers are currently qualified to supply materials for the ATF system. The use of materials furnished by these replacement suppliers would require us to alter our operations related to the ATF system. Transitioning to a new supplier would be time consuming and expensive, may result in interruptions in our operations, could affect the performance specifications of the ATF system or could require that we revalidate the materials. There can be no assurance that we will be able to secure alternative materials, and bring such materials on line and revalidate them without experiencing interruptions in our workflow. If we should encounter delays or difficulties in securing, reconfiguring or revalidating the materials required for ATF System products, our business related to these products and our financial condition, results of operations and reputation could be adversely affected.

Our royalty agreement with Bristol-Myers Squibb on sales of Orencia expired on December 31, 2013.

Our royalty agreement with Bristol provided for us to receive payments from Bristol based on their net sales of their Orencia® product in the United States through December 31, 2013. As a result, we no longer receive royalty payments under this agreement as of December 31, 2013.

Our license agreement with Pfizer expired on April 26, 2015.

Our licensing agreement with Pfizer provided for us to potentially receive payments from Pfizer based on milestones related to clinical development and initial commercial sales in specific geographies, as well as royalty payments from Pfizer based on its future sales of RG3039 or any SMA compounds developed under the license agreement. On January 26, 2015, Pfizer issued to us a notice of its termination of the License Agreement for convenience, effective as of April 26, 2015. As a result, we no longer receive milestone payments under this agreement.

Table of Contents

We have limited sales and marketing capabilities.

We have a small sales force and, historically, we have generated most of our revenues through sales of bioprocessing products to a limited number of life sciences companies, such as GE Healthcare, MilliporeSigma and through other individual distributors. However, due in part to the Refine Acquisition, an increasing amount of our revenue is attributable to our commercialization of bioprocessing products that we sell directly to end-users such as biopharmaceutical companies and contract manufacturing organizations. This has required and will continue to require us to invest additional resources in our sales and marketing capabilities. We may not be able to attract and retain additional sales and marketing professionals, and the cost of building the sales and marketing function may not generate our anticipated revenue growth. In addition, our sales and marketing efforts may be unsuccessful. Our failure to manage these risks may have a negative impact on our financial condition, or results of operations and may cause our stock price to decline.

If we are unable to obtain or maintain our intellectual property, we may not be able to succeed commercially.

We endeavor to obtain and maintain patent and trade secret protection for our products and processes when available in order to protect them from unauthorized use and to produce a financial return consistent with the significant time and expense required to bring our products to market. Our success will depend, in part, on our ability to:

- obtain and maintain patent protection for our products and manufacturing processes;
- preserve our trade secrets;
- operate without infringing the proprietary rights of third parties; and
- secure any necessary licenses from others on acceptable terms.

We cannot be sure that any patent applications relating to our products that we will file in the future or that any currently pending applications will issue on a timely basis, if ever. Since patent applications in the United States filed prior to November 2000 are maintained in secrecy until patents issue and since publication of discoveries in the scientific or patent literature often lag behind actual discoveries, we cannot be certain that we were the first to make the inventions covered by each of our pending patent applications or that we were the first to file patent applications for such inventions. Even if patents are issued, the degree of protection afforded by such patents will depend upon the:

- scope of the patent claims;