
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

Amendment No. 1

to

FORM S-1

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Ultragenyx Pharmaceutical Inc.

(Exact name of Registrant as specified in its charter)

Delaware
*(State or other jurisdiction of
incorporation or organization)*

2834
*(Primary Standard Industrial
Classification Code Number)*

27-2546083
*(I.R.S. Employer
Identification Number)*

**60 Leveroni Court
Novato, CA 94949
(415) 483-8800**

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

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Ultragenyx Pharmaceutical Inc.**

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Approximate date of commencement of proposed sale to the public:

As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a smaller reporting company)

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. Neither we nor the selling stockholders may sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities, and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated July 7, 2014

Prospectus

2,017,349 shares



Common Stock

Ultragenyx Pharmaceutical Inc. is offering 1,311,277 shares of its common stock and the selling stockholders identified in this prospectus are offering 706,072 shares of our common stock. We will not receive any proceeds from the sale of any shares by the selling stockholders.

Our common stock is listed on The NASDAQ Global Select Market under the symbol "RARE". The last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014 was \$49.57 per share.

We are an "emerging growth company," as that term is used in the Jumpstart Our Business Startups Act of 2012, and, as such, have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings.

Investing in our common stock involves a high degree of risk. See "[Risk Factors](#)" beginning on page 15.

	<u>Per share</u>	<u>Total</u>
Public offering price	\$	\$
Underwriting discounts and commissions ⁽¹⁾	\$	\$
Proceeds to Ultragenyx Pharmaceutical Inc., before expenses	\$	\$
Proceeds to selling stockholders	\$	\$

(1) See "Underwriting" for additional disclosure regarding underwriting discounts, commissions and estimated offering expenses.

We and the selling stockholders have granted the underwriters an option for a period of 30 days to purchase up to an additional 196,691 and 105,911 shares of our common stock, respectively.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed on the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares of common stock to purchasers on or about _____, 2014.

J.P. Morgan

Morgan Stanley

Cowen and Company

Baird

, 2014

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Neither we nor the selling stockholders have authorized anyone to provide you with information other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We and the selling stockholders take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give to you. We and the selling stockholders are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of our common stock. Our business, financial condition, results of operations, and prospects may have changed since that date.

No action is being taken in any jurisdiction outside the United States to permit a public offering of our common stock or possession or distribution of this prospectus in that jurisdiction. Persons who come into possession of this prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus applicable to that jurisdiction.

PROSPECTUS SUMMARY

The items in the following summary are described in more detail later in this prospectus. This summary provides an overview of selected information and does not contain all of the information you should consider before buying our common stock. Therefore, you should read the entire prospectus carefully, including the information in our filings with the Securities and Exchange Commission, or SEC, incorporated by reference in this prospectus, before deciding to invest in our common stock. Investors should carefully consider the information set forth under “Risk Factors” beginning on page 15 of this prospectus and those identified in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014. In this prospectus, unless the context otherwise requires, references to “the Company,” “we,” “us,” “our,” or “Ultragenyx” refer to Ultragenyx Pharmaceutical Inc.

Overview

We are a development-stage biopharmaceutical company focused on the identification, acquisition, development, and commercialization of novel products for the treatment of rare and ultra-rare diseases, with an initial focus on serious, debilitating genetic diseases. We focus on diseases for which the unmet medical need is high, the biology for treatment is clear, and for which there are no approved therapies. Since our inception in 2010, we have in-licensed potential treatments for five different diseases that are currently in or have completed Phase 1/2 or Phase 2 clinical studies. Our strategy, which is predicated upon time- and cost-efficient drug development, allows us to pursue multiple programs in parallel with the goal of delivering safe and effective therapies to patients with the utmost urgency.

Our current product candidate pipeline has been either in-licensed from academic institutions or derived from partnerships with other pharmaceutical companies. Our strategy is to acquire and retain global commercialization rights to our products to maximize long-term value, where possible. Over time, we intend to build our own commercial organization, which we believe will be of modest size due to the relatively small number of specialists who treat patients with rare and ultra-rare diseases.

The patients we seek to treat have diseases with limited or no treatment options, and we recognize that their lives and well-being are highly dependent upon our efforts to develop new therapies. For this reason, we are passionate about developing these therapies with the utmost urgency and care. We strive to build a company that is faster, better, and smarter about advancing multiple product candidates through approval.

We were founded in April 2010 by our current President and Chief Executive Officer, Dr. Emil Kakkis, M.D., Ph.D. We have assembled an experienced team with extensive rare disease drug development and commercialization capabilities. Dr. Kakkis and the team at Ultragenyx have been previously involved at other companies in the development and/or commercialization of many therapies approved or in development for rare metabolic genetic diseases, including Aldurazyme, Naglazyme, Kuvan, and Vimizim (BioMarin); Lumizyme/Myozyme (Sanofi-Genzyme); and asfotase alpha (Enobia; now Alexion).

Our Strategy

Our strategy is to identify, acquire, develop, and commercialize novel products for the treatment of rare and ultra-rare diseases in the United States, the European Union, and select international markets, with the goal of becoming a leading rare disease company. The critical components of our business strategy include the following:

- Focus on rare and ultra-rare diseases with significant unmet medical need;
- Focus on diseases and therapies with clear mechanisms of action;
- Leverage our experience and relationships to in-license promising product candidates;
- Develop and commercialize multiple product candidates in parallel;

- Focus on excellent and rapid clinical and regulatory execution; and
- Seek to retain global commercialization rights to product candidates.

Product Candidates

Our current pipeline consists of two product categories: biologics, including a monoclonal antibody and enzyme replacement therapies; and small-molecule substrate replacement therapies. Enzymes are proteins that the body uses to process materials needed for normal cellular function, and substrates are the materials upon which enzymes act. When enzymes or substrates are missing, the body is unable to perform its normal cellular functions, often leading to significant clinical disease. Several of our therapies are intended to replace deficient enzymes or substrates and one product candidate is an antibody that decreases the activity of an elevated hormone.

The following table summarizes our product candidate pipeline:

Candidate	Description	Indication	Pre-clinical	Phase 1	Phase 1/2 or Phase 2	Phase 3 or pivotal	Status / Anticipated milestones	Ultragenyx commercial rights
Biologics								
KRN23 (UX023)	Anti-FGF23 monoclonal antibody	XLH					<ul style="list-style-type: none"> Expect interim data from pediatric Phase 2 clinical study in 2015 	<ul style="list-style-type: none"> U.S. and Canada: Joint with KHK (profit share) Mexico, Central and South America
rhGUS (UX003)	Enzyme replacement	MPS 7					<ul style="list-style-type: none"> Expect interim data from Phase 1/2 clinical study in the second half of 2014 	<ul style="list-style-type: none"> Worldwide
rhPPCA (UX004)	Enzyme replacement	Galactosialidosis					<ul style="list-style-type: none"> Expect to continue preclinical development during 2014 	<ul style="list-style-type: none"> Worldwide
Substrate replacement therapies								
Triheptanoin (UX007)	Substrate replacement	LC-FAOD					<ul style="list-style-type: none"> Expect interim data from Phase 2 clinical study in 2015 	<ul style="list-style-type: none"> Worldwide
Triheptanoin (UX007)	Substrate replacement	Glut1 DS					<ul style="list-style-type: none"> Expect interim data from Phase 2 clinical study in 2015 	<ul style="list-style-type: none"> Worldwide
SA-ER (UX001)	Substrate replacement	HIBM					<ul style="list-style-type: none"> Expect data from ongoing Phase 2 extension study in late 2014 	<ul style="list-style-type: none"> Worldwide (excluding Japan and certain other Asian territories)

KRN23 (UX023) for the treatment of XLH

KRN23 is a fully human monoclonal antibody administered via subcutaneous injection that is designed to bind and reduce the biological activity of FGF23 to increase abnormally low phosphate levels in patients with X-linked hypophosphatemia, or XLH. Patients with XLH have low serum phosphate levels due to excessive phosphate loss into the urine, which is directly caused by the effect on kidney function of excess FGF23 production in bone cells. Low phosphate levels lead to poor bone mineralization and a variety of clinical manifestations, including rickets leading to bowing and other skeletal deformities, short stature, bone pain and fractures, poor quality bone, and muscle weakness. There is no approved drug therapy or treatment for the underlying cause of XLH. Most patients are managed using frequently divided doses of oral phosphate and vitamin D therapy, which has significant side effects. Oral phosphate/vitamin D replacement therapy requires extremely close monitoring due to the potential for excessive phosphate levels and secondary increases in calcium, which can result in severe damage to the kidneys from excess calcium phosphate deposits and other complications. Additionally, some patients are unable to tolerate the regimen due to the chalky stool that results from taking large amounts of oral phosphate or the high frequency of dosing required.

In August 2013, we formed a collaboration with Kyowa Hakko Kirin Co., Ltd., or KHK, to jointly develop and commercialize KRN23 for the treatment of XLH. KHK has conducted one Phase 1 study, one Phase 1/2 study, and one longer-term Phase 1/2 study of KRN23 in adults with XLH. We reviewed safety and efficacy data from the Phase 1 and Phase 1/2 studies prior to entering into our collaboration with KHK, and we entered into the collaboration based in part upon our conclusion that these data were supportive of further development (serum phosphate, renal tubular reabsorption of phosphate, and vitamin D levels were increased, and the product appeared well tolerated).

Results from the Phase 1 single dose study in 38 adult XLH patients were presented at the American Society for Bone and Mineral Research Annual Meeting in October 2013 and published in the Journal of Clinical Investigation in February 2014. The data demonstrated that KRN23 was well tolerated and increased serum phosphate, or phosphorus, as well as vitamin D levels. Of the 38 adult XLH patients, 12 received a single subcutaneous injection of KRN23 (at doses of 0.1, 0.3, 0.6, or 1.0 mg/kg), 17 received a single intravenous injection of KRN23 (at doses of 0.003, 0.01, 0.03, 0.1, or 0.3 mg/kg) and 9 received placebo. The effect of KRN23 on the increase in serum phosphate levels was comparable between intravenous and subcutaneous administration; however, time to reach peak effect was slower and duration of effect was greater with subcutaneous administration compared with intravenous administration. The demonstrated improvement in serum phosphate levels suggests that significant benefit could be expected. Corresponding changes were observed in renal tubular reabsorption of phosphate. Increases in vitamin D were also observed, suggesting improved intestinal absorption of both phosphate and calcium. Changes were not observed in serum calcium.

No serious adverse events were reported in the Phase 1 study. Approximately 83% of the subjects experienced at least one non-serious treatment-emergent adverse event, the most common of which were nausea and headache; no patients in the placebo or subcutaneous treatment arms reported these events. In the subcutaneous arm, two patients (approximately 17%) experienced elevated levels of the enzyme amylase in the blood, and two other patients (approximately 17%) experienced back pain. The elevations of the enzyme amylase were modest and not clinically significant. There did not appear to be a relationship between the incidence and types of adverse events and the dose administered following a single dose of study drug.

Results from a multiple-dose Phase 1/2 study with up to four escalating doses from 0.05 mg/kg to 0.6 mg/kg that was completed in 28 adult XLH patients were presented at the 2014 ICE/ENDO joint meeting of The Endocrine Society and the International Congress on Endocrinology in June 2014. The data demonstrated that repeat doses of KRN23 over four months led to an increase in serum phosphate in 100% of patients, with approximately 89% of patients reaching the low end of the normal range. Peak mean serum phosphorus increased to 3.03 ± 0.42 mg/dL after the fourth dose, which is an approximately 60% increase from the mean of 1.89 ± 0.33 mg/dL at baseline. Comparable increases were observed in mean reabsorption of phosphate from the urine (TmP/GFR) and mean serum 1,25 dihydroxy vitamin D levels.

Increases in bone remodeling markers of bone formation and bone resorption were also observed in this Phase 1/2 study. The increase in P1NP (procollagen type I N propeptide) from baseline was statistically significant ($p < 0.05$) after all doses and the increase in osteocalcin was statistically significant ($p < 0.05$) after the fourth dose. These data support the concept that KRN23's impact on improving phosphate metabolism will improve bone remodeling, a critical part of creating strong, properly-formed bones. Increases in quality of life and disability measures were also observed and we intend to objectively evaluate these in a future randomized controlled study.

There were no significant changes in parathyroid hormone, serum calcium, or urinary calcium excretion in this Phase 1/2 study, consistent with the Phase 1 data showing that KRN23 can specifically improve phosphate control without interfering with calcium control. The most common adverse events were nasopharyngitis, joint pain, diarrhea, back pain, and restless leg syndrome. Joint pain and back pain are both known symptoms of XLH in adults. There were no serious adverse events related to treatment or renal or cardiac tissue calcification. One patient discontinued treatment due to an injection site reaction. No anti-KRN23 antibodies were observed.

Data from the long-term Phase 1/2 study to evaluate KRN23 treatment for an additional 12 doses is expected to be presented at the American Society for Bone and Mineral Research (ASBMR) Annual Meeting in September 2014.

In July 2014, we announced the first patient screened and enrolled in the Phase 2 pediatric study of KRN23 in patients with XLH. We expect to enroll approximately 30 prepubertal patients in this study. The primary objectives of the study are to identify a dose and dosing regimen and to establish the safety profile of treatment with KRN23 in pediatric XLH patients. We will also assess preliminary clinical effects of KRN23 treatment on bone health and deformity as measured by radiographic assessments, growth, muscle strength, and motor function, as well as markers of bone health and patient-reported outcomes of pain, disability, and quality of life. The study has been evaluated and accepted for conduct by the United States Food and Drug Administration, or FDA, the United Kingdom Medicinal and Health Regulatory Authority, and the Dutch Medicines Evaluation Board.

The study will consist of a 16-week individual dose-titration period followed by a 48-week treatment period. The goal of the dose-titration period is to identify the individualized dose of KRN23 required to achieve stable serum phosphorus levels in the target range. Patients will be divided into three cohorts of escalating starting dose levels of KRN23 with either monthly or biweekly dosing regimens. At the end of the 16-week dose-titration period, patients will receive their individually-optimized dose of KRN23 on a monthly or biweekly basis for the 48-week treatment period. An interim analysis of safety and pharmacodynamic data will be conducted after 24 weeks of the treatment period.

Depending on the results of our Phase 2 pediatric study, we intend to conduct a Phase 3 pediatric trial. In our recent meeting with the FDA, the FDA agreed that blinded radiographic assessments of changes in bone abnormalities, i.e. rickets and bowing, and changes in growth may be used as primary endpoint measures in the pediatric development program and a potential Phase 3 study. The FDA also indicated that a Phase 3 study in pediatric patients could be open-label, but recommended inclusion of a standard of care control arm for comparison on a non-inferiority basis. We expect that the final design of a pediatric Phase 3 study would be determined once sufficient safety and efficacy data are available and after further consultation with the FDA.

Given the high turnover and growth of bone during childhood and the critical role phosphate plays in bone growth, pediatric XLH patients have the highest morbidity and potential for benefit in a shorter timeframe. As a result, pediatric XLH patients may also have the greatest potential for improvement based on third-party data regarding enzyme replacement therapy in hypophosphatasia, which is another genetic bone disease with poor bone mineralization related to phosphate metabolism caused by a different, unrelated mechanism. We also expect to continue to develop KRN23 in adults with XLH and plan to conduct an adult Phase 2b study in parallel with our Phase 3 pediatric trial.

Potential market opportunity

Based on incidence and prevalence rates published in a Danish epidemiologic study and surveys of physicians in the United States, we estimate that there are approximately 3,000 cases of XLH in pediatric patients in the United States. Further, there are an estimated 9,000 cases of XLH in adult patients in the United States. However, we expect that many of these adult patients may not seek treatment if their bone disease is not too severe.

rhGUS (UX003) for the treatment of MPS 7

Recombinant human beta-glucuronidase, or rhGUS, is an intravenous, or IV, enzyme replacement therapy for the treatment of mucopolysaccharidosis 7, or MPS 7, also known as Sly Syndrome. Patients with MPS 7 suffer from severe cellular and organ dysfunction that typically leads to death in the teens or early adulthood. MPS 7 is caused by a deficiency of the lysosomal enzyme beta-glucuronidase, which is required for the breakdown of certain complex carbohydrates known as glycosaminoglycans, or GAGs. The inability to properly

break down GAGs leads to their accumulation in many tissues, resulting in a serious multi-system disease. Patients with MPS 7 may have abnormal coarsened facial features, enlargement of the liver and spleen, airway obstruction, lung disease, cardiovascular complications, joint stiffness, short stature, and a skeletal disease known as dysostosis multiplex. In addition, many patients experience progressive lung problems as a result of airway obstruction and mucous production, often leading to sleep apnea and pulmonary insufficiency, and eventually requiring tracheostomy. There are currently no approved drug therapies for MPS 7.

We licensed exclusive worldwide rights to rhGUS-related know-how and cell lines from Saint Louis University in November 2010 and initiated development in 2012. We have conducted preclinical studies to support the chronic IV administration of rhGUS. Administration of rhGUS resulted in substantial distribution of enzyme, as well as reduction in tissue pathology in a wide variety of tissues, including the liver, spleen, lung, heart, kidney, muscle, bone, and brain. No adverse toxicology related to rhGUS was noted in these studies.

In December 2013, we initiated an open-label, Phase 1/2 study in the United Kingdom to evaluate the safety, tolerability, efficacy, and dose of IV administration every other week of rhGUS in up to five patients with MPS 7 who are between five and 30 years of age. The initial 12-week treatment period will be followed by a dose-titration period and a long-term extension study. We expect to release interim data from this study during 2014.

Preliminary data from the Phase 1/2 study were presented at the American College of Medical Genetics and Genomics Annual Clinical Genetics Meeting in March 2014. Results from three patients who had been administered 2 mg/kg of rhGUS every other week for two, six, and 12 weeks showed evidence of clearance of lysosomal storage as indicated by the decrease in urinary GAG excretion beginning at two weeks of treatment of approximately 30-50%. At the 12 week assessment of the first patient, absolute liver size was reduced by approximately 11%. This represents a 46% decrease in the excess liver size above normal for age and gender. The remaining patients have not yet reached the 12 week time point for liver size assessment. No serious adverse events were observed during up to 12 weeks of treatment, and no infusion-associated reactions were observed after a total of 13 infusions to date in these three subjects. The Phase 1/2 study will continue, and additional 12-week interim data are expected in the second half of 2014. If these results are supportive, we plan to initiate a pivotal Phase 3 study in 2014.

We are also supplying rhGUS to an investigator who is treating a single U.S. patient under an emergency investigational new drug, or eIND, application. Preliminary results from the treatment of this patient were presented at the Lysosomal Disease Network's 10th Annual World Symposium in February 2014. Preliminary data showed evidence of a reduction in lysosomal storage based on reduced excretion of urinary GAG of 50% and a reduction in the size of the enlarged liver and spleen. The patient showed an improvement of pulmonary function and no infusion-associated reactions during the first 14 weeks of treatment. The patient's caregivers also reported the patient's improved stamina and increased time spent in school.

The European Medicines Agency, or EMA, has agreed that approval under exceptional circumstances could be possible for a proposed 12-patient placebo-controlled pivotal study in this disease with urinary GAG levels as a surrogate primary endpoint provided the data was strongly supportive of a favorable benefit/risk ratio. The EMA requested that some evidence of trend in improvement in clinical endpoints be observed to support the primary endpoint, but recognized that a statistically significant result on clinical endpoints was unlikely given the small number of patients expected to be enrolled in the study. The FDA has not yet agreed to the pivotal study plan or study design and primary endpoint and would like to see additional data correlating urinary GAG levels with other clinical endpoints, which we are collecting and will submit to the FDA. We expect to meet with the FDA to discuss the Phase 3 plan, although our plan is currently based on our agreement with the EMA.

In addition to the above development plan, we intend to study MPS 7 patients under the age of five years, including potentially young infants born with hydrops fetalis. Currently, these infants often die within a few months to one year, but enzyme replacement therapy might be able to reduce GAG storage and improve health

and survival in these patients. This program would not start until we had obtained sufficient information from the Phase 1/2 study to support the initiation of a trial in younger patients.

rhPPCA (UX004) for the treatment of galactosialidosis

Recombinant human protective protein cathepsin-A, or rhPPCA, which was in-licensed from St. Jude Children's Research Hospital in September 2012, is in preclinical development as an enzyme replacement therapy for galactosialidosis, a rare lysosomal storage disease for which there are currently no approved drug therapies. Similar to MPS patients, patients with galactosialidosis present with both soft tissue storage in the liver, spleen, and other tissues, as well as connective tissue (bone and cartilage) related disease. As with MPS 7, an enzyme deficiency results in accumulation of substrates in the lysosomes, causing skeletal and organ dysfunction, and death. We plan to continue preclinical development of rhPPCA during 2014.

Triheptanoin (UX007) for the treatment of LC-FAOD

We are developing triheptanoin for oral administration intended as a substrate replacement therapy for patients with long-chain fatty acid oxidation disorders, or LC-FAOD. Triheptanoin is a medium odd-chain triglyceride of three seven-carbon fatty acids designed to provide substrate replacement for fatty acid metabolism and restore production of energy. Patients with LC-FAOD have a deficiency that impairs the ability to produce energy from fat, which can lead to depletion of glucose in the body, and severe liver, muscle, and heart disease, as well as death. There are currently no approved drugs or treatments specifically for LC-FAOD. The current standard of care for LC-FAOD includes diligent prevention of fasting combined with the use of low-fat/high-carbohydrate diets, carnitine supplementation in some cases, and medium even-chain triglyceride oil supplementation. Despite treatment with the current standard of care, many patients continue to suffer significant morbidity and mortality.

We licensed certain intellectual property rights for triheptanoin from Baylor Research Institute in August 2012. Triheptanoin has been studied clinically for 13 years in approximately 130 human subjects affected by a variety of diseases, including more than 60 patients with LC-FAOD. Multiple investigator-sponsored open-label studies suggest clinical improvements with triheptanoin treatment, even for patients who were on standard of care. We recently presented a retrospective medical record review study assessing the clinical outcome of triheptanoin treatment on LC-FAOD subjects who have been participating in a compassionate use program at the University of Pittsburgh Medical Center. The data showed that treatment with triheptanoin appeared to reduce the frequency and severity of hospitalizations previously experienced by these patients for disease-related causes, including muscle rupture, hypoglycemia, and cardiomyopathy. Among a number of results suggesting significant improvement after crossing over onto triheptanoin treatment, a reduction in mean total hospital days per year from 17.55 to 5.40 (69%; $p = 0.0242$) was observed after transitioning from standard of care to triheptanoin therapy. These results are clinically important but are derived from a retrospective medical review, and not from a randomized controlled study. The preliminary results of our retrospective medical review are as follows:

Description	Pre-treatment	Post-treatment	% decrease	n	p-value
Mean total hospitalizations/year ⁽¹⁾	1.94	1.26	36%	16	0.1126
Mean total hospital days/year ^{(1),(2)}	17.55	5.4	69%	15	0.0242
Mean infant total hospitalizations/year ⁽³⁾	13.01	1.37	89%	4	0.0892
Mean hypoglycemia events/year ^{(1),(4)}	0.92	0.04	96%	9	0.0091
Mean hypoglycemia total hospital days/year ^{(1),(2),(4)}	8.42	0.18	98%	9	0.0257
Mean rhabdomyolysis events/year ^{(1),(5)}	1.05	0.68	35%	11	0.4604
Mean rhabdomyolysis total hospital days/year ^{(1),(5)}	5.94	2.16	64%	9	0.1224
Mean peak creatine kinase (units) for rhabdomyolysis events ^{(1),(5)}	85,855	25,797	68%	7	0.1279

- (1) Excludes data for four infants dosed within first six months of life.
(2) Excludes hospitalizations with unknown discharge dates.
(3) Four infants were dosed within the first six months of life.
(4) Includes only those patients with hypoglycemia events prior to treatment.
(5) Includes only those patients with rhabdomyolysis events prior to treatment.

Triheptanoin is currently being evaluated in a prospective international open-label Phase 2 study in approximately 30 severely affected LC-FAOD patients. The principal goals of the study are to determine the appropriate clinical endpoints and patient population for testing in potential later-stage pivotal studies. The study will evaluate patients, ages six months to 35 years, exhibiting significant clinical manifestations of LC-FAOD despite current therapy. Prior to initiating treatment with triheptanoin, subjects will continue current therapy for four weeks to establish their baseline condition. Triheptanoin will then be titrated to an expected target dose of 25-35% of total daily caloric intake via oral administration, while ensuring tolerability. The study will assess the impact of triheptanoin on several endpoints, including cycle ergometer performance, 12-minute walk test, muscle strength, creatine kinase levels, hypoglycemia, liver size, cardiac disease, and major medical events. The patients will be followed to evaluate the effects of triheptanoin treatment on acute clinical pathophysiology associated with LC-FAOD over 24 weeks, then may continue treatment for an additional 54 weeks for observation of major medical events. We expect data from this study to be available in 2015.

Potential market opportunity

Based upon data from the National Newborn Screening Information System, we estimate that there are approximately 2,000 to 3,500 LC-FAOD patients in the United States, depending on the assumed mortality rate.

It is unclear how many of these patients are currently diagnosed because the availability of newborn screening in all 50 states in the United States is a relatively new development. Furthermore, until further clinical development of triheptanoin is conducted, it is not clear which subsets of diagnosed patients would be considered by clinicians to be good candidates for triheptanoin treatment. Outside of the United States, where newborn screening is not consistently done, figures regarding the prevalence of LC-FAOD are more uncertain.

Triheptanoin (UX007) for the treatment of Glut1 DS

We are also developing triheptanoin for patients with glucose transporter type 1 deficiency syndrome, or Glut1 DS. Glut1 DS is caused by a mutation affecting the gene for Glut1, a protein that transports glucose from the blood into the brain. Because glucose is the primary source of energy for the brain, Glut1 DS results in a chronic state of brain energy deficiency and is characterized by seizures, developmental delay, and movement disorder. There are currently no approved drugs specific to Glut1 DS. The current standard of care for Glut1 DS is the ketogenic diet, an extreme high-fat (70-80% of daily calories as fat)/low-carbohydrate diet, which generates ketone bodies as an alternative energy source to glucose, and one or more antiepileptic drugs. The ketogenic diet can be effective in reducing seizures but compliance can be difficult, and the diet has demonstrated limited effectiveness in the treatment of developmental delay and movement disorders. In addition, ketogenic diet can lead to side effects including renal stones. In general, Glut1 DS patients are considered relatively refractory to antiepileptic drugs with only approximately 8% achieving seizure control on antiepileptic drugs alone. There are currently no antiepileptic drugs approved specifically for patients with Glut1 DS.

Triheptanoin is intended as a substrate replacement therapy to provide an alternative source of energy to the brain in Glut1 DS patients. Although there are open-label investigator-sponsored clinical studies ongoing and the results have not yet been reported publicly, there are anecdotal reports of benefit in terms of reduced seizures and improved developmental function in some Glut1 DS subjects taking triheptanoin. In March 2014, we initiated a Phase 2 global, randomized, double-blind, placebo-controlled, parallel-group study that may enroll up to 50 patients who are currently not fully compliant with ketogenic diet and continue to have seizures. The primary efficacy objective is the reduction in frequency of seizures compared to placebo following a six-week baseline period and subsequent eight-week placebo-controlled treatment period. The blinded treatment period will be followed by an open-label extension period in which patients will be treated with triheptanoin through week 52. Patient enrollment may be modified based on an interim analysis. Assuming timely patient enrollment in this study, we expect to release data from this trial in 2015.

We also continue to support investigator-sponsored trials studying triheptanoin across multiple indications.

Potential market opportunity

While a comprehensive genetic analysis of birth incidence has not been conducted, published literature suggests a range of 3,000 to 7,000 Glut1 DS patients in the United States based on evaluations of generalized or absence seizures. The increasing recognition of alternative or variable motor forms of the disease suggests that older patients may be discovered over time. Given that the disease can be inherited as an autosomal dominant disease, the discovery of one patient may be used to identify other affected relatives in some cases, which can be important in marketing of the product.

SA-ER (UX001) for the treatment of HIBM

We are developing an extended-release, oral formulation of sialic acid, or SA-ER, for the treatment of hereditary inclusion body myopathy, or HIBM, which is also known as GNE myopathy. HIBM is characterized by severe progressive muscular myopathy, or disease in which muscle fibers do not function properly, with onset typically in the late teens or twenties. Patients with HIBM have a genetic defect in the gene coding for a particular enzyme that is involved in the first step in the biosynthesis of sialic acid. Therefore, HIBM patients

have a sialic acid deficiency, which interferes with muscle function, leading to myopathy and atrophy. Patients typically lose a substantial amount of muscle function within ten to 20 years of diagnosis. There is no approved drug therapy for HIBM.

We are studying SA-ER as a potential substrate replacement therapy designed to address sialic acid deficiency and restore muscle function in HIBM patients. We have conducted a Phase 2 randomized, double-blind, placebo-controlled study of SA-ER in 47 HIBM patients. Data from this study were presented at the American Academy of Neurology Annual Meeting in April 2014. Patients in the study were initially randomized to receive placebo, three grams, or six grams of SA-ER per day. After 24 weeks, placebo patients crossed over to either three grams or six grams total daily dose, on a blinded basis, for an additional 24 weeks. The final analysis compared change at week 48 from baseline for the combined groups at six grams versus three grams of SA-ER. Assessments included pharmacokinetics, composites of upper extremity and lower extremity muscle strength as measured by dynamometry, other clinical endpoints, patient reported outcomes, and safety.

At 24 weeks, assessments of upper extremity composite of muscle strength showed a statistically significant difference in the six gram group compared to placebo (+2.33 kg; 5.5% relative difference from baseline; $p=0.040$). At 48 weeks, a statistically significant difference between the combined six gram group and the combined three gram group was observed (+3.44 kg; 8.5% relative difference from baseline; $p=0.0033$). Patients with less advanced disease (able to walk more than 200 meters at baseline), a predefined subset, showed a more pronounced difference (+4.69 kg; 9.6% relative difference from baseline; $p=0.00055$). The lower extremity composite showed a similar pattern of response but did not show a statistically significant difference between the dose groups. None of the groups showed a significant decline in the lower extremity composite during the treatment period. A positive trend was seen in patient-reported outcomes of functional activity consistent with the potential clinical meaningfulness of the muscle strength assessment. SA-ER appeared to be well tolerated with no serious adverse events observed to date in either dose group, and no dose-dependent treatment-emergent adverse events were identified. Most adverse events were mild to moderate and most commonly were gastrointestinal in nature and pain related to muscle biopsy procedures.

We continue to treat these patients in an extension study evaluating an increased daily dosage of 12 grams of sialic acid based on the dose dependence observed at weeks 24 and 48. We anticipate that data from the extension study should be available in late 2014. We also plan to discuss data from this program with regulatory authorities during 2014 with the objective of agreeing on the design and primary endpoint for a pivotal study.

Potential market opportunity

Approximately 400 HIBM cases have been reported in the published literature. HIBM is expected to occur in one in every 1,600 persons of Persian Jewish descent. Patients have also been identified in Asian Indian, European, Chinese, Japanese, Korean, and Middle Eastern populations. To better understand the patient population, we conducted an initial survey of 420 myopathy clinics in the United States, and the extrapolated results suggest a patient population of 300 to 400 in the United States and 1,200 to 2,000 worldwide.

Risks Associated with Our Business

Our ability to implement our business strategy is subject to numerous risks that you should be aware of before making an investment decision. These risks are described more fully in the section entitled "Risk Factors" immediately following this prospectus summary and in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, incorporated by reference herein. These risks include, among others:

- We are a development-stage company and have a limited operating history on which to assess our business, have incurred significant losses since our inception, and anticipate that we will continue to incur significant losses for the foreseeable future;

- We are heavily dependent upon the success of our product candidates, which are in the early stages of clinical development, and we cannot provide any assurance that any of our product candidates will receive regulatory approval;
- Because the target patient populations of our product candidates are small, and the addressable patient populations potentially even smaller, we must be able to successfully identify patients and acquire a significant market share to achieve profitability and growth;
- Even if this offering is successful, we expect that we will need to raise additional funding before we can expect to become profitable from sales of our products;
- The insurance coverage and reimbursement status of newly-approved products is uncertain and failure to obtain or maintain adequate coverage and reimbursement for new or current products could limit our ability to market those products and decrease our ability to generate revenue;
- If we are unable to obtain and maintain effective patent rights for our product candidates or any future product candidates, we may not be able to compete effectively in our markets; and
- Our future success depends in part upon our ability to retain our Founder, President, and Chief Executive Officer and to attract, retain, and motivate other qualified personnel.

Our Corporate Information

We were founded in April 2010 as a California corporation, and we reincorporated as a Delaware corporation in June 2011. Our principal executive offices are located at 60 Leveroni Court, Novato, CA 94949, and our telephone number is (415) 483-8800. Our web site address is www.ultragenyx.com. The information on, or that can be accessed through, our web site is not part of this prospectus. We have included our web site address as an inactive textual reference only.

We have filed trademark applications with the U.S. Patent and Trademark Office for the marks Ultragenyx™ and Ultragenyx Pharmaceutical™, and we are developing commercial names for our product candidates. This prospectus, and the information incorporated by reference herein, also contains trademarks of others, including Aldurazyme®, Naglazyme®, Kuvan®, Vimizim™, Lumizyme®, Myozyme® and asfotase alpha. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

THE OFFERING

Common stock offered by us	1,311,277 shares
Common stock offered by the selling stockholders	706,072 shares
Common stock to be outstanding after this offering	31,360,927 shares (31,557,618 shares if the underwriters exercise their option to purchase additional shares in full)
Underwriters' option to purchase additional shares	We and the selling stockholders have granted the underwriters a 30-day option to purchase up to an additional 196,691 and 105,911 shares of our common stock, respectively.
Use of proceeds	<p>We estimate that the net proceeds to us from this offering will be approximately \$60.6 million, or approximately \$69.8 million if the underwriters exercise their option to purchase additional shares in full, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering, together with our existing cash, cash equivalents, and short-term investments to continue to advance our clinical and preclinical pipeline, including potential new formulations of or indications for our existing product candidates or potential new product candidates, and to increase investment in early-stage research capabilities and general infrastructure, with any remaining proceeds to be used for other ongoing research and development, working capital and other general corporate purposes. We may also use a portion of the net proceeds to us to in-license, acquire, or invest in additional businesses, technologies, products, or assets, though we currently have no specific agreements, commitments, or understandings with respect to any in-licensing or acquisitions. See "Use of Proceeds."</p> <p>We will not receive any proceeds from the sale of any shares by the selling stockholders.</p>
Risk factors	You should read the "Risk Factors" section of this prospectus and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, incorporated by reference herein, for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.
NASDAQ Global Select Market symbol	"RARE"
<p>The number of shares of common stock to be outstanding after this offering is based on 30,049,650 shares of common stock outstanding as of March 31, 2014.</p> <p>The number of shares of our common stock to be outstanding after this offering excludes the following:</p> <ul style="list-style-type: none">• 2,396,323 shares of common stock issuable upon the exercise of outstanding stock options as of March 31, 2014 having a weighted-average exercise price of \$6.35 per share;• 353,459 shares of common stock issuable upon the exercise of outstanding warrants as of March 31, 2014 having a weighted-average exercise price of \$3.01 per share;	

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- 2,167,000 shares of common stock reserved for issuance pursuant to future equity awards under our 2014 Incentive Plan as of March 31, 2014, as well as any future increases in the number of shares of our common stock reserved for future issuance under this plan; and
- 600,000 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan, or 2014 ESPP, as of March 31, 2014, as well as any future increases in the number of shares of our common stock reserved for future issuance under the 2014 ESPP.

Except as otherwise indicated, all information contained in this prospectus:

- assumes that the underwriters do not exercise their option to purchase additional shares; and
- assumes no exercise of outstanding options or warrants after March 31, 2014.

SUMMARY FINANCIAL DATA

The following table summarizes our statements of operations and balance sheet data. We have derived the following statements of operations data for the years ended December 31, 2011, 2012, and 2013 from our audited financial statements incorporated by reference in this prospectus from our Annual Report on Form 10-K for the fiscal year ended December 31, 2013, or our 2013 Annual Report, and we have derived the following statements of operations data for the three months ended March 31, 2013 and March 31, 2014 and the balance sheet data as of March 31, 2014 from our unaudited interim financial statements incorporated by reference in this prospectus from our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, or our March 2014 Quarterly Report. You should read this data together with our financial statements and related notes, as well as the information under the captions “Selected Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” appearing in our 2013 Annual Report and our March 2014 Quarterly Report, which are incorporated by reference herein. Our historical results are not necessarily indicative of our future results, and results of interim periods are not necessarily indicative of results for the entire year.

	Year Ended December 31,			Three Months Ended March 31,	
	2011	2012	2013	2013	2014
	(in thousands, except share and per share amounts)			(unaudited)	
Statements of Operations Data:					
Operating expenses:					
Research and development	\$ 4,717	\$ 12,641	\$ 27,829	\$ 5,664	\$ 8,353
General and administrative	1,844	3,344	4,451	1,083	1,986
Total operating expenses	6,561	15,985	32,280	6,747	10,339
Loss from operations	(6,561)	(15,985)	(32,280)	(6,747)	(10,339)
Interest income	4	1	216	26	93
Interest expense	(270)	—	—	—	—
Other expense, net	(22)	(350)	(3,006)	(14)	(3,384)
Net loss	\$ (6,849)	\$ (16,334)	\$ (35,070)	\$ (6,735)	\$ (13,630)
Net loss attributable to common stockholders ⁽¹⁾	\$ (7,466)	\$ (19,561)	\$ (50,289)	\$ (8,205)	\$ (18,438)
Net loss per share attributable to common stockholders, basic and diluted	\$ (4.62)	\$ (14.20)	\$ (14.87)	\$ (2.84)	\$ (0.85)
Shares used in computing net loss per share attributable to common stockholders, basic and diluted	1,617,384	1,377,207	3,382,489	2,893,997	21,582,435
				As of March 31, 2014	
				Actual	As Adjusted ⁽²⁾⁽³⁾
				(in thousands)	
				(unaudited)	
Balance Sheet Data:					
Cash, cash equivalents and short-term investments				\$ 165,397	\$ 226,037
Working capital				162,825	223,465
Total assets				172,707	233,347
Deficit accumulated during the development stage				(92,869)	(92,869)
Total stockholders’ equity				165,714	226,354

- (1) See (a) Notes 2 and 14 to our audited financial statements included in our 2013 Annual Report incorporated by reference herein and (b) Notes 2 and 11 to our interim financial statements included in our March 2014 Quarterly Report incorporated herein by reference for an explanation of the calculations of our basic and diluted net loss per share attributable to common stockholders.
- (2) The as-adjusted balance sheet data reflects the sale of 1,311,277 shares of common stock offered by us in this offering at an assumed public offering price of \$49.57 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We will not receive any proceeds from any sale of shares of our common stock in this offering by the selling stockholders; accordingly, there is no impact upon the adjusted balance sheet for these sales.
- (3) A \$1.00 increase (decrease) in the assumed public offering price of \$49.57 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, would increase (decrease) the as adjusted amount of each of cash, cash equivalents and short-term investments, working capital, total assets and total stockholders' equity by approximately \$1.2 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A 100,000 share increase (decrease) in the number of shares offered by us at the assumed public offering price of \$49.57 per share would increase (decrease) the as adjusted amount of each of cash, cash equivalents and short-term investments, working capital, total assets and total stockholders' equity by approximately \$4.7 million after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Quarterly Financial Data (unaudited)

The following tables present certain unaudited quarterly financial information. This information has been prepared on the same basis as the audited financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary to present fairly the unaudited quarterly results of operations set forth herein. The operating results for any quarter are not necessarily indicative of results for any future period. Net loss per share for all periods presented has been retroactively adjusted to reflect the 1-for-3.1345 reverse stock-split effected on January 17, 2014. All data is in thousands except per share data.

	<u>2014</u>			
	<u>Q1</u>			
Operating expenses	\$ 10,339			
Net loss	(13,630)			
Net loss attributable to common stockholders	(18,438)			
Net loss per share attributable to common stockholders, basic and diluted	(0.85)			
	<u>2013</u>			
	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>
Operating expenses	\$ 6,747	\$ 8,247	\$ 7,761	\$ 9,525
Net loss	(6,735)	(8,591)	(8,427)	(11,317)
Net loss attributable to common stockholders	(8,205)	(10,830)	(12,589)	(18,665)
Net loss per share attributable to common stockholders, basic and diluted	(2.84)	(3.32)	(3.48)	(4.98)
	<u>2012</u>			
	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>
Operating expenses	\$ 3,092	\$ 3,571	\$ 4,644	\$ 4,678
Net loss	(3,103)	(3,672)	(4,629)	(4,930)
Net loss attributable to common stockholders	(3,384)	(4,063)	(5,302)	(6,812)
Net loss per share attributable to common stockholders, basic and diluted	(6.96)	(5.72)	(2.81)	(2.83)

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before investing in our common stock, you should consider carefully the risks described below, together with the other information contained in this prospectus or incorporated by reference in this prospectus, including the risks and uncertainties discussed under “Risk Factors” in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, which are incorporated by reference herein in their entirety. If any of the risks incorporated by reference herein or set forth below occur, our business, financial condition, results of operations and future growth prospects could be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or part of your investment.

Risks Related to this Offering

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.

Investors purchasing shares of common stock in this offering will pay a price per share that substantially exceeds the as-adjusted book value per share of our tangible assets after subtracting our liabilities. As a result, investors purchasing shares of common stock in this offering will incur immediate dilution of \$42.35 per share, based on an assumed public offering price of \$49.57 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, and our as-adjusted net tangible book value as of March 31, 2014 after giving effect to this offering. For information on how the foregoing amounts were calculated, see “Dilution.”

This dilution is due to the substantially lower price paid by our investors who purchased shares prior to this offering as compared to the price offered to the public in this offering, and the exercise of stock options granted to our employees. In addition, as of March 31, 2014, we had outstanding options and warrants to purchase 2,749,782 shares of our common stock; the exercise of any of these options or warrants would result in additional dilution. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market after the lock-up and other legal restrictions on resale discussed in this prospectus lapse, the market price of our common stock could decline. Based upon the number of shares of common stock outstanding as of March 31, 2014, and an assumed offering price per share of \$49.57 as of July 2, 2014, upon the closing of this offering we will have outstanding a total of approximately 31,360,927 shares of common stock. Of these shares, the shares of our common stock sold in our initial public offering (other than any shares purchased by our then-existing investors and directors and officers), which was completed in February 2014, are currently freely tradable, and the shares to be sold in this offering, plus any shares sold upon exercise of the underwriters’ option to purchase additional shares, will be freely tradable, without restriction, in the public market immediately following this offering. J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, however, may, in their sole discretion, permit our officers, directors and stockholders who are subject to these lock-up agreements to sell shares prior to the expiration of the lock-up agreements.

As of March 31, 2014, we had a total of 30,049,650 shares of common stock issued and outstanding. The lock-up agreements pertaining to our initial public offering will expire on July 29, 2014, following which at least approximately 23.4 million shares of common stock will be eligible for sale in the public market, subject to any additional restrictions, including a lock-up in connection with this offering. The lock-up agreements pertaining to this offering will expire 90 days from the date of this prospectus, following which approximately 7.2 million shares of common stock will be eligible for sale in the public market, all of which shares are held by current directors, executive officers and the selling stockholders and may be subject to Rule 144 under the Securities Act.

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In addition, as of March 31, 2014, approximately 5.5 million shares of common stock that are either subject to outstanding options, reserved for future issuance under our equity incentive plans, or subject to outstanding warrants will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements, and Rule 144 and Rule 701 under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

After this offering, the holders of approximately 18.9 million shares of our common stock, or 19.2 million including the shares underlying outstanding warrants, will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to the vesting schedules and lock-up agreements described above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these stockholders could have a material adverse effect on the market price of our common stock.

We will receive only limited proceeds from this offering and will have broad discretion in the use of the net proceeds to us from this offering; we may not use the offering proceeds that we receive effectively.

We will receive only limited proceeds from this offering, as a portion of the proceeds will be paid to the selling stockholders. We will receive net proceeds of only \$60.6 million from this offering, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Our management will have broad discretion in the application of the net proceeds to us from this offering, including for any of the purposes described in the section entitled "Use of Proceeds," and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds to us from this offering, their ultimate use may vary from their currently intended use. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds to us from this offering in investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve risks and uncertainties. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. All statements other than statements of historical facts contained in this prospectus are forward-looking statements. In some cases, you can identify forward-looking statements by words such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would,” or the negative of these words or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- our expectations regarding the timing of commencing our clinical studies and reporting results from same;
- the timing and likelihood of regulatory approvals for our product candidates;
- the potential market opportunities for commercializing our product candidates;
- our expectations regarding the potential market size and the size of the patient populations for our product candidates, if approved for commercial use;
- estimates of our expenses, future revenue, capital requirements, and our needs for additional financing;
- our ability to develop, acquire, and advance product candidates into, and successfully complete, clinical studies;
- the implementation of our business model and strategic plans for our business and product candidates;
- the initiation, timing, progress, and results of future preclinical studies and clinical studies, and our research and development programs;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates;
- our ability to maintain and establish collaborations or obtain additional funding;
- our expectations regarding the time during which we will be an emerging growth company under the JOBS Act;
- our use of proceeds from this offering;
- our financial performance and expansion of our organization;
- our ability to obtain supply of our product candidates; and
- developments and projections relating to our competitors and our industry.

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

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

USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of 1,311,277 shares of common stock offered by us in this offering will be approximately \$60.6 million, based on an assumed public offering price of \$49.57 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters exercise their option to purchase additional shares in full, we estimate that our net proceeds will be approximately \$69.8 million, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. We will not receive any of the proceeds from any sale of shares in this offering by the selling stockholders. Each \$1.00 increase (decrease) in the assumed public offering price of \$49.57 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, would increase (decrease) the net proceeds to us by approximately \$1.2 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. Each increase (decrease) of 100,000 shares in the number of shares offered by us would increase (decrease) the net proceeds to us from this offering by approximately \$4.7 million, assuming that the assumed public offering price remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds to us of this offering, together with our existing cash, cash equivalents and short-term investments, for the following purposes:

- Continued advancement of our clinical and preclinical pipeline, including potential new formulations of or indications for our existing product candidates or potential new product candidates;
- Increased investment in early-stage research capabilities and general infrastructure; and
- The remainder for other ongoing research and development, working capital, and other general corporate purposes.

Our expected use of net proceeds to us from this offering represents our current intentions based upon our present plans and business condition. As of the date of this prospectus, we cannot predict with complete certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the actual amounts that we will spend on the uses set forth above. We may also use a portion of the net proceeds to us to in-license, acquire, or invest in additional businesses, technologies, products, or assets. Although we have no specific agreements, commitments, or understandings with respect to any in-license or acquisition, we evaluate such opportunities and engage in related discussions with other companies from time to time. Due to the many variables inherent to the development of our product candidates, we cannot currently predict the stage of development we expect the net proceeds to us of this offering to achieve for our clinical studies and product candidates.

The amount and timing of our actual expenditures will depend upon numerous factors, including the results of our research and development efforts, the timing and success of preclinical studies, our ongoing clinical studies or clinical studies we may commence in the future and the timing of regulatory submissions. As a result, our management will have broad discretion over the use of the net proceeds to us from this offering.

Pending the use of the proceeds to us from this offering, we intend to invest these proceeds in interest-bearing, investment-grade securities, certificates of deposit, or government securities.

We estimate that, with our current operating plan, the proceeds from this offering, together with our existing cash, cash equivalents and short-term investments, will fund our activities through 2016.

PRICE RANGE OF COMMON STOCK

Our common stock has been publicly traded on The NASDAQ Global Select Market under the symbol “RARE” since January 31, 2014. Prior to that time, there was no public market for our common stock. The following table sets forth the high and low sale prices per share for our common stock on The NASDAQ Global Select Market for the periods indicated:

	<u>High</u>	<u>Low</u>
2014		
First Quarter (beginning January 31, 2014)	\$69.77	\$35.15
Second Quarter	\$60.00	\$32.02

On July 2, 2014, the last reported sale price of our common stock on The NASDAQ Global Select Market was \$49.57 per share. As of July 2, 2014, we had approximately 67 holders of record of our common stock. This number does not include beneficial owners whose shares are held by nominees in street name.

DIVIDEND POLICY

We have never declared or paid cash dividends on our common stock. Although we have paid dividends to our holders of preferred stock in the past, including a \$4.3 million cash dividend paid in February 2014 in connection with our initial public offering, all dividends were agreed to at the time of the private placement financings. We currently intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. Any future determination to pay dividends will be made at the discretion of our board of directors or any authorized committee thereof.

CAPITALIZATION

The following table sets forth our cash, cash equivalents and short-term investments and capitalization as of March 31, 2014:

- on an actual basis; and
- on an as-adjusted basis to reflect the issuance and sale by us of 1,311,277 shares of our common stock in this offering at an assumed public offering price of \$49.57 per share, which was the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

You should read this information together with our financial statements and related notes and the information under the captions “Selected Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” appearing in our 2013 Annual Report and March 2014 Quarterly Report, incorporated by reference in this prospectus. For more details on how you can obtain our Commission reports and other information, you should read the section of the prospectus entitled “Where You Can Find More Information.”

	As of March 31, 2014	
	Actual	As Adjusted ⁽¹⁾
	(in thousands, except share and per share data) (unaudited)	
Cash, cash equivalents and short-term investments	\$ 165,397	\$ 226,037
Stockholders’ equity:		
Preferred stock, par value \$0.001 per share—25,000,000 shares authorized; no shares issued or outstanding, actual and as adjusted	—	—
Common stock, par value \$0.001 per share—250,000,000 shares authorized; 30,049,650 shares issued and outstanding, actual; 250,000,000 shares authorized, 31,360,927 shares issued and outstanding, as adjusted	30	31
Additional paid-in capital	258,599	319,238
Accumulated other comprehensive loss	(46)	(46)
Deficit accumulated during the development stage	(92,869)	(92,869)
Total stockholders’ equity	165,714	226,354
Total capitalization	\$ 165,714	\$ 226,354

- (1) A \$1.00 increase (decrease) in the assumed public offering price of \$49.57 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, would increase (decrease) the as adjusted amount of each of cash, cash equivalents and short-term investments, additional paid-in capital, total stockholders’ equity and total capitalization by approximately \$1.2 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A 100,000 share increase (decrease) in the number of shares offered by us at the assumed public offering price of \$49.57 per share would increase (decrease) the as adjusted amount of each of cash, cash equivalents and short-term investments, additional paid-in capital, total stockholders’ equity and total capitalization by approximately \$4.7 million after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. The as adjusted information discussed above is illustrative only and will adjust based on the actual public offering price and other terms of this offering determined at pricing.

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The number of shares of common stock issued and outstanding in the table above excludes the following shares as of March 31, 2014:

- 2,396,323 shares of common stock issuable upon the exercise of outstanding stock options as of March 31, 2014 having a weighted-average exercise price of \$6.35 per share;
- 353,459 shares of common stock issuable upon the exercise of outstanding warrants as of March 31, 2014 having a weighted-average exercise price of \$3.01 per share;
- 2,167,000 shares of common stock reserved for issuance pursuant to future equity awards under our 2014 Incentive Plan as of March 31, 2014, as well as any future increases in the number of shares of our common stock reserved for future issuance under this plan; and
- 600,000 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan, or 2014 ESPP, as well as any future increases in the number of shares of our common stock reserved for future issuance under the 2014 ESPP.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted to the extent of the difference between the public offering price per share of our common stock and the as-adjusted net tangible book value per share of our common stock immediately after this offering.

Net tangible book value per share is determined by dividing our total tangible assets less our total liabilities by the number of shares of common stock outstanding. Our historical net tangible book value as of March 31, 2014 was approximately \$165.7 million, or \$5.51 per share.

Dilution per share to new investors represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the as-adjusted net tangible book value per share of common stock immediately after completion of this offering. After giving effect to the sale of 1,311,277 shares of common stock in this offering by us at an assumed public offering price of \$49.57 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our as-adjusted net tangible book value as of March 31, 2014 would have been \$226.4 million, or \$7.22 per share. This represents an immediate increase in net tangible book value of \$1.71 per share to existing stockholders and an immediate dilution of \$42.35 per share to investors participating in this offering, as illustrated in the following table:

Assumed public offering price per share		\$49.57
Historical net tangible book value per share as of March 31, 2014	\$5.51	
Increase in as-adjusted net tangible book value per share attributable to new investors	<u>1.71</u>	
As-adjusted net tangible book value per share after this offering		<u>7.22</u>
Dilution per share to investors participating in this offering		<u>\$42.35</u>

Each \$1.00 increase (decrease) in the assumed public offering price of \$49.57 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on July 2, 2014, would increase (decrease) the as adjusted net tangible book value by approximately \$1.2 million, or approximately \$0.04 per share, and increase (decrease) the dilution per share to new investors by approximately \$0.96 per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase of 100,000 shares in the number of shares offered by us would increase the as adjusted net tangible book value by approximately \$4.7 million, or \$0.12 per share, and the dilution per share to new investors would be approximately \$0.12 per share, assuming that the assumed public offering price remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, a decrease of 100,000 shares in the number of shares offered by us would decrease the as adjusted net tangible book value by approximately \$4.7 million, or approximately \$0.13 per share, and the dilution per share to new investors would be approximately \$0.13 per share, assuming that the assumed public offering price remains the same and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The as adjusted information discussed above is illustrative only and will adjust based on the actual public offering price and other terms of this offering determined at pricing.

The foregoing calculations exclude the following shares as of March 31, 2014:

- 2,396,323 shares of common stock issuable upon the exercise of outstanding stock options as of March 31, 2014 having a weighted-average exercise price of \$6.35 per share;
- 353,459 shares of common stock issuable upon the exercise of outstanding warrants as of March 31, 2014 having a weighted-average exercise price of \$3.01 per share;
- 2,167,000 shares of common stock reserved for issuance pursuant to future equity awards under our 2014 Incentive Plan as of March 31, 2014, as well as any future increases in the number of shares of our common stock reserved for future issuance under this plan; and

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- 600,000 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan, or 2014 ESPP, as well as any future increases in the number of shares of our common stock reserved for future issuance under the 2014 ESPP.

Furthermore, we may choose to raise additional capital through the sale of equity or convertible debt securities due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. New investors will experience further dilution if any of our outstanding options or warrants are exercised, new options are issued and exercised under our equity incentive plans or we issue additional shares of common stock, other equity securities or convertible debt securities in the future.

CERTAIN RELATIONSHIPS AND RELATED-PARTY TRANSACTIONS

The following is a description of transactions since January 1, 2010 to which we have been a party, in which the amount involved exceeds \$120,000, and in which any of our directors, executive officers or holders of more than 5% of our capital stock, or an affiliate or immediate family member thereof, had or will have a direct or indirect material interest. We believe the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that would be paid or received, as applicable, from unaffiliated third parties.

Sales and Purchases of Securities

Series A Convertible Preferred Stock Financing

On June 16, 2011, we sold an aggregate of 18,052,464 shares of our Series A convertible preferred stock to eight investors at a purchase price of \$1.034 per share, for an aggregate purchase price of approximately \$15.0 million in cash and \$3.7 million in converted bridge notes. On July 16, 2012, we sold, pursuant to a second tranche closing, an aggregate of 14,604,895 shares of our Series A convertible preferred stock to six investors at a purchase price of \$1.034 per share, for an aggregate purchase price of \$15.1 million in cash. The table below sets forth the aggregate number of shares of Series A convertible preferred stock sold to our directors, executive officers or holders of more than 5% of our capital stock, or an immediate family member thereof, as applicable:

<u>Name of Stockholder</u>	<u>Number of Shares of Series A Convertible Preferred Stock</u>	<u>Total Purchase Price</u>
Emil D. Kakkis, M.D., Ph.D.	1,814,944	\$ 1,876,471
William Aliski	247,049	\$ 255,424

Convertible Notes and Series A Convertible Preferred Stock Warrants

On June 30, 2010, we entered into a Note and Warrant Purchase Agreement with Emil D. Kakkis, M.D., Ph.D. Pursuant to the Note and Warrant Purchase Agreement, we issued a convertible promissory note in the amount of \$1.0 million to Dr. Kakkis and also issued him a warrant to purchase up to 241,803 shares of our Series A convertible preferred stock. Emil D. Kakkis, M.D., Ph.D. is our President and Chief Executive Officer and one of our directors.

On February 23, 2011, we entered into a Note and Warrant Purchase Agreement with William Aliski. Pursuant to the Note and Warrant Purchase Agreement, we issued a convertible promissory note in the amount of \$250,000 to Mr. Aliski and also issued him a warrant to purchase up to 84,631 shares of our Series A convertible preferred stock. William Aliski is one of our directors.

On June 14, 2011, we entered into a Note and Warrant Purchase Agreement with Emil D. Kakkis, M.D., Ph.D. Pursuant to the Note and Warrant Purchase Agreement, we issued a convertible promissory note in the amount of \$300,000 to Dr. Kakkis and also issued him a warrant to purchase up to 72,541 shares of our Series A convertible preferred stock.

On June 14, 2011, we entered into a second Note and Warrant Purchase Agreement with Emil D. Kakkis, M.D., Ph.D. Pursuant to the Note and Warrant Purchase Agreement, we issued a convertible promissory note in the amount of \$500,000 to Dr. Kakkis and also issued him a warrant to purchase up to 120,901 shares of our Series A convertible preferred stock.

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Series B Convertible Preferred Stock Financing

On December 18, 2012, we sold an aggregate of 27,081,680 shares of our Series B convertible preferred stock to 34 investors at a purchase price of \$2.769 per share, for an aggregate purchase price of approximately \$75 million in cash. The table below sets forth the aggregate number of shares of Series B convertible preferred stock sold to our directors, executive officers or holders of more than 5% of our capital stock, or an immediate family member thereof, as applicable:

<u>Name of Stockholder</u>	<u>Number of Shares of Series B Convertible Preferred Stock</u>	<u>Total Purchase Price</u>
TPG Biotechnology Partners III, L.P.	541,634	\$ 1,500,001
Beacon Bioventures Fund II Limited Partnership	541,634	\$ 1,500,001
HealthCap VI L.P.	481,452	\$ 1,333,333
Entities affiliated with A.M. Pappas Life Science Ventures IV, L.P.	240,727	\$ 666,669

Participation in our Initial Public Offering

In connection with our initial public offering, or IPO, the underwriters allocated shares of our common stock in the offering to certain of our greater than 5% holders on the same terms as the other shares that were offered and sold in our IPO. These allocations included allocations of 240,000 shares to Adage Capital Partners, L.P. and 175,000 shares to Beacon Bioventures Fund II Limited Partnership. All of these shares were sold at \$21.00, which was the price at which our common stock was sold in the IPO.

Indemnification Agreements and Directors' and Officers' Liability Insurance

We have entered into indemnification agreements with each of our directors and executive officers. These agreements, among other things, require us to indemnify each director and executive officer to the fullest extent permitted by Delaware law, including indemnification of expenses such as attorneys' fees, judgments, penalties, fines and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action or proceeding by or in right of us, arising out of the person's services as a director or executive officer.

Registration Rights Agreement

We and certain of our stockholders have entered into an investor rights agreement pursuant to which these stockholders have, among other things, registration rights under the Securities Act of 1933, as amended, with respect to common stock that they hold. See "Description of Capital Stock — Registration Rights" for a further description of the terms of this agreement.

Procedures for Related Party Transactions

We have adopted a related person transaction approval policy that governs the review, approval and/or ratification of related person transactions. Pursuant to this policy, if we want to enter into a transaction with a related person or an affiliate or immediate family member of a related person, our Chief Financial Officer will review the proposed transaction to determine, based on applicable NASDAQ and SEC rules, if such transaction qualifies as a related person transaction. If the Chief Financial Officer determines that the proposed transaction is a related person transaction, then the proposed transaction shall be submitted to the Audit Committee for pre-approval at the next regular or special Audit Committee meeting; if the Chief Financial Officer, in consultation with the Chief Executive Officer, determines that it is not practicable to wait until the next meeting of the Audit Committee, then the Chief Financial Officer shall submit the proposed transaction to the chairperson of the Audit Committee. In the event that our Chief Executive Officer or Chief Financial Officer becomes aware of a related person transaction that has not been previously approved or previously ratified under our related person transaction approval policy, the transaction, if pending or ongoing, will be promptly submitted to the Audit Committee or the chairperson of the Audit Committee for consideration. If the transaction is already completed, the Audit Committee or the chairperson of the Audit Committee shall evaluate the transaction to determine if rescission of the transaction and/or any disciplinary action is appropriate.

PRINCIPAL AND SELLING STOCKHOLDERS

The following table sets forth information relating to the beneficial ownership of our common stock as of June 20, 2014 by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our outstanding shares of common stock;
- each of our directors;
- each of our named executive officers;
- all directors and executive officers as a group; and
- each of the selling stockholders.

The number of shares beneficially owned by each entity, person, director, executive officer or selling stockholder is determined in accordance with the rules of the SEC and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any shares over which the individual or entity has sole or shared voting power or investment power as well as any shares that the individual or entity has the right to acquire within 60 days of June 20, 2014 through the exercise of any stock option, warrants or other rights. Except as otherwise indicated, and subject to applicable community property laws, the persons named in the table have sole voting and investment power with respect to all shares of common stock held by that person or entity.

The percentage of shares beneficially owned is computed on the basis of 30,059,288 shares of our common stock outstanding as of June 20, 2014. Shares of our common stock that a person or entity has the right to acquire within 60 days of June 20, 2014 are deemed outstanding for purposes of computing the percentage ownership of the person or entity holding such rights, but are not deemed outstanding for purposes of computing the percentage ownership of any other person or entity, except with respect to the percentage ownership of all directors and executive officers as a group. Unless otherwise indicated below, the address for each beneficial owner listed is c/o Ultragenyx Pharmaceutical Inc., at 60 Leveroni Court, Novato, California 94949.

The information in the table below with respect to each selling stockholder has been obtained from that selling stockholder. When we refer to the “selling stockholder” in this prospectus, we mean those persons listed in the table below as offering shares, as well as the pledgees, donees, assignees, transferees, successors and others who may hold any of the selling stockholders’ interest.

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Name of Beneficial Owner	Shares Beneficially Owned Before Offering		Shares to be Sold in Offering	Shares Beneficially Owned after Offering		Shares to be Sold if Underwriters Exercise Option in Full	Shares Beneficially Owned after Offering Assuming Underwriters Exercise Option in Full	
	Number	%		Number	%		Number	%
Stockholders Owning Greater than 5%:								
TPG Biotechnology Partners III, L.P. ⁽¹⁾	3,085,240	10.3%	488,820	2,596,420	8.3%	73,323	2,523,097	8.0%
Beacon Bioventures Fund II Limited Partnership ⁽²⁾	3,260,240	10.9%	—	3,260,240	10.4%	—	3,260,240	10.3%
HealthCap VI, L.P. ⁽³⁾	2,742,436	9.1%	—	2,742,436	8.7%	—	2,742,436	8.7%
Adage Capital Partners, L.P. ⁽⁴⁾	1,867,713	6.2%	—	1,867,713	6.0%	—	1,867,713	5.9%
Additional Selling Stockholder:								
Entities affiliated with A.M. Pappas Life Science Ventures								
IV, L.P. ⁽⁵⁾	1,371,213	4.6%	217,252	1,153,961	3.7%	32,588	1,121,373	3.6%
Directors and Named Executive Officers:								
Eran Nadav, Ph.D. ⁽⁶⁾	2,917	*	—	2,917	*	—	2,917	*
Mårten Steen, M.D., Ph.D. ⁽⁷⁾	2,917	*	—	2,917	*	—	2,917	*
William Aliski ⁽⁸⁾	68,928	*	—	68,928	*	—	68,928	*
Matthew K. Fust ⁽⁹⁾	7,917	*	—	7,917	*	—	7,917	*
Clay B. Siegall, Ph.D. ⁽¹⁰⁾	2,917	*	—	2,917	*	—	2,917	*
Emil D. Kakkis, M.D., Ph.D. ⁽¹¹⁾	3,326,181	11.0%	—	3,326,181	10.6%	—	3,326,181	10.5%
Thomas Kassberg ⁽¹²⁾	172,230	*	—	172,230	*	—	172,230	*
Shalini Sharp ⁽¹³⁾	108,184	*	—	108,184	*	—	108,184	*
All executive officers and directors as a group ⁽¹⁴⁾ (8 persons)	3,692,191	12.2%	—	3,692,191	11.8%	—	3,692,191	11.7%

* Indicates beneficial ownership of less than 1% of the total outstanding common stock.

- Based on information set forth in a Form 4 filed with the SEC by TPG Group Holdings (SBS) Advisors, Inc. on February 7, 2014. TPG Biotechnology Partners III, L.P. is a Delaware limited partnership, whose general partner is TPG Biotechnology GenPar III, L.P., a Delaware limited partnership, whose general partner is TPG Biotechnology GenPar III Advisors, LLC, a Delaware limited liability company, whose sole member is TPG Holdings I, L.P., a Delaware limited partnership, whose general partner is TPG Holdings I-A, LLC, a Delaware limited liability company, whose sole member is TPG Group Holdings (SBS), L.P., a Delaware limited partnership, whose general partner is TPG Group Holdings (SBS) Advisors, Inc., or Group Advisors, a Delaware corporation. Messrs. David Bonderman and James G. Coulter are officers and sole shareholders of Group Advisors and may therefore be deemed to be the beneficial owners of the shares held by TPG Biotechnology Partners III, L.P. Each of Messrs. Bonderman and Coulter and TPG Biotechnology Partners III, L.P. expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address for Messrs. Bonderman and Coulter and TPG Biotechnology Partners III, L.P. is c/o TPG Global, LLC, 301 Commerce Street, Suite 3300, Fort Worth, TX 76102.
- Based on information set forth in a Schedule 13G filed with the SEC by FMR LLC on February 14, 2014. Beacon Bioventures Advisors Fund II Limited Partnership is the general partner of Beacon Bioventures Fund II Limited Partnership. Beacon Bioventures Advisors Fund II Limited Partnership is solely managed by Northern Neck Investors LLC, its general partner and investment manager. Northern Neck Investors LLC is owned by the shareholders and certain employees of FMR LLC, including certain members of the family of Edward C. Johnson 3d. Members of the family of Edward C. Johnson 3d, Chairman of FMR LLC, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in

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accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. Each of the individuals and entities listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address for each of the individuals and entities listed above is 82 Devonshire Street, Boston, Massachusetts 02109.

- (3) HealthCap VI GP SA, L.L.C. ("HCSA") is the sole general partner of HealthCap VI, L.P. HCSA has voting and dispositive power over the shares held by HealthCap VI, L.P. HCSA disclaims beneficial ownership of such shares, except to the extent of its pecuniary interest therein. Francois Kaiser, Dag Richter, and Daniel Schafer, the members of the board of HCSA, share voting and dispositive power over the shares held by HealthCap VI, L.P. and may be deemed to have indirect beneficial ownership of the shares held by such entities. The members of the board of HCSA disclaim beneficial ownership of shares held by HealthCap VI, L.P. except to the extent of any pecuniary interest therein. The address of HealthCap VI, L.P. is c/o HealthCap VI GP SA, 18, Avenue d Ouchy, 1006 Lausanne, Switzerland.
- (4) Adage Capital Partners, GP, LLC ("ACPGP"), serves as the general partner of Adage Capital Partners, L.P., a Delaware limited partnership (the "Fund") and as such has discretion over the portfolio of securities beneficially owned by the Fund. Adage Capital Advisors, LLC, a Delaware limited liability company ("ACA"), is managing member of ACPGP and directs ACPGP's operations. Robert Atchinson and Phillip Gross are the managing members of ACPGP and ACA and general partners of the Fund. Robert Atchinson and Phillip Gross disclaim beneficial ownership of the reported securities except to the extent of their pecuniary interest therein. The address of Adage Capital Partners, L.P. is 200 Clarendon Street, 52nd Floor, Boston, MA 02116.
- (5) Consists of (a) 1,308,916 shares of common stock held by A.M. Pappas Life Science Ventures IV, L.P., and (b) 62,297 shares of common stock held by PV IV CEO Fund, L.P. AMP&A Management IV, LLC is the general partner of each of A.M. Pappas Life Science Ventures IV, L.P. and PV IV CEO Fund, L.P. (collectively, the "Pappas Funds"), and AMP&A Management IV, LLC has a management agreement with A.M. Pappas & Associates, LLC whereby A.M. Pappas & Associates, LLC provides management services for the Pappas Funds. As a result, A.M. Pappas & Associates, LLC's investment committee exercises sole dispositive and voting power over the shares owned by the Pappas Funds. The address for each of A.M. Pappas Life Science Ventures IV, L.P. and PV IV CEO Fund, L.P. is c/o Pappas Ventures, 2520 Meridian Parkway, Suite 400, Durham, NC 27713.
- (6) Consists of 2,917 shares of common stock issuable pursuant to stock options exercisable within 60 days of June 20, 2014.
- (7) Consists of 2,917 shares of common stock issuable pursuant to stock options exercisable within 60 days of June 20, 2014.
- (8) Consists of (a) 36,903 shares of common stock, (b) 29,108 shares of common stock that may be acquired pursuant to the exercise of a warrant held by Mr. Aliski and (c) 2,917 shares of common stock issuable pursuant to stock options exercisable within 60 days of June 20, 2014.
- (9) Consists of (a) 5,000 shares of common stock and (b) 2,917 shares of common stock issuable pursuant to stock options exercisable within 60 days of June 20, 2014.
- (10) Consists of 2,917 shares of common stock issuable pursuant to stock options exercisable within 60 days of June 20, 2014.
- (11) Consists of (a) 2,552,241 shares of common stock held by the Emil Kakkis and Jenny Soriano Living Trust, dated June 18, 2009, (b) 624,240 shares of common stock held by Dr. Kakkis and (c) 149,700 shares of common stock that may be acquired pursuant to the exercise of warrants held by Dr. Kakkis. Dr. Kakkis shares voting and dispositive power over the 2,552,241 shares of common stock held by the Emil Kakkis and Jenny Soriano Living Trust, dated June 18, 2009; each of Dr. Kakkis and Dr. Soriano is a trustee of such trust. Dr. Kakkis has sole voting and dispositive power over the 624,240 shares of common stock held by him and the 149,700 shares of common stock that may be acquired pursuant to the exercise of warrants held by Dr. Kakkis.

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- (12) Consists of (a) 125,804 shares of common stock and (b) 46,426 shares of common stock issuable pursuant to stock options exercisable within 60 days of June 20, 2014.
- (13) Consists of (a) 84,255 shares of common stock and (b) 23,929 shares of common stock issuable pursuant to stock options exercisable within 60 days of June 20, 2014.
- (14) Consists of (a) 3,428,443 shares held by our directors and officers and entities affiliated with certain of our directors, (b) 178,808 shares of common stock that may be acquired pursuant to the exercise of warrants by certain of our directors and officers, and (c) 84,940 shares of common stock issuable pursuant to stock options exercisable within 60 days of June 20, 2014 held by our directors and officers.

DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 250,000,000 shares of common stock, par value \$0.001 per share, and 25,000,000 shares of preferred stock, par value \$0.001 per share. The following description of our capital stock is intended as a summary only and is qualified in its entirety by reference to our amended and restated certificate of incorporation, and amended and restated by-laws, copies of which are incorporated by reference as exhibits to the registration statement, of which this prospectus forms a part, and to the applicable provisions of the Delaware General Corporation Law.

Common Stock

As of March 31, 2014, there were 30,049,650 shares of our common stock outstanding, held of record by approximately 65 stockholders. Based on shares outstanding as of March 31, 2014, upon completion of this offering, there will be 31,360,927 shares of our common stock outstanding.

Holders of our common stock are entitled to one vote for each share of common stock held of record for the election of directors and on all matters submitted to a vote of stockholders. Holders of our common stock are entitled to receive dividends ratably, if any, as may be declared by our board of directors out of legally available funds, subject to any preferential dividend rights of any preferred stock then outstanding. Upon our dissolution, liquidation or winding up, holders of our common stock are entitled to share ratably in our net assets legally available after the payment of all our debts and other liabilities, subject to the preferential rights of any preferred stock then outstanding. Holders of our common stock have no preemptive, subscription, redemption or conversion rights. 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. Except as described below in “Anti-Takeover Effects of Delaware Law, Our Certificate of Incorporation and Our By-laws,” the affirmative vote of a majority of our outstanding shares of capital stock is generally required to take action under our amended and restated certificate of incorporation and amended and restated by-laws.

Preferred Stock

Our board of directors is authorized, without action by the stockholders, to designate and issue up to an aggregate of 25,000,000 shares of preferred stock in one or more series. The board of directors can fix the rights, preferences and privileges of the shares of each series and any of its qualifications, limitations or restrictions. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible future financings and acquisitions and other corporate purposes could, under certain circumstances, have the effect of delaying or preventing a change in control of our company and might harm the market price of our common stock.

Our board of directors will make any determination to issue such shares based on its judgment as to our best interests and the best interests of our stockholders. We have no current plans to issue any shares of preferred stock.

Warrants

As of March 31, 2014, warrants to purchase a total of 353,459 shares of our common stock were outstanding with an exercise price of \$3.01 per share. These warrants are exercisable immediately and each expire on the first to occur of (i) the closing date of any reorganization, consolidation or merger of the Company, transfer of all or substantially all of the assets of the Company or any simultaneous sale of more than a majority of the then outstanding securities of the Company other than a mere reincorporation transaction, or (ii) the 10 year anniversary of the date of such warrant which in the case of the outstanding warrants of the Company is June 2020, February 2021 and June 2021, respectively.

Registration Rights

We are party to an amended and restated investors' rights agreement, dated as of December 18, 2012, with certain holders of our common stock. Following this offering, the holders of approximately 18.9 million shares, or 19.2 million including the shares underlying outstanding warrants, will have the right to require us to register their shares under the Securities Act of 1933, as amended. These shares will represent approximately 6.1% of our outstanding common stock after this offering, or approximately 6.1% if the underwriters exercise their option to purchase additional shares in full. These shares also may be sold under Rule 144 under the Securities Act of 1933, depending on their holding period and subject to restrictions in the case of shares held by persons deemed to be our affiliates. The registration rights will terminate (i) on February 5, 2019, which is the fifth anniversary of the closing of our initial public offering, or (ii) after this offering, as to any holder of registrable securities, when such holder holds 1% or less of our common stock and all registrable securities held by such holder can be sold in any 90-day period without registration in compliance with Rule 144.

Demand Registration Rights

Under the amended and restated investors' rights agreement, beginning July 29, 2014, which is the date that is 180 days after the effective date of the registration statement for our initial public offering, or 45 days following the effective date of any other Company-initiated registration statement, the holders of at least 50% of the registrable shares (or a lesser percentage if the anticipated aggregate offering price is not less than \$10 million) then outstanding can, on not more than two occasions, demand that we file a registration statement or request that their shares be included on a registration statement that we are otherwise filing, in either case, registering the resale of their shares of common stock. We are required to use our best efforts to effect the registration and will pay all registration expenses, other than underwriting discounts and commissions, related to any demand registration. These registration rights are subject to conditions and limitations, including the right, in certain circumstances, of the underwriters of an offering to limit the number of shares included in such registration and our right, in certain circumstances, not to effect a requested registration.

Piggyback Registration Rights

If we propose to register any of our securities under the Securities Act for our own account or the account of any other holder, the "significant holders" (as defined in the amended and restated investors' rights agreement) are entitled to notice of such registration and to request that we include registrable shares for resale on such registration statement, subject to the right of any underwriter to limit the number of shares included in such registration.

We will pay all registration expenses, other than underwriting discounts and commissions, related to any piggyback registration. The amended and restated investors' rights agreement contains customary cross-indemnification provisions, pursuant to which we are obligated to indemnify the selling stockholders, in the event of misstatements or omissions in the registration statement attributable to us and they are obligated to indemnify us for misstatements or omissions attributable to them.

Form S-3 Registration Rights

The holders of at least 10% of the registrable securities outstanding can make a written request that we register their shares on Form S-3 if we are eligible to file a registration statement on Form S-3 and if the aggregate price to the public of the shares offered is at least \$1 million. These stockholders may make an unlimited number of requests for registration on Form S-3. However, we will not be required to effect a registration on Form S-3 if we determine that such a registration would be seriously detrimental to us and our stockholders or if we have already effected three registration statements on Form S-3 in the 12-month period preceding the date of the request. We will pay all registration expenses, other than underwriting discounts and commissions, related to any S-3 registration.

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Anti-Takeover Effects of Delaware Law, our Certificate of Incorporation and Our By-laws

Our certificate of incorporation and by-laws include a number of provisions that may have the effect of encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Board Composition and Filling Vacancies

In accordance with our certificate of incorporation, our board is divided into three classes serving three-year terms, with one class being elected each year. Our certificate of incorporation also provides that directors may be removed only for cause. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by a resolution of the board.

No Written Consent of Stockholders

Our certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting.

Meetings of Stockholders

Our certificate of incorporation and by-laws provide that, subject to any rights of holders of any series of preferred stock, only the board or the chairman of the board may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our by-laws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance Notice Requirements

Our by-laws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days or more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in the by-laws. These provisions may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed. These provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

Amendment to By-laws and Certificate of Incorporation

As required by the Delaware General Corporation Law, any amendment of our certificate of incorporation must first be approved by a majority of our board of directors and, if required by law or our certificate of incorporation, thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment, and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to directors, stockholders, the amendment of our by-laws and certificate of incorporation and exclusive jurisdiction of Delaware Courts must be approved by not less than 75% of the outstanding shares entitled to vote on the amendment, and not less than 75% of the outstanding shares of each class entitled to vote thereon as a class. Our by-laws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the by-laws, and may also be amended by the affirmative vote of at least 75% of the outstanding shares entitled to vote on the amendment.

Blank Check Preferred Stock

Our certificate of incorporation provides for 25,000,000 authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Section 203 of the Delaware General Corporation Law

We are subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A “business combination” includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An “interested stockholder” is a person who, together with affiliates and associates, owns, or did own within three years prior to the determination of interested stockholder status, 15% or more of the corporation’s voting stock.

Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, the board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- 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 for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or
- at or after the time the stockholder became interested, the business combination was approved by the board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

A Delaware corporation may “opt out” of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or by-laws resulting from a stockholders’ amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

Exclusive Jurisdiction of Certain Actions

Our certificate of incorporation requires, to the fullest extent permitted by law, that derivative actions brought in our name, actions against our directors, officers and employees for breach of fiduciary duty and other similar actions may be brought only in the Court of Chancery in the State of Delaware, unless we otherwise consent. Although we believe this provision benefits us by providing increased consistency in the application of

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Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers. Although our certificate of incorporation contains the choice of forum provision described above, it is possible that a court could rule that such a provision is inapplicable for a particular claim or action or that such provision is unenforceable.

NASDAQ Global Select Market listing

Our common stock is listed on The NASDAQ Global Select Market under the symbol "RARE".

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC. The transfer agent and registrar's address is 620 15th Avenue, Brooklyn, New York 11219.

SHARES ELIGIBLE FOR FUTURE SALE

Future sales of our common stock, including shares issued upon the exercise of outstanding options or warrants, in the public market after this offering, or the perception that those sales may occur, could cause the prevailing market price for our common stock to fall or impair our ability to raise equity capital in the future. As described below, only a limited number of shares of our common stock will be available for sale in the public market for a period of several months after completion of this offering due to contractual and legal restrictions on resale described below. Future sales of our common stock in the public market either before (to the extent permitted) or after restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price of our common stock at such time and our ability to raise equity capital at a time and price we deem appropriate.

Sale of Restricted Shares

As of March 31, 2014, based on the number of shares of our common stock then outstanding and an assumed public offering price of \$49.57 per share, upon the closing of this offering, and assuming no exercise of outstanding options or warrants and no exercise of the underwriters' option to purchase additional shares, we would have had outstanding an aggregate of approximately 31,360,927 shares of common stock. Of these shares, the 6,624,423 shares sold in our initial public offering (other than any shares purchased by our then-existing investors and directors and officers), the 2,017,349 shares of common stock to be sold in this offering, including both the shares sold by us and any shares sold by the selling stockholders, as well as any shares sold upon exercise of the underwriters' option to purchase additional shares, will be freely tradable in the public market without restriction or further registration under the Securities Act of 1933, as amended, or the Securities Act, unless the shares are held by any of our "affiliates" as such term is defined in Rule 144 of the Securities Act. All remaining shares of common stock held by existing stockholders immediately prior to the completion of this offering will be "restricted securities" as such term is defined in Rule 144. These restricted securities were issued and sold by us in private transactions and are eligible for public sale only if registered under the Securities Act or if they qualify for an exemption from registration under the Securities Act, including the exemptions provided by Rule 144 or Rule 701, which rules are summarized below.

Lock-Up Agreements

In connection with this offering, we, our directors, our executive officers, and each of the selling stockholders have agreed, subject to certain exceptions, with the underwriters not to dispose of or hedge any shares of our common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of the lock-up agreement continuing through the date 90 days after the date of this prospectus, except with the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, together the representatives of the underwriters. The representatives of the underwriters have advised us that they have no current intent or arrangement to release any of the shares subject to the lock-up agreements prior to the expiration of the lock-up period.

Rule 144

In general, under Rule 144, as currently in effect, once we have been subject to the public company reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, for at least 90 days, a person (or persons whose shares are required to be aggregated) who is not deemed to have been one of our "affiliates" for purposes of Rule 144 at any time during the three months preceding a sale, and who has beneficially owned restricted securities within the meaning of Rule 144 for at least six months, including the holding period of any prior owner other than one of our "affiliates," is entitled to sell those shares in the public market (subject to the lock-up agreement referred to above, if applicable) without complying with the manner of sale, volume limitations or notice provisions of Rule 144, but subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than "affiliates," then such person is entitled to sell

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such shares in the public market without complying with any of the requirements of Rule 144 (subject to the lock-up agreement referred to above, if applicable).

In general, under Rule 144, as currently in effect, once we have been subject to the public company reporting requirements of the Exchange Act for at least 90 days, our “affiliates,” as defined in Rule 144, who have beneficially owned the shares proposed to be sold for at least six months are entitled to sell in the public market, upon expiration of any applicable lock-up agreements and within any three-month period, a number of those shares of our common stock that does not exceed the greater of:

- one percent of the number of common shares then outstanding, which will equal approximately 313,609 shares of common stock immediately after this offering (calculated on the basis of the number of shares of our common stock outstanding as of March 31, 2014, the assumptions described above and assuming no exercise of the underwriter’s option to purchase additional shares and no exercise of outstanding options or warrants); or
- the average weekly trading volume of our common stock on The NASDAQ Global Select Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Such sales under Rule 144 by our “affiliates” or persons selling shares on behalf of our “affiliates” are also subject to certain manner of sale provisions, notice requirements and to the availability of current public information about us.

Rule 701

In general, under Rule 701 of the Securities Act, any of our employees, directors, officers, consultants or advisors, other than our affiliates, who purchased shares from us in connection with a qualified compensatory stock plan or other written agreement in compliance with Rule 701 before the effective date of a registration statement under the Securities Act is entitled to rely on Rule 701 to resell such shares in reliance on Rule 144. An affiliate of the issuer can resell shares in reliance on Rule 144 without having to comply with the holding period requirements of Rule 144, and a non-affiliate of the issuer can resell shares in reliance on Rule 144 without having to comply with the holding period requirements of Rule 144 and without regard to the volume of such sales or the availability of public information about the issuer.

The SEC has indicated that Rule 701 will apply to typical stock options granted by an issuer before it becomes subject to the reporting requirements of the Exchange Act, along with the shares acquired upon exercise of such options, including exercises after an issuer becomes subject to the reporting requirements of the Exchange Act.

Equity Incentive Plans and Employee Stock Purchase Plan

We have filed with the SEC a registration statement under the Securities Act covering the shares of common stock that we may issue (i) upon exercise of outstanding options under the 2011 Equity Incentive Plan, as amended, exercise of outstanding options under the 2014 Incentive Plan, and options reserved for issuance under the 2014 Incentive Plan, and (ii) pursuant to the 2014 Employee Stock Purchase Plan. Such registration statement was filed and became effective in March 2014. Accordingly, shares registered under such registration statement are available for sale in the open market, subject to Rule 144 volume limitations for affiliates and the lock-up agreements described above, if applicable.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax consequences to non-U.S. holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or foreign tax laws are not discussed. This discussion is based on the Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated under the Code, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, or IRS, in effect as of the date of this offering. These authorities may change or be subject to differing interpretations. Any such change may be applied retroactively in a manner that could adversely affect a non-U.S. holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to non-U.S. holders that hold our common stock as a “capital asset” within the meaning of Section 1221 of the Code (property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a non-U.S. holder’s particular circumstances, including the impact of the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to non-U.S. holders subject to particular rules, including, without limitation:

- U.S. expatriates and certain former citizens or long-term residents of the United States;
- persons subject to the alternative minimum tax;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies and other financial institutions;
- real estate investment trusts or regulated investment companies;
- brokers, dealers or traders in securities;
- “controlled foreign corporations,” “passive foreign investment companies” and corporations that accumulate earnings to avoid U.S. federal income tax;
- S corporations, partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes;
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation; and
- tax-qualified retirement plans.

If a partnership (or other entity treated as a partnership for U.S. federal income tax purposes) holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATION PURPOSES ONLY AND IS NOT INTENDED AS TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a Non-U.S. Holder

For purposes of this discussion, a “non-U.S. holder” is any beneficial owner of our common stock that is neither a “U.S. person” nor a partnership for United States federal income tax purposes. A U.S. person is any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity taxable as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more United States persons (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section entitled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if we do make distributions on our common stock, such distributions of cash or property on our common stock will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a non-U.S. holder’s adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below in the section titled “— Sale or Other Taxable Disposition.”

Dividends paid to a non-U.S. holder of our common stock generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty). Even if a non-U.S. holder is eligible for a lower treaty rate, dividend payments will generally be subject to withholding at a 30% rate (rather than the lower treaty rate) unless the non-U.S. holder provides a valid IRS Form W-8BEN or W-8BEN-E (or applicable successor form) certifying such holder’s qualification for the reduced rate.

Non-U.S. holders who do not timely provide us or our paying agent with the required certification, but who qualify for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. holders should consult their tax advisors regarding their entitlement to benefits under a tax treaty.

Subject to the discussions below regarding backup withholding and foreign accounts, if dividends paid to a non-U.S. holder are effectively connected with the non-U.S. holder’s conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the non-U.S. holder maintains a permanent establishment in the United States to which such dividends are attributable), the non-U.S. holder will be exempt from U.S. federal withholding tax. To claim the exemption, the non-U.S. holder must furnish to us or our paying agent a valid IRS Form W-8ECI (or applicable successor form), certifying that the dividends are effectively connected with the non-U.S. holder’s conduct of a trade or business within the United States.

Any dividends paid on our common stock that are effectively connected with a non-U.S. holder’s U.S. trade or business (and, if required by an applicable tax treaty, attributable to a permanent establishment maintained by the non-U.S. holder in the United States) generally will be subject to U.S. federal income tax on a net income basis in the same manner as if such holder were a U.S. person. A non-U.S. holder that is a corporation also may, under certain circumstances, be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable tax treaty) on any effectively connected dividends that it receives. Non-U.S. holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Sale or Other Taxable Disposition

Subject to the discussions below regarding backup withholding and foreign accounts, a non-U.S. holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the non-U.S. holder maintains a permanent establishment in the United States to which such gain is attributable);
- the non-U.S. holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a U.S. real property interest, or USRPI, by reason of our status as a U.S. real property holding corporation, or a USRPHC, for U.S. federal income tax purposes.

Gain described in the first bullet point above will generally be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates. If a non-U.S. holder is eligible for the benefits of a tax treaty between the United States and its country of residence, any such gain will be subject to U.S. federal income tax in the manner specified by the treaty. To claim the benefit of a treaty, a non-U.S. holder must properly submit an IRS Form W-8BEN (or suitable successor or substitute form). A non-U.S. holder that is a foreign corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

A non-U.S. holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on any gain derived from the disposition, which may be offset by certain U.S. source capital losses of the non-U.S. holder (even though the individual is not considered a resident of the United States) provided the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we are not currently and do not anticipate becoming a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our USRPIs relative to the fair market value of our other business assets and our non-U.S. real property interests, there can be no assurance we are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a non-U.S. holder of our common stock will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, and such non-U.S. holder owned, actually or constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other disposition or the non-U.S. holder's holding period.

Non-U.S. holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

A non-U.S. holder will not be subject to backup withholding with respect to payments of dividends on our common stock we make to the non-U.S. holder, provided the holder certifies its non-U.S. status, such as by providing a valid IRS Form W-8BEN, W-8ECI, or other applicable IRS Form, or otherwise establishes an exemption. However, information returns will be filed with the IRS in connection with any dividends on our common stock paid to the non-U.S. holder, regardless of whether any tax was actually withheld. Copies of these information returns may also be made available under the provisions of a specific treaty or agreement to the tax authorities of the country in which the non-U.S. holder resides or is established.

Information reporting and, depending on the circumstances, backup withholding will apply to the proceeds of a sale of our common stock within the United States or conducted through certain U.S.-related financial intermediaries, unless the beneficial owner certifies under penalty of perjury that it is a non-U.S. holder on Form W-8BEN or other applicable form or such owner otherwise establishes an exemption.

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Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a non-U.S. holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Legislation incorporating provisions referred to as the Foreign Account Tax Compliance Act, or "FATCA," was enacted March 18, 2010. A 30% withholding tax may be imposed on dividends paid on, and the gross proceeds from the sale or other disposition of, our common stock paid to a "foreign financial institution" (as defined in the Code) or to a "non-financial foreign entity" (as defined in the Code) (whether such foreign financial institution or non-financial foreign entity is the beneficial owner or an intermediary), unless (1) in the case of a foreign financial institution, the entity undertakes certain diligence and reporting obligations, (2) in the case of a non-financial foreign entity, the entity either certifies that it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain U.S. persons or U.S.-owned foreign entities (as defined in applicable Treasury Regulations), annually report certain information about such accounts, and withhold 30% on payments to non-compliant foreign financial institutions and certain other account holders. Foreign governments may enter into an agreement with the IRS to implement FATCA in a different manner. Under current IRS guidance, FATCA withholding will apply to payments of dividends on our common stock made on or after July 1, 2014, and to payments of gross proceeds from the sale or other disposition of such stock on or after January 1, 2017. Prospective investors should consult their tax advisors regarding these withholding provisions.

UNDERWRITING

We and the selling stockholders are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC are acting as joint book-running managers of the offering and as representatives of the underwriters. We and the selling stockholders have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we and the selling stockholders have severally agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover of this prospectus, the number of shares of common stock listed next to its name in the following table:

<u>Name</u>	<u>Number of shares</u>
J.P. Morgan Securities LLC	
Morgan Stanley & Co. LLC	
Cowen and Company, LLC	
Robert W. Baird & Co. Incorporated	
Total	2,017,349

The underwriters are committed to purchase all the shares of common stock offered by us and the selling stockholders if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated. The shares to be sold by us and the selling stockholders are subject to lock-up restrictions agreed to in connection with our initial public offering, which closed in February 2014. The underwriters for our initial public offering have consented to the release of the lock-up restrictions with respect to the shares to be sold in this offering.

The underwriters propose to offer the shares of common stock directly to the public at the public offering price set forth on the cover of this prospectus and to certain dealers at that price less a concession not in excess of \$ _____ per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to \$ _____ per share from the public offering price. After the public offering of the shares, the offering price and other selling terms may be changed by the underwriters. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

We and the selling stockholders have granted the underwriters an option to buy up to an additional 196,691 and 105,911 shares of our common stock, respectively, to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us and the selling stockholders per share of common stock. The underwriting fee is \$ _____ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

<u>Paid by us</u>	<u>Without exercise of option to purchase additional shares</u>	<u>With full exercise of option to purchase additional shares</u>
Per Share	\$	\$
Total	\$	\$
<u>Paid by the selling stockholders</u>	<u>Without exercise of option to purchase additional shares</u>	<u>With full exercise of option to purchase additional shares</u>
Per Share	\$	\$
Total	\$	\$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be

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approximately \$460,000. We have agreed to reimburse the underwriters for all expenses relating to the clearance of this offering with the Financial Industry Regulatory Authority (in an amount not to exceed \$25,000).

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, or file with the Securities and Exchange Commission a registration statement under the Securities Act of 1933, as amended (the "Securities Act"), relating to, any shares of our common stock or any securities convertible into or exchangeable or exercisable for any shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (ii) enter into any swap or other arrangement that transfers all or a portion of the economic consequences associated with the ownership of any shares of our common stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of our common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC for a period of 90 days after the date of this prospectus, other than (i) the shares of our common stock to be sold hereunder, (ii) any shares of our common stock issued upon the exercise of options granted under our existing management incentive plans or warrants described as outstanding in the registration statement of which this prospectus forms a part, (iii) any options and other awards granted under an equity incentive plan described in the registration statement of which this prospectus forms a part, (iv) our filing of any registration statement on Form S-8 or a successor form thereto relating to an equity incentive plan described in the registration statement of which this prospectus forms a part, and (v) shares of common stock or other securities issued in connection with a transaction with an unaffiliated third party that includes a bona fide commercial relationship (including joint ventures, marketing or distribution arrangements, collaboration agreements or intellectual property license agreements) or any acquisition of assets or acquisition of not less than a majority or controlling portion of the equity of another entity, provided that (x) the aggregate number of shares issued pursuant to this clause (v) shall not exceed five percent (5%) of the total number of outstanding shares of common stock immediately following the issuance and sale of the shares of common stock in this offering and (y) the recipient of any such shares of common stock and securities issued pursuant to this clause (v) during the 90-day restricted period described above shall enter into a lock-up agreement.

Our directors and executive officers as well as the selling stockholders have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions, for a period of 90 days after the date of this prospectus, may not, without the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock (including without limitation, common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers and shareholders in accordance with the rules and regulations of the Securities and Exchange Commission and securities which may be issued upon exercise of a stock option or warrant), or publicly disclose the intention to make any offer, sale, pledge or disposition, (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of our common stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise or (3) make any demand for or exercise any right with respect to the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock. The restrictions described in the immediately preceding paragraph to do not apply to:

- transfers or dispositions of shares of common stock (or any security convertible into or exercisable or exchangeable for common stock):
 - as a bona fide gift;

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- to any trust for the direct or indirect benefit of the party subject to the lock-up restrictions or the immediate family of such person;
- to any corporation, partnership, limited liability company, investment fund or other entity controlled or managed, or under common control or management by the party subject to the lock-up restrictions or the immediate family of such person;
- by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the party subject to the lockup restrictions; and
- as distributions to partners, members or stockholders of the party subject to the lock-up restrictions,

provided that in the case of any transfer or distribution pursuant to the above five subclauses, (i) each donee or distributee shall sign and deliver a lock-up letter substantially in the form executed by the party subject to the lock-up restrictions and (ii) no filing under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of common stock, shall be required or shall be voluntarily made during the restricted period (other than a filing on Form 5);

- sales or transfers of common stock made pursuant to a trading plan pursuant to Rule 10b5-1 under the Exchange Act (“Rule 10b5-1”) that has been entered into prior to the date of this prospectus, provided that to the extent a public announcement or filing under the Exchange Act, if any, is required or voluntarily made by or on behalf of the party subject to such lock-up restrictions regarding any such sales or transfers, such announcement or filing shall include a statement to the effect that the sale or transfer was made pursuant to a trading plan pursuant to Rule 10b5-1;
- the establishment of a trading plan pursuant to Rule 10b5-1 for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of common stock during the restricted period and (ii) no filing under the Exchange Act or other public announcement shall be required or voluntarily made by or on behalf of the party subject to the lock-up restrictions regarding the establishment of such plan;
- the exercise of options to purchase shares of common stock granted under any stock incentive plan or stock purchase plan of the Company, provided that the underlying shares shall continue to be subject to the restrictions on transfer set forth in this agreement and provided further that no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the restricted period (other than a filing on Form 5);
- the exercise (whether for cash, cashless, or net exercise) of warrants to purchase shares of common stock (or any security convertible into or exercisable or exchangeable for common stock), provided that the underlying shares shall continue to be subject to the lock-up restrictions and provided further that, other than in respect of warrants that will expire or automatically exercise by their terms in connection with this offering, no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the restricted period (other than a filing on Form 5);
- the transfer of shares of common stock (or any security convertible into common stock) to the Company or sold in connection with a vesting event of the Company’s securities or upon the exercise of options to purchase the Company’s securities, on a “cashless” or “net exercise” basis or to cover tax withholding obligations of the party subject to the lock-up restrictions in connection with such vesting or exercise provided that no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the restricted period (other than a filing on Form 5);
- the transfer or disposition of the shares of common stock (or any security convertible into or exercisable or exchangeable for common stock) held by the party subject to the lock-up restrictions that occurs by operation of law, such as pursuant to a qualified domestic order or in connection with a divorce settlement provided that each transferee shall sign and deliver a lock-up letter substantially in the form executed by the party subject to the lock-up restrictions;

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- the transfer of shares of common stock (or any security convertible into or exercisable or exchangeable for common stock) pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of the common stock involving a change of control of the Company, provided that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the common stock owned by the party subject to the lock-up restrictions shall remain subject to such restrictions;
- transactions by any person other than us relating to shares of common stock or other securities acquired in open market transactions after the completion of the offering of the shares, provided that no filing under Section 16(a) of the Exchange Act is required or voluntarily made in connection with subsequent sales of the common stock or other securities acquired in such open market transactions (other than a filing on Form 5); or
- any securities to be sold pursuant to the underwriting agreement.

We and the selling stockholders have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

Our common stock is listed on The NASDAQ Global Select Market under the symbol “RARE.”

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be “covered” shorts, which are short positions in an amount not greater than the underwriters’ option to purchase additional shares referred to above, or may be “naked” shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on The NASDAQ Global Select Market, in the over-the-counter market or otherwise.

Selling Restrictions

General

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or

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any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

United Kingdom

Each underwriter has represented and agreed that:

(1) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of our common shares in circumstances in which Section 21(1) of the FSMA does not apply to us; and

(2) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to our common shares in, from or otherwise involving the United Kingdom.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “Relevant Member State”), an offer to the public of any shares which are the subject of the offering contemplated by this prospectus (the “Shares”) may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any Shares may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

(1) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(2) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives for any such offer; or

(3) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of Shares shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an “offer to the public” in relation to any Shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any Shares to be offered so as to enable an investor to decide to purchase any Shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression “Prospectus Directive” means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State, and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.

Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or the SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this

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prospectus nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or the CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Hong Kong

The shares may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a “prospectus” within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the “SFA”), (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries’ rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial Instruments and Exchange Law) and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

LEGAL MATTERS

Gibson, Dunn & Crutcher LLP, San Francisco, California will pass upon the validity of the shares of common stock offered hereby. Certain legal matters in connection with this offering will be passed upon for the underwriters by Latham & Watkins LLP, Costa Mesa, California.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2013, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are required to file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document filed by us at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. Our filings with the SEC are also available to the public at the SEC's Internet web site at <http://www.sec.gov>.

We have filed a registration statement, of which this prospectus is a part, covering the securities offered hereby. As allowed by SEC rules, this prospectus does not include all of the information contained in the registration statement and the included exhibits, financial statements and schedules. You are referred to the registration statement, the included exhibits, financial statements and schedules for further information. This prospectus is qualified in its entirety by such other information.

We are subject to the information and periodic reporting requirements of the Exchange Act and, in accordance therewith, file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information are available for inspection and copying at the public reference room and website of the SEC referred to above. We maintain a website at www.ultragenyx.com. The reference to our website address does not constitute incorporation by reference of the information contained on our website, and you should not consider the contents of our website in making an investment decision with respect to our common stock.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus.

We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (Commission File No. 001-36276).

- our Annual Report on Form 10-K for the year ended December 31, 2013, filed with the SEC on March 24, 2014;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed with the SEC on May 12, 2014;
- our Definitive Proxy Statement on Schedule 14A, filed with the SEC on May 23, 2014; and
- our Current Reports on Form 8-K filed with the SEC on February 5, 2014 and February 25, 2014 (other than the portions of those reports not deemed to be filed).

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We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. You should direct any requests for documents to Ultragenyx Pharmaceutical Inc., 60 Leveroni Court, Novato, California, 94949. Copies of the above reports may also be accessed from our web site at <http://www.ultragenyx.com>.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus modifies, supersedes or replaces such statement.

2,017,349 shares



Common Stock

Prospectus

J.P. Morgan

Morgan Stanley

**Cowen and Company
Baird**

, 2014

PART II
Information Not Required in Prospectus

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses, other than the underwriting discounts and commissions, payable by the registrant in connection with the sale of common stock being registered. All amounts are estimates except for the SEC registration fee and the FINRA filing fee.

<u>Item</u>	<u>Amount to be paid</u>
SEC registration fee	\$ 14,812
FINRA filing fee	17,750
Printing and engraving expenses	115,000
Legal fees and expenses	150,000
Accounting fees and expenses	135,000
Blue Sky, qualification fees and expenses	7,500
Transfer Agent fees and expenses	10,000
Miscellaneous expenses	9,938
Total	<u>\$ 460,000</u>

Item 14. Indemnification of Directors and Officers.

Section 145(a) of the Delaware General Corporation Law provides, in general, that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), because he or she is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding, if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

Section 145(b) of the Delaware General Corporation Law provides, in general, that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor because the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made with respect to any claim, issue or matter as to which he or she shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, he or she is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or other adjudicating court shall deem proper.

Section 145(g) of the Delaware General Corporation Law provides, in general, that a corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his or her status as such, whether or not the corporation would have the power to indemnify the person against such liability under Section 145 of the Delaware General Corporation Law.

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Article VI of our amended and restated certificate of incorporation (the “Charter”), provides that no director of our company shall be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, except for liability (1) for any breach of the director’s duty of loyalty to us or our stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) in respect of unlawful dividend payments or stock redemptions or repurchases, or (4) for any transaction from which the director derived an improper personal benefit. In addition, our Charter provides that if the Delaware General Corporation Law is amended to authorize the further elimination or limitation of the liability of directors, then the liability of a director of our company shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law, as so amended.

Article VI of the Charter further provides that any repeal or modification of such article by our stockholders or amendment to the Delaware General Corporation Law will not adversely affect any right or protection existing at the time of such repeal or modification with respect to any acts or omissions occurring before such repeal or modification of a director serving at the time of such repeal or modification.

We have entered into indemnification agreements with each of our directors and our executive officers. These agreements provide that we will indemnify each of our directors and such officers to the fullest extent permitted by law and the Charter.

We also maintain an insurance policy that covers certain liabilities of directors and officers of our company arising out of claims based on acts or omissions in their capacities as directors or officers.

In any underwriting agreement we enter into in connection with the sale of common stock being registered hereby, attached hereto as exhibit 1.1, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act against certain liabilities.

Item 15. Recent Sales of Unregistered Securities.

In the three years preceding the filing of this registration statement, we have issued the following securities that were not registered under the Securities Act.

Series A Convertible Preferred Stock Financing

On June 16, 2011, we sold an aggregate of 18,052,464 shares of our Series A convertible preferred stock to eight investors at a purchase price of \$1.034 per share, for an aggregate purchase price of approximately \$15.0 million in cash and \$3.7 million in converted bridge notes. On July 16, 2012, we sold, pursuant to a second tranche closing, an aggregate of 14,604,895 shares of our Series A convertible preferred stock to six investors at a purchase price of \$1.034 per share, for an aggregate purchase price of \$15.1 million in cash. We claimed exemption from registration under the Securities Act for the sale and issuance of these securities by virtue of Section 4(a)(2) and/or Regulation D promulgated thereunder as transactions not involving any public offering. All of the purchasers of unregistered securities for which we relied on Section 4(a)(2) and/or Regulation D represented that they were accredited investors as defined under the Securities Act. We claimed such exemption on the basis that (a) the purchasers in each case represented that they intended to acquire the securities for investment only and not with a view to the distribution thereof and that they either received adequate information about the registrant or had access, through employment or other relationships, to such information and (b) appropriate legends were affixed to the stock certificates issued in such transactions.

Series A Paid-in-Kind Dividends

On August 16, 2012, we issued an aggregate of 1,193,088 shares of our Series A convertible preferred stock to holders of our Series A convertible preferred stock in accordance with Article IV.B.1.(a) of our Certificate of Incorporation that was filed with the Secretary of State of the State of Delaware on June 13, 2011. We claimed exemption from registration under the Securities Act for the sale and issuance of these securities by virtue of Section 4(a)(2) and/or Regulation D promulgated thereunder as transactions not involving any public offering.

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On December 14, 2012, we issued an aggregate of 499,447 shares of our Series A convertible preferred stock to holders of our Series A convertible preferred stock in accordance with Article IV.B.1.(a) of our Certificate of Incorporation that was filed with the Secretary of State of the State of Delaware on June 13, 2011. We claimed exemption from registration under the Securities Act for the sale and issuance of these securities by virtue of Section 4(a)(2) and/or Regulation D promulgated thereunder as transactions not involving any public offering.

Series B Convertible Preferred Stock Financing

On December 18, 2012, we sold an aggregate of 27,081,680 shares of our Series B convertible preferred stock to 34 investors at a purchase price of \$2.7694 per share, for an aggregate purchase price of approximately \$75 million in cash. We claimed exemption from registration under the Securities Act for the sale and issuance of these securities by virtue of Section 4(a)(2) and/or Regulation D promulgated thereunder as transactions not involving any public offering. All of the purchasers of unregistered securities for which we relied on Section 4(a)(2) and/or Regulation D represented that they were accredited investors as defined under the Securities Act. We claimed such exemption on the basis that (a) the purchasers in each case represented that they intended to acquire the securities for investment only and not with a view to the distribution thereof and that they either received adequate information about the registrant or had access, through employment or other relationships, to such information and (b) appropriate legends were affixed to the stock certificates issued in such transactions.

Stock Options

From November 17, 2011 through March 23, 2014, we granted stock options to employees under our 2011 Equity Incentive Plan, as amended, covering an aggregate of 3,446,580 shares of common stock, at a weighted-average average exercise price of \$4.61 per share. Of these, options covering an aggregate of 262,098 shares were cancelled without being exercised and we sold an aggregate of 788,130 shares of common stock to employees for cash consideration in the aggregate amount of \$0.3 million upon the exercise of stock options.

We claimed exemption from registration under the Securities Act for these sales and issuances under Section 4(a)(2) of the Securities Act in that such sales and issuances did not involve a public offering or under Rule 701 promulgated under the Securities Act, in that they were offered and sold either pursuant to written compensatory plans or pursuant to a written contract relating to compensation, as provided by Rule 701.

Item 16. Exhibits and Financial Statement Schedules.

The exhibits to the registration statement are listed in the Exhibit Index attached hereto and incorporated by reference herein.

Item 17. Undertakings.

- (a) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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(b) The undersigned registrant hereby undertakes that:

- (1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
- (2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Signatures

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this Amendment No. 1 to Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in Novato, California, on July 7, 2014.

ULTRAGENYX PHARMACEUTICAL INC.

By: /s/ EMIL D. KAKKIS
Emil D. Kakkis, M.D., Ph.D.
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act, this Amendment No. 1 to Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ EMIL D. KAKKIS</u> Emil D. Kakkis, M.D., Ph.D.	Director, President and Chief Executive Officer <i>(Principal Executive Officer)</i>	July 7, 2014
<u>/s/ SHALINI SHARP</u> Shalini Sharp	Senior Vice President, Chief Financial Officer <i>(Principal Financial Officer)</i>	July 7, 2014
<u>/s/ THEODORE A. HUIZENGA</u> Theodore A. Huizenga	Corporate Controller <i>(Principal Accounting Officer)</i>	July 7, 2014
<u>*</u> Eran Nadav, Ph.D.	Chairman of the Board	July 7, 2014
<u>*</u> Matthew K. Fust	Director	July 7, 2014
<u>*</u> Clay B. Siegall Ph.D.	Director	July 7, 2014
<u>*</u> Mårten Steen, M.D., Ph.D.	Director	July 7, 2014
<u>*</u> William Aliski	Director	July 7, 2014

*By: /s/ Shalini Sharp
Shalini Sharp
Attorney-in-fact

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Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
1.1	Form of Underwriting Agreement				X
3.1	Amended and Restated Certificate of Incorporation	8-K	2/5/2014	3.1	
3.2	Amended and Restated Bylaws	8-K	2/5/2014	3.2	
4.1	Reference is made to Exhibits 3.1 and 3.2				
4.2	Form of Common Stock Certificate	S-1	11/8/2013	4.2	
4.3	Warrant, dated as of June 30, 2010, issued to Emil D. Kakkis, M.D., Ph.D.	S-1	11/8/2013	4.3	
4.4	Warrant, dated as of February 15, 2011, issued to the John and Cynthia Klock Charitable Trust	S-1	11/8/2013	4.4	
4.5	Warrant, dated as of February 23, 2011, issued to William E. Aliski	S-1	11/8/2013	4.5	
4.6	Warrant, dated as of June 14, 2011, issued to Emil D. Kakkis, M.D., Ph.D.	S-1	11/8/2013	4.6	
4.7	Warrant, dated as of June 14, 2011, issued to Emil D. Kakkis, M.D., Ph.D.	S-1	11/8/2013	4.7	
4.8	Amended and Restated Investors' Rights Agreement, dated as of December 18, 2012, among the Registrant and the investors named therein	S-1	11/8/2013	4.8	
5.1	Opinion of Gibson, Dunn & Crutcher LLP				X
10.1†	Collaboration and License Agreement, dated as of August 29, 2013, between the Registrant and Kyowa Hakko Kirin Co., Ltd.	S-1	12/23/2013	10.1	
10.2†	License Agreement, dated as of March 1, 2011, between the Registrant and AAIPharma Services Corp.	S-1	12/23/2013	10.2	
10.3†	License Agreement, dated as of September 20, 2012, between the Registrant and Baylor Research Institute	S-1	12/23/2013	10.3	
10.4†	Amendment to the License Agreement, dated as of March 22, 2013, between the Registrant and Baylor Research Institute	S-1	11/8/2013	10.4	
10.5†	Exclusive License Agreement, dated as of April 23, 2012, between the Registrant and HIBM Research Group	S-1	11/8/2013	10.5	
10.6†	Collaboration and License Agreement, dated as of September 30, 2010, between the Registrant and Nobelpharma Co., Ltd.	S-1	12/23/2013	10.6	
10.7†	License Agreement, dated as of September 1, 2012, between the Registrant and St. Jude Children's Research Hospital	S-1	12/23/2013	10.7	
10.8†	Exclusive License Agreement, dated as of November 22, 2010, between the Registrant and Saint Louis University	S-1	12/23/2013	10.8	
10.9†	Supply Agreement, dated as of November 19, 2012, between the Registrant and CREMER OLEO GmbH & Co KG	S-1	12/23/2013	10.9	

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<u>Exhibit Number</u>	<u>Exhibit Description</u>	<u>Incorporated by Reference</u>			<u>Filed Herewith</u>
		<u>Form</u>	<u>Date</u>	<u>Number</u>	
10.10†	Development and Clinical Supply Agreement, dated as of August 31, 2012, between the Registrant and Rentschler Biotechnologie GmbH	S-1	11/8/2013	10.10	
10.11#	2011 Equity Incentive Plan (including forms of Stock Option Grant Notice and Stock Option Agreement thereunder)	S-1	11/8/2013	10.11	
10.12#	Amendment to the 2011 Equity Incentive Plan	S-1	11/8/2013	10.12	
10.13#	2014 Incentive Plan	S-1	1/17/2014	10.13	
10.14#	Form of Incentive Stock Option Agreement	S-1	1/17/2014	10.14	
10.15#	Form of Non Statutory Stock Option Agreement (Employees)	S-1	1/17/2014	10.15	
10.16#	Form of Non-Statutory Stock Option Agreement (Directors)	S-1	1/17/2014	10.16	
10.17#	Form of Restricted Stock Unit Agreement (Employees)	S-1	1/17/2014	10.17	
10.18#	Form of Restricted Stock Unit Agreement (Directors)	S-1	1/17/2014	10.18	
10.19#	2014 Employee Stock Purchase Plan	S-1	1/17/2014	10.19	
10.20#	Executive Employment Agreement, dated as of June 15, 2011, between the Registrant and Emil D. Kakkis, M.D., Ph.D.	S-1	11/8/2013	10.20	
10.21#	Offer Letter, dated as of October 31, 2011, between the Registrant and Thomas Kassberg	S-1	11/8/2013	10.21	
10.22#	Offer Letter, dated as of March 12, 2012, between the Registrant and Shalini Sharp	S-1	11/8/2013	10.22	
10.23#	Form of Indemnification Agreement	10-K	3/24/2014	10.23	
10.24	Standard Lease, dated as of July 5, 2011, between the Registrant and Condiotti Enterprises, Inc.	S-1	11/8/2013	10.24	
10.25	License and Services Agreement, dated as of September 24, 2010, between the Registrant and The Buck Institute for Age Research	S-1	11/8/2013	10.25	
10.26	Amendment No. 1 to License and Services Agreement, dated as of September 4, 2012, between the Registrant and The Buck Institute for Research on Aging	S-1	11/8/2013	10.26	
10.27#	Corporate Bonus Plan	S-1	1/17/2014	10.27	
10.28	Addendum #3 To The Lease By and Between the Registrant and Condiotti Enterprises, Inc.	8-K	2/25/2014	10.1	
23.1	Consent of Independent Registered Public Accounting Firm				X
23.2	Consent of Gibson, Dunn & Crutcher LLP (included in Exhibit 5.1)				X
24.1	Power of Attorney	S-1	6/25/2014	24.1	

† Confidential treatment has been granted for certain information contained in this exhibit. Such information has been omitted and filed separately with the SEC.

Indicates management contract or compensatory plan.

ULTRAGENYX PHARMACEUTICAL INC.

[—] Shares of Common Stock

Underwriting Agreement

July [—], 2014

J. P. Morgan Securities LLC
Morgan Stanley & Co. LLC

As Representatives of the
several Underwriters listed
in Schedule 1 hereto

c/o J. P. Morgan Securities LLC
383 Madison Avenue
New York, New York 10179

c/o Morgan Stanley & Co. LLC
1585 Broadway
New York, New York 10036

Ladies and Gentlemen:

Ultragenyx Pharmaceutical Inc., a Delaware corporation (the “Company”), proposes to issue and sell to the several Underwriters listed in Schedule 1 hereto (the “Underwriters”), for whom you are acting as representatives (the “Representatives”), an aggregate of [—] shares of common stock, par value \$0.001 per share (the “Common Stock”), of the Company and certain stockholders of the Company named in Schedule 2 hereto (the “Selling Stockholders”) propose to sell to the several Underwriters an aggregate of [—] shares of Common Stock (collectively with the shares offered by the Company, the “Underwritten Shares”). In addition, the Company proposes to issue and sell up to an additional [—] shares of Common Stock of the Company, and the Selling Stockholders propose to sell up to an additional [—] shares of Common Stock of the Company, at the option of the Underwriters (the “Option Shares”). The Underwritten Shares and the Option Shares are herein referred to as the “Shares”. The shares of Common Stock of the Company to be outstanding after giving effect to the sale of the Shares are referred to herein as the “Stock”.

The Company and the Selling Stockholders hereby confirm their agreement with the several Underwriters concerning the purchase and sale of the Shares, as follows:

1. **Registration Statement.** The Company has prepared and filed with the Securities and Exchange Commission (the “Commission”) under the Securities Act of 1933, as amended, and the rules and regulations of the Commission thereunder (collectively, the “Securities Act”), a registration statement on Form S-1 (File No. 333-197008), including a prospectus, relating to the Shares. Such registration statement, as amended at the time it became effective, including the information, if any, deemed pursuant to Rule 430A, 430B or 430C under the Securities Act to be part of the registration statement at the time of its effectiveness (“Rule 430 Information”), is referred to herein as the “Registration Statement”; and as used herein, the term “Preliminary Prospectus” means each prospectus included in such registration statement (and any amendments thereto) before effectiveness, any prospectus filed with the Commission pursuant to Rule 424(a) under the Securities Act and the prospectus included in the Registration

Statement at the time of its effectiveness that omits Rule 430 Information, and the term “Prospectus” means the prospectus in the form first used (or made available upon request of purchasers pursuant to Rule 173 under the Securities Act) in connection with confirmation of sales of the Shares. If the Company has filed an abbreviated registration statement pursuant to Rule 462(b) under the Securities Act (the “Rule 462 Registration Statement”), then any reference herein to the term “Registration Statement” shall be deemed to include such Rule 462 Registration Statement. Any reference in this underwriting agreement (this “Agreement”) to the Registration Statement, any Preliminary Prospectus or the Prospectus shall be deemed to refer to and include the documents incorporated by reference therein pursuant to Item 12 of Form S-1 under the Securities Act, as of the effective date of the Registration Statement or the date of such Preliminary Prospectus or the Prospectus, as the case may be. Capitalized terms used but not defined herein shall have the meanings given to such terms in the Registration Statement and the Prospectus.

At or prior to the Applicable Time (as defined below), the Company had prepared the following information (collectively with the pricing information set forth on Annex A, the “Pricing Disclosure Package”): a Preliminary Prospectus dated July [—], 2014 and each “free-writing prospectus” (as defined pursuant to Rule 405 under the Securities Act) listed on Annex A hereto.

“Applicable Time” means [4:30 P.M.], New York City time, on July [—], 2014.

2. Purchase of the Shares by the Underwriters.

(a) The Company agrees to issue and sell, and each of the Selling Stockholders agrees, severally and not jointly, to sell, the Underwritten Shares to the several Underwriters as provided in this Agreement, and each Underwriter, on the basis of the representations, warranties and agreements set forth herein and subject to the conditions set forth herein, agrees, severally and not jointly, to purchase at a price per share (the “Purchase Price”) of \$[—] (i) from the Company the respective number of Underwritten Shares set forth opposite such Underwriter’s name in Schedule 1 hereto and (ii) from each of the Selling Stockholders the number of Underwritten Shares (to be adjusted by you so as to eliminate fractional shares) determined by multiplying the aggregate number of Underwritten Shares to be sold by each of the Selling Stockholders as set forth opposite their respective names in Schedule 2 hereto by a fraction, the numerator of which is the aggregate number of Underwritten Shares to be purchased by such Underwriter as set forth opposite the name of such Underwriter in Schedule 1 hereto and the denominator of which is the aggregate number of Underwritten Shares to be purchased by all the Underwriters from all of the Selling Stockholders hereunder.

In addition, the Company agrees to issue and sell the Company’s portion of the Option Shares to the several Underwriters as provided in this Agreement, and the Underwriters, on the basis of the representations, warranties and agreements set forth herein and subject to the conditions set forth herein, shall have the option to purchase, severally and not jointly, from the Company such Option Shares at the Purchase Price less an amount per share equal to any dividends or distributions declared by the Company and payable on the Underwritten Shares but not payable on the Option Shares. In addition, each of the Selling Stockholders agrees, severally and not jointly, as and to the extent indicated in Schedule 2 hereto, to sell the Option Shares to the several Underwriters as provided in this Agreement, and the Underwriters, on the basis of the representations, warranties and agreements set forth herein and subject to the conditions set forth herein, shall have the option to purchase, severally and not jointly, from each Selling Stockholder the Option Shares at the Purchase Price less an amount per share equal to any dividends or distributions declared by the Company and payable on the Underwritten Shares but not payable on the Option Shares.

If any Option Shares are to be purchased, the number of Option Shares to be purchased by each Underwriter shall be the number of Option Shares which bears the same ratio to the aggregate number of

Option Shares being purchased as the number of Underwritten Shares set forth opposite the name of such Underwriter in Schedule 1 hereto (or such number increased as set forth in Section 12 hereof) bears to the aggregate number of Underwritten Shares being purchased from the Company and from such Selling Stockholder by the several Underwriters, subject, however, to such adjustments to eliminate any fractional Shares as the Representatives in their sole discretion shall make.

The Underwriters may exercise the option to purchase Option Shares at any time in whole, or from time to time in part, on or before the thirtieth day following the date of the Prospectus, by written notice from the Representatives to the Company and the Selling Stockholders. Such notice shall set forth the aggregate number of Option Shares as to which the option is being exercised and the date and time when the Option Shares are to be delivered and paid for, which may be the same date and time as the Closing Date (as hereinafter defined) but shall not be earlier than the Closing Date or later than the tenth full business day (as hereinafter defined) after the date of such notice (unless such time and date are postponed in accordance with the provisions of Section 12 hereof). Except with respect to Option Shares to be purchased on the Closing Date (for which notice shall be given at least one business day prior to the Closing Date), if any, any such notice shall be given at least two business days prior to the date and time of delivery specified therein.

(b) The Company and the Selling Stockholders understand that the Underwriters intend to make a public offering of the Shares as soon after the effectiveness of this Agreement as in the judgment of the Representatives is advisable, and initially to offer the Shares on the terms set forth in the Prospectus. The Company and the Selling Stockholders acknowledge and agree that the Underwriters may offer and sell Shares to or through any affiliate of an Underwriter.

(c) Payment for the Shares shall be made by wire transfer in immediately available funds to the accounts specified by the Company and the Selling Stockholders or any of them (with regard to payment to the Selling Stockholders), to the Representatives in the case of the Underwritten Shares, at the offices of Latham & Watkins LLP, counsel for the Underwriters, at 140 Scott Drive, Menlo Park, California 94025 at 10:00 A.M., New York City time, on July [—], 2014, or at such other time or place on the same or such other date, not later than the fifth business day thereafter, as the Representatives, the Company and the Selling Stockholders may agree upon in writing or, in the case of the Option Shares, on the date and at the time and place specified by the Representatives in the written notice of the Underwriters' election to purchase such Option Shares. The time and date of such payment for the Underwritten Shares is referred to herein as the "Closing Date", and the time and date for such payment for the Option Shares, if other than the Closing Date, is herein referred to as the "Additional Closing Date".

Payment for the Shares to be purchased on the Closing Date or the Additional Closing Date, as the case may be, shall be made against delivery to the Representatives for the respective accounts of the several Underwriters of the Shares to be purchased on such date or the Additional Closing Date, as the case may be, with any transfer taxes payable in connection with the sale of such Shares duly paid by the Company and the Selling Stockholders, as applicable. Delivery of the Shares shall be made through the facilities of The Depository Trust Company ("DTC") unless the Representatives shall otherwise instruct.

(d) Each of the Company and each Selling Stockholder acknowledges and agrees that the Underwriters are acting solely in the capacity of an arm's length contractual counterparty to the Company and the Selling Stockholders with respect to the offering of Shares contemplated hereby (including in connection with determining the terms of the offering) and not as a financial advisor or a fiduciary to, or an agent of, the Company, the Selling Stockholders or any other person. Additionally, neither the Representatives nor any other Underwriter is advising the Company, the Selling Stockholders or any other person as to any legal, tax, investment, accounting or regulatory matters in any jurisdiction. The Company and the Selling Stockholders shall consult with their own advisors concerning such matters and

shall be responsible for making their own independent investigations and appraisals of the transactions contemplated hereby, and the Underwriters shall have no responsibility or liability to the Company or the Selling Stockholders with respect thereto. Any review by the Underwriters of the Company, the transactions contemplated hereby or other matters relating to such transactions will be performed solely for the benefit of the Underwriters and shall not be on behalf of the Company or the Selling Stockholders.

3. Representations and Warranties of the Company. The Company represents and warrants to each Underwriter and the Selling Stockholders that:

(a) *Preliminary Prospectus.* No order preventing or suspending the use of any Preliminary Prospectus has been issued by the Commission, and each Preliminary Prospectus included in the Pricing Disclosure Package, at the time of filing thereof, complied in all material respects with the Securities Act, and no Preliminary Prospectus, at the time of filing thereof, contained any untrue statement of a material fact or omitted to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation and warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in any Preliminary Prospectus, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 9(c) hereof.

(b) *Pricing Disclosure Package.* The Pricing Disclosure Package as of the Applicable Time did not, and as of the Closing Date and as of the Additional Closing Date, as the case may be, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation and warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in such Pricing Disclosure Package, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 9(c) hereof.

(c) *Issuer Free Writing Prospectus.* Other than the Registration Statement, the Preliminary Prospectus and the Prospectus, the Company (including its agents and representatives, other than the Underwriters in their capacity as such) has not prepared, used, authorized, approved or referred to and will not prepare, use, authorize, approve or refer to any "written communication" (as defined in Rule 405 under the Securities Act) that constitutes an offer to sell or solicitation of an offer to buy the Shares (each such communication by the Company or its agents and representatives (other than a communication referred to in clause (i) below) an "Issuer Free Writing Prospectus") other than (i) any document not constituting a prospectus pursuant to Section 2(a)(10)(a) of the Securities Act or Rule 134 under the Securities Act or (ii) the documents listed on Annex A hereto, each electronic road show and any other written communications approved in writing in advance by the Representatives. Each such Issuer Free Writing Prospectus complied in all material respects with the Securities Act, has been or will be (within the time period specified in Rule 433) filed in accordance with the Securities Act (to the extent required thereby) and, when taken together with any other Issuer Free Writing Prospectus, the Preliminary Prospectus accompanying, or delivered prior to delivery of, such Issuer Free Writing Prospectus, did not, and as of the Closing Date and as of the Additional Closing Date, as the case may be, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the

circumstances under which they were made, not misleading; provided that the Company makes no representation and warranty with respect to any statements or omissions made in each such Issuer Free Writing Prospectus or Preliminary Prospectus in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in such Issuer Free Writing Prospectus or Preliminary Prospectus, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 9(c) hereof. Each such Issuer Free Writing Prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Shares or until any earlier date that the Company notified or notifies the Representatives as described in Section 5(d), did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus.

(d) *Emerging Growth Company*. From the time of initial filing of the Registration Statement with the Commission through the date hereof, the Company has been and is an “emerging growth company,” as defined in Section 2(a) of the Securities Act (an “Emerging Growth Company”).

(e) *Testing-the-Waters Materials*. The Company (i) has not alone engaged in any Testing-the-Waters Communications and (ii) has not authorized anyone to engage in Testing-the-Waters Communications. The Company has not distributed or approved for distribution any Written Testing-the-Waters Communications. “Testing-the-Waters Communication” means any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Securities Act. “Written Testing-the-Waters Communication” means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the Securities Act.

(f) *Registration Statement and Prospectus*. The Registration Statement has been declared effective by the Commission. No order suspending the effectiveness of the Registration Statement has been issued by the Commission, and no proceeding for that purpose or pursuant to Section 8A of the Securities Act against the Company or related to the offering of the Shares has been initiated or, to the knowledge of the Company, threatened by the Commission; as of the applicable effective date of the Registration Statement and any post-effective amendment thereto, the Registration Statement and any such post-effective amendment, as of the date of such amendment, complied and will comply in all material respects with the Securities Act, and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading; and as of the date of the Prospectus and any amendment or supplement thereto and as of the Closing Date and as of the Additional Closing Date, as the case may be, the Prospectus complied and will comply in all material respects with the Securities Act and will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation and warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in the Registration Statement and the Prospectus and any amendment or supplement thereto, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 9(c) hereof.

(g) *Incorporated Documents*. The documents incorporated by reference in the Registration Statement, the Prospectus and the Pricing Disclosure Package, when they were filed

with the Commission conformed in all material respects to the requirements of the Exchange Act, and none of such documents contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(h) *Financial Statements.* The financial statements (including the related notes thereto) of the Company included or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus comply in all material respects with the applicable requirements of the Securities Act and present fairly, in all material respects, the financial position of the Company as of the dates indicated and the results of its operations and the changes in its cash flows for the periods specified; such financial statements have been prepared in conformity with generally accepted accounting principles in the United States (“GAAP”) applied on a consistent basis throughout the periods covered thereby, except in the case of unaudited, interim financial statements, which are subject to normal year-end adjustments and do not contain certain footnotes as permitted by the applicable rules of the Commission, and any supporting schedules included or incorporated by reference in the Registration Statement present fairly, in all material respects, the information required to be stated therein; and the other financial information included or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus has been derived from the accounting records of the Company and presents fairly, in all material respects, the information shown thereby; and the *pro forma* financial information and the related notes thereto included in the Registration Statement, the Pricing Disclosure Package and the Prospectus have been prepared in accordance with the applicable requirements of the Securities Act and the assumptions underlying such *pro forma* financial information are reasonable and are set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(i) *No Material Adverse Change.* Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus, (i) there has not been any change in the capital stock (other than the issuance of shares of Common Stock upon exercise of stock options and warrants described as outstanding in, and the grant of options and awards under existing equity incentive plans described in, the Registration Statement, the Pricing Disclosure Package and the Prospectus), short-term debt or long-term debt of the Company, or any dividend or distribution of any kind declared, set aside for payment, paid or made by the Company on any class of capital stock, or any material adverse change, or any development that would be reasonably expected to result in a material adverse change, in or affecting the business, properties, management, financial position, stockholders’ equity or results of operations or prospects of the Company; (ii) the Company has not entered into any transaction or agreement (whether or not in the ordinary course of business) that is material to the Company or incurred any liability or obligation, direct or contingent, that is material to the Company; and (iii) the Company has not sustained any loss or interference with its business that is material to the Company and that is either from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor disturbance or dispute or any action, order or decree of any court or arbitrator or governmental or regulatory authority, except in each case as otherwise disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(j) *Organization and Good Standing.* The Company has been duly organized and is validly existing and in good standing under the laws of its jurisdiction of organization, is duly qualified to do business and is in good standing in each jurisdiction in which its ownership or lease of property or the conduct of its business requires such qualification, and has all power and authority necessary to own or hold its properties and to conduct the business in which it is

engaged, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, be reasonably expected to have a material adverse effect on the business, properties, management, financial position, stockholders' equity, results of operations or prospects of the Company or on the performance by the Company of its obligations under this Agreement (a "Material Adverse Effect"). The Company does not own or control, directly or indirectly, any corporation, association or other entity.

(k) *Capitalization.* The Company has an authorized capitalization as set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus under the heading "Capitalization" and "Description of Capital Stock"; all the outstanding shares of capital stock of the Company (including the Shares to be sold by the Selling Stockholders) have been duly and validly authorized and issued and are fully paid and non-assessable and are not subject to any pre-emptive or similar rights that have not been duly waived or satisfied; except as described in or expressly contemplated by the Pricing Disclosure Package and the Prospectus, there are no outstanding rights (including, without limitation, pre-emptive rights), warrants or options to acquire, or instruments convertible into or exchangeable for, any shares of capital stock or other equity interest in the Company, or any contract, commitment, agreement, understanding or arrangement of any kind relating to the issuance of any capital stock of the Company, any such convertible or exchangeable securities or any such rights, warrants or options; the capital stock of the Company conforms in all material respects to the description thereof contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(l) *Stock Options.* With respect to the stock options (the "Stock Options") granted pursuant to the stock-based compensation plans of the Company (the "Company Stock Plans"), (i) to the Company's knowledge, each Stock Option intended to qualify as an "incentive stock option" under Section 422 of the Internal Revenue Code of 1986, as amended (the "Code")) so qualifies, (ii) each grant of a Stock Option was duly authorized no later than the date on which the grant of such Stock Option was by its terms to be effective (the "Grant Date") by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any), to the Company's knowledge, was duly executed and delivered by each party thereto, (iii) each such grant was made in accordance with the terms of the Company Stock Plans, the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission thereunder (collectively, the "Exchange Act") and the rules of The NASDAQ Global Select Market and any other exchange on which Company securities are traded, and (iv) each such grant was properly accounted for in accordance with GAAP in the financial statements (including the related notes) of the Company. Each Company Stock Plan is accurately described in all material respects in the Registration Statement, the Pricing Disclosure Package and the Prospectus. The Company has not knowingly granted, and there is no and has been no policy or practice of the Company of granting, Stock Options prior to, or otherwise coordinating the grant of Stock Options with, the release or other public announcement of material information regarding the Company or its results of operations or prospects.

(m) *Due Authorization.* The Company has full right, power and authority to execute and deliver this Agreement and to perform its obligations hereunder; and all action required to be taken for the due and proper authorization, execution and delivery by it of this Agreement and the consummation by it of the transactions contemplated hereby has been duly and validly taken.

(n) *Underwriting Agreement.* This Agreement has been duly authorized, executed and delivered by the Company.

(o) *The Shares*. The Shares to be issued and sold by the Company hereunder have been duly authorized by the Company and, when issued and delivered and paid for as provided herein, will be duly and validly issued, will be fully paid and nonassessable and will conform to the descriptions thereof in the Registration Statement, the Pricing Disclosure Package and the Prospectus; and the issuance of the Shares is not subject to any preemptive or similar rights.

(p) *Description of the Underwriting Agreement*. This Agreement conforms in all material respects to the description thereof contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(q) *No Violation or Default*. The Company is not (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company is a party or by which the Company is bound or to which any of the property or assets of the Company is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (ii) and (iii) above, for any such default or violation that would not, individually or in the aggregate, have a Material Adverse Effect.

(r) *No Conflicts*. The execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Shares and the consummation of the transactions contemplated by this Agreement will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company is a party or by which the Company is bound or to which any of the property or assets of the Company is subject, (ii) result in any violation of the provisions of the charter or by-laws of the Company or (iii) result in the violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (i) and (iii) above, for any such conflict, breach, violation or default that would not reasonably be expected to, individually or in the aggregate, have a Material Adverse Effect.

(s) *No Integration*. The Company has not, prior to the date hereof, made any offer or sale of any securities that would be integrated with the offer and sale of the Shares contemplated by this Agreement pursuant to the Securities Act or the interpretation thereof by the Commission.

(t) *No Consents Required*. No consent, filing, approval, authorization, order, license, registration or qualification of or with any court or arbitrator or governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Shares and the consummation of the transactions contemplated by this Agreement, except for the registration of the Shares under the Securities Act and such consents, approvals, authorizations, orders and registrations or qualifications as may be required by the Financial Industry Regulatory Authority, Inc. ("FINRA") or The NASDAQ Stock Market and under applicable state securities laws in connection with the purchase and distribution of the Shares by the Underwriters.

(u) *Legal Proceedings*. Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, there are no legal, governmental or regulatory investigations, actions, suits or proceedings pending to which the Company is or may be a party or to which any property of the Company is or may be the subject that, individually or in the

aggregate, if determined adversely to the Company, could reasonably be expected to have a Material Adverse Effect or have a material adverse effect on the power or ability of the Company to perform its obligations under this Agreement or to consummate the transactions contemplated hereby; no such investigations, actions, suits or proceedings are threatened or, to the knowledge of the Company, contemplated by any governmental or regulatory authority or threatened by others; and (i) there are no current or pending legal, governmental or regulatory actions, suits or proceedings that are required under the Securities Act to be described in the Registration Statement, the Pricing Disclosure Package or the Prospectus that are not so described in the Registration Statement, the Pricing Disclosure Package and the Prospectus and (ii) there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement or described in the Registration Statement, the Pricing Disclosure Package or the Prospectus that are not so filed as exhibits to the Registration Statement or described in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(v) *Independent Accountants*. Ernst & Young LLP, who has certified certain financial statements of the Company, is an independent registered public accounting firm with respect to the Company within the applicable rules and regulations adopted by the Commission and the Public Company Accounting Oversight Board (United States) and as required by the Securities Act.

(w) *Title to Real and Personal Property*. The Company has good and marketable title in fee simple (in the case of real property) to, or has valid and marketable rights to lease or otherwise use, all items of real and personal property and assets that are material to the business of the Company, in each case free and clear of all liens, encumbrances, claims and defects and imperfections of title except those that (i) do not materially interfere with the use made and proposed to be made of such property by the Company or (ii) could not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

(x) *Title to Intellectual Property*. Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company owns, or has valid, binding and enforceable licenses for, or other rights to use on reasonable terms, the patents and patent applications, copyrights, trademarks, trademark registrations, service marks, service mark registrations, trade names, service names and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) used in the conduct of, or necessary for the proposed conduct of, the business of the Company in the manner described in the Registration Statement, the Pricing Disclosure Package and the Prospectus (collectively, the "Company Intellectual Property"); except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, to the knowledge of the Company, the patents, trademarks, and copyrights included within the Company Intellectual Property are valid, enforceable, and subsisting, and there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the validity, enforceability or scope of any Company Intellectual Property and the Company is unaware of any facts which would form a reasonable basis for such claim; other than as disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, (i) there is no pending or threatened action, suit, proceeding or claim by others that the Company infringes, misappropriates or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement, the Pricing Disclosure Package or the Prospectus, infringe or otherwise misappropriate or violate any rights of others with respect to any of the Company's products, proposed products, processes and the Company has not received any notice of any such claim of infringement, misappropriation or violation; (ii) to the knowledge of the Company, neither the sale nor use of any of products, proposed products or processes of the

Company referred to in the Registration Statement, the Pricing Disclosure Package or the Prospectus do or will, infringe, interfere or conflict with any right or valid patent claim of any third party, and (iii) to the knowledge of the Company, no third party has any ownership right in or to any Company Intellectual Property that is owned by the Company, and, to the knowledge of the Company, no third party has any ownership right in or to any Company Intellectual Property in any field of use that is exclusively licensed to the Company, other than any licensor to the Company of such Company Intellectual Property and (iv) to the knowledge of the Company, none of the technology employed by the Company has been obtained or is being used by the Company in violation of any contractual obligation binding on the Company or upon any of its officers, directors or employees, and the Company is not aware of any facts that it believes would form a reasonable basis for a successful challenge that any of its employees are in or have ever been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where such violation relates to such employee's breach of a confidentiality obligation, obligation to assign to the Company Intellectual Property, or obligation not to use third party intellectual property or other proprietary rights on behalf of the Company. Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, all patents and patent applications owned by, and, to the knowledge of the Company, all patent and patent applications licensed to the Company or under which the Company has rights have, been duly and properly filed and maintained; to the knowledge of the Company, the parties prosecuting such applications have complied with their duty of candor and disclosure to the U.S. Patent and Trademark Office (the "USPTO") in connection with such applications; and the Company is not aware of any facts required to be disclosed to the USPTO that were not disclosed to the USPTO and which would preclude the grant of a patent in connection with any such application or could form the basis of a finding of invalidity with respect to any patents that have issued with respect to such applications.

(y) *FDA Compliance.* Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company: (A) is and at all times has been in compliance with all statutes, rules or regulations of the U.S. Food and Drug Administration ("FDA") and other comparable federal, state, local or foreign governmental and regulatory authorities ("Governmental Authority") applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, storage, import, export or disposal of any product under development, manufactured or distributed by the Company ("Applicable Laws"), except where such noncompliance would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; (B) has not received any FDA Form 483, notice of adverse finding, warning letter, untitled letter or other correspondence or notice from the FDA or any Governmental Authority alleging or asserting material noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, exemptions, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws ("Authorizations"); (C) possesses all Authorizations, except where failure to possess an Authorization would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, and such Authorizations are valid and in full force and effect and the Company is in compliance with the terms of such Authorizations, except where such noncompliance would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; (D) has not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from the FDA or any Governmental Authority or third party alleging that any product, operation or activity is in material violation of any Applicable Laws or Authorizations and has no knowledge that the FDA or any Governmental Authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (E)

has not received notice that the FDA or any Governmental Authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any material Authorizations and has no knowledge that the FDA or any Governmental Authority is considering such action; and (F) has filed, obtained, maintained or submitted all reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations except where failure to do so would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were materially complete and correct on the date filed (or were corrected or supplemented by a subsequent submission).

(z) *Clinical Studies*. The studies, tests and preclinical and clinical trials conducted by or, to the Company's knowledge, on behalf of the Company that are described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, or the results of which are referred to in the Registration Statement, the Pricing Disclosure Package and the Prospectus, as applicable, were and, if still ongoing, are being conducted in all material respects in accordance with standard medical and scientific research standards and Applicable Laws, including, without limitation, the Federal Food, Drug and Cosmetic Act and the rules and regulations promulgated thereunder (collectively, "FFDCA"); the descriptions of the results of such studies, tests and trials contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus are, to the Company's knowledge, accurate and complete in all material respects and fairly present the data derived from such studies, tests and trials; except to the extent disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company is not aware of any studies, tests or trials, the results of which the Company believes reasonably call into question the study, test, or trial results described or referred to in the Registration Statement, the Pricing Disclosure Package and the Prospectus when viewed in the context in which such results are described and the clinical state of development; and, except to the extent disclosed in the Registration Statement, the Pricing Disclosure Package or the Prospectus, the Company has not received any notices or correspondence from the FDA or any Governmental Authority requiring the termination or suspension of any studies, tests or preclinical or clinical trials conducted by or on behalf of the Company that are described in the Registration Statement, the Pricing Disclosure Package and the Prospectus or the results of which are referred to in the Registration Statement, the Pricing Disclosure Package and the Prospectus, other than ordinary course communications with respect to modifications in connection with the design and implementation of such trials.

(aa) *No Undisclosed Relationships*. No relationship, direct or indirect, exists between or among the Company, on the one hand, and the directors, officers, stockholders, customers or suppliers of the Company, on the other, that is required by the Securities Act to be described in the Registration Statement and the Prospectus and that is not so described in such documents and in the Pricing Disclosure Package.

(bb) *Investment Company Act*. The Company is not and, after giving effect to the offering and sale of the Shares and the application of the proceeds thereof as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, will not be required to register as an "investment company" or an entity "controlled" by an "investment company" within the meaning of the Investment Company Act of 1940, as amended, and the rules and regulations of the Commission thereunder (collectively, the "Investment Company Act").

(cc) *Taxes*. The Company has paid all federal, state, local and foreign taxes and filed all tax returns required to be paid or filed through the date hereof, except where the failure to file would not, individually or in the aggregate, reasonably be expected to have a Material Adverse

Effect; and except as otherwise disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, there is no tax deficiency that has been, or could reasonably be expected to be, asserted against the Company or any of its properties or assets and which would reasonably be expected to have a Material Adverse Effect.

(dd) *Licenses and Permits.* The Company possesses all licenses, certificates, permits and other authorizations issued by, and has made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of its properties or the conduct of its business as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, except where the failure to possess or make the same would not, individually or in the aggregate, have a Material Adverse Effect; and except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company has not received notice of any revocation or modification of any such license, certificate, permit or authorization and has no reason to believe that any such license, certificate, permit or authorization will not be renewed in the ordinary course. To the Company's knowledge, no party granting any such licenses has taken any action to limit, suspend or revoke the same in any material respect.

(ee) *No Labor Disputes.* No labor disturbance by or dispute with employees of the Company exists or, to the knowledge of the Company, is contemplated or threatened, and the Company is not aware of any existing or imminent labor disturbance by, or dispute with, the employees of any of its principal suppliers, contractors or customers, except as would not have a Material Adverse Effect.

(ff) *Compliance with and Liability under Environmental Laws.* (i) The Company (a) is, and since inception was, in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, requirements, decisions, judgments, decrees, orders and the common law relating to pollution or the protection of the environment, natural resources or human health or safety, including those relating to the generation, storage, treatment, use, handling, transportation, Release or threat of Release of Hazardous Materials (collectively, "Environmental Laws"), (b) has received and is in compliance with all permits, licenses, certificates or other authorizations or approvals required of it under applicable Environmental Laws to conduct its business, (c) has not received notice of any actual or potential liability under or relating to, or actual or potential violation of, any Environmental Laws, including for the investigation or remediation of any Release or threat of Release of Hazardous Materials, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice, (d) is not conducting or paying for, in whole or in part, any investigation, remediation or other corrective action pursuant to any Environmental Law at any location, and (e) is not a party to any order, decree or agreement that imposes any obligation or liability under any Environmental Law, and (ii) there are no costs or liabilities associated with Environmental Laws of or relating to the Company, except in the case of each of (i) and (ii) above, for any such matter, as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; and (iii) except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, (a) there are no proceedings that are pending, or, to the knowledge of the Company, contemplated, against the Company under any Environmental Laws in which a governmental entity is also a party, other than such proceedings regarding which it is reasonably believed no monetary sanctions of \$100,000 or more will be imposed, (b) the Company is not aware of any facts or issues regarding its compliance with Environmental Laws, or liabilities or other obligations under Environmental Laws, including the Release or threat of Release of Hazardous Materials, that, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect, and (c) the Company does not anticipate material capital expenditures relating to any Environmental Laws.

(gg) *Hazardous Materials*. There has been no storage, generation, transportation, use, handling, treatment, Release or threat of Release of Hazardous Materials by, relating to or caused by the Company (or, to the knowledge of the Company, any other entity (including any predecessor) for whose acts or omissions the Company is or would reasonably be expected to be liable) at, on, under or from any property or facility now or previously owned, operated or leased by the Company, or at, on, under or from any other property or facility, in violation of any Environmental Laws or in a manner or amount or to a location that would reasonably be expected to result in any liability under any Environmental Law, except for any violation or liability which would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. "Hazardous Materials" means any material, chemical, substance, waste, pollutant, contaminant, compound, mixture, or constituent thereof, in any form or amount, including petroleum (including crude oil or any fraction thereof) and petroleum products, natural gas liquids, asbestos and asbestos containing materials, naturally occurring radioactive materials, brine, and drilling mud, regulated or which can give rise to liability under any Environmental Law. "Release" means any spilling, leaking, seepage, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, disposing, depositing, dispersing, or migrating in, into or through the environment, or in, into from or through any building or structure.

(hh) *Compliance with ERISA*. (i) Each employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), for which the Company or any member of its "Controlled Group" (defined as any organization which is a member of a controlled group of corporations within the meaning of Section 414 of the Code) would have any liability (each, a "Plan") has been maintained in compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Code, except for noncompliance that would not reasonably be expected to result in material liability to the Company; (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any Plan excluding transactions effected pursuant to a statutory or administrative exemption that could reasonably be expected to result in a material liability to the Company; (iii) for each Plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, the minimum funding standard of Section 412 of the Code or Section 302 of ERISA, as applicable, has been satisfied (without taking into account any waiver thereof or extension of any amortization period) and is reasonably expected to be satisfied in the future (without taking into account any waiver thereof or extension of any amortization period); (iv) the fair market value of the assets of each Plan exceeds the present value of all benefits accrued under such Plan (determined based on those assumptions used to fund such Plan); (v) no "reportable event" (within the meaning of Section 4043(c) of ERISA) has occurred or is reasonably expected to occur that either has resulted, or could reasonably be expected to result, in material liability to the Company; (vi) neither the Company nor any member of the Controlled Group has incurred, nor reasonably expects to incur, any liability under Title IV of ERISA (other than contributions to the Plan or premiums to the PBGC, in the ordinary course and without default) in respect of a Plan (including a "multiemployer plan", within the meaning of Section 4001(a)(3) of ERISA); and (vii) there is no pending audit or investigation by the Internal Revenue Service, the U.S. Department of Labor, the Pension Benefit Guaranty Corporation or any other governmental agency or any foreign regulatory agency with respect to any Plan that could reasonably be expected to result in material liability to the Company. None of the following events has occurred or is reasonably likely to occur: (x) a material increase in the aggregate amount of contributions required to be made to all

Plans by the Company in the current fiscal year of the Company compared to the amount of such contributions made in the Company's most recently completed fiscal year; or (y) a material increase in the Company's "accumulated post-retirement benefit obligations" (within the meaning of Statement of Financial Accounting Standards 106) compared to the amount of such obligations in the Company's most recently completed fiscal year.

(ii) *Disclosure Controls*. The Company maintains an effective system of "disclosure controls and procedures" (as defined in Rule 13a-15(e) of the Exchange Act) that complies with the requirements of the Exchange Act and that has been designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms, including controls and procedures designed to ensure that such information is accumulated and communicated to the Company's management as appropriate to allow timely decisions regarding required disclosure. The Company has carried out evaluations of the effectiveness of its disclosure controls and procedures as required by Rule 13a-15 of the Exchange Act.

(jj) *Accounting Controls*. The Company maintains systems of "internal control over financial reporting" (as defined in Rule 13a-15(f) of the Exchange Act) that are designed to comply with the requirements of the Exchange Act and have been designed by, or under the supervision of, its principal executive and principal financial officers, or persons performing similar functions, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, including, but not limited to, internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences; and (v) interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and is prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, there are no material weaknesses in the Company's internal controls. The Company's auditors and the Audit Committee of the Board of Directors of the Company have been advised of: (i) all significant deficiencies and material weaknesses, if any, in the design or operation of internal controls over financial reporting which have adversely affected or are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal controls over financial reporting.

(kk) *eXtensible Business Reporting Language*. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(ll) *Insurance*. The Company has insurance covering its properties, operations, personnel and businesses, including business interruption insurance, which insurance is in amounts and insures against such losses and risks as are generally maintained by companies engaged in the same or similar business and which the Company reasonably believes are adequate

to protect the Company and its business; and the Company (i) has not received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance or (ii) has no reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage at reasonable cost from similar insurers as may be necessary to continue its business.

(mm) *No Unlawful Payments.* Neither the Company nor, to the knowledge of the Company, any director, officer, agent, employee or other person associated with or acting on behalf of the Company has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds; (iii) violated or is in violation of any provision of the Foreign Corrupt Practices Act of 1977; or (iv) made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment. The Company and its affiliates have instituted and maintain and will continue to maintain policies and procedures designed to promote and achieve compliance with such laws and with the representation and warranty contained herein.

(nn) *Compliance with Money Laundering Laws.* The operations of the Company are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the "Money Laundering Laws") and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(oo) *Compliance with OFAC.* None of the Company or, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company is, or is owned or controlled by a person that is currently, or at any time within the past five years was, (i) subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury ("OFAC") or (ii) located, organized or resident in a country or territory that is subject of such sanctions; and the Company will not, directly or indirectly, use the proceeds of the offering of the Shares hereunder, or lend, contribute or otherwise make available such proceeds to any joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

(pp) *No Broker's Fees.* The Company is not a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against the Company or any Underwriter for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Shares.

(qq) *No Registration Rights.* Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, no person has the right to require the Company to register any securities for sale under the Securities Act by reason of the filing of the Registration Statement with the Commission, the issuance and sale of the Shares by the Company or, to the knowledge of the Company, the sale of the Shares to be sold by the Selling Stockholders hereunder.

(rr) *No Stabilization*. The Company has not taken, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in any stabilization or manipulation of the price of the Shares.

(ss) *Margin Rules*. The application of the proceeds received by the Company from the issuance, sale and delivery of the Shares as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus will not violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(tt) *Forward-Looking Statements*. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) contained in the Registration Statement, the Pricing Disclosure Package or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(uu) *Statistical and Market Data*. Nothing has come to the attention of the Company that has caused the Company to believe that the statistical and market-related data included or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus is not based on or derived from sources that are reliable and accurate in all material respects.

(vv) *Sarbanes-Oxley Act*. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply with any applicable provision of the Sarbanes-Oxley Act of 2002, as amended, and the rules and regulations promulgated in connection therewith (the "Sarbanes-Oxley Act"), including Section 402 related to loans and Sections 302 and 906 related to certifications.

(ww) *Status under the Securities Act*. At the time of filing the Registration Statement and any post-effective amendment thereto, at the earliest time thereafter that the Company or any offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2) under the Securities Act) of the Shares and at the date hereof, the Company was not and is not an "ineligible issuer," as defined in Rule 405 under the Securities Act.

(xx) *No Rated Securities*. There are no debt securities or preferred stock of, or guaranteed by, the Company that are rated by a "nationally recognized statistical rating organization," as such term is defined by the Commission for the purposes of Section 3(a)(62) of the Exchange Act.

4. Representations and Warranties of the Selling Stockholders. Each of the Selling Stockholders, severally and not jointly, represents and warrants to each Underwriter and the Company that:

(a) *Required Consents; Authority*. All consents, approvals, authorizations and orders necessary for the execution and delivery by such Selling Stockholder of this Agreement

hereinafter referred to, and for the sale and delivery of the Shares to be sold by such Selling Stockholder hereunder, have been obtained; and such Selling Stockholder has full right, power and authority to enter into this Agreement and to sell, assign, transfer and deliver the Shares to be sold by such Selling Stockholder hereunder; this Agreement has been duly authorized, executed and delivered by such Selling Stockholder.

(b) *No Conflicts*. The execution, delivery and performance by such Selling Stockholder of this Agreement, the sale of the Shares to be sold by such Selling Stockholder and the consummation by such Selling Stockholder of the transactions contemplated herein or therein will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of such Selling Stockholder pursuant to, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which such Selling Stockholder is a party or by which such Selling Stockholder is bound or to which any of the property or assets of such Selling Stockholder is subject, (ii) result in any violation of the provisions of the charter or by-laws or similar organizational documents of such Selling Stockholder, if such Selling Stockholder is an entity, or (iii) result in the violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory agency having jurisdiction over such Selling Stockholder and applicable to such Selling Stockholder, except, in the case of each of (i) and (iii), for any such conflict, breach, violation or default that would not impair in any material respect the ability of such Selling Stockholder to consummate the transactions contemplated by this Agreement.

(c) *Title to Shares*. Such Selling Stockholder has, and at the Closing Date or the Additional Closing Date, as the case may be, will have, valid title to, or a valid "security entitlement" within the meaning of Section 8-102 of the Uniform Commercial Code, as amended (the "UCC"), in respect of, the Shares to be sold by such Selling Stockholder hereunder at the Closing Date or the Additional Closing Date, as the case may be, free and clear of all liens, encumbrances, equities or claims; and, upon delivery of such Shares and payment therefor pursuant hereto, good and valid title to such Shares, free and clear of all liens, encumbrances, equities or adverse claims, will pass to the several Underwriters.

(d) *No Stabilization*. Such Selling Stockholder has not taken and will not take, directly or indirectly, any action designed to or that could reasonably be expected to cause or result in any stabilization or manipulation of the price of the Shares.

(e) *Pricing Disclosure Package*. The Pricing Disclosure Package, at the Applicable Time did not, and as of the Closing Date and as of the Additional Closing Date, as the case may be, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that such representations and warranties set forth in

this Section 4(e) apply only to statements or omissions made in reliance upon and in conformity with information relating to such Selling Stockholder furnished in writing by or on behalf of such Selling Stockholder expressly for use in the Pricing Disclosure Package, the Prospectus or any other Issuer Free Writing Prospectus or any amendment or supplement thereto; it being understood and agreed that such information furnished by a Selling Stockholder consists only of (A) the legal name, address and number of shares of Common Stock owned by such Selling Stockholder, (B) the other information (excluding percentages) with respect to such Selling Stockholder which appear in the table (and corresponding footnotes) under the caption "Principal and Selling Stockholders" and (C) if applicable, the other information with respect to such Selling Stockholder under the caption "Management," in each case, in the Pricing Disclosure Package, the Prospectus or any other Issuer Free Writing Prospectus or amendment or supplement thereto (the "Selling Stockholder Information").

(f) *Issuer Free Writing Prospectus and Written Testing-the-Waters Communication.* Other than the Registration Statement, the Preliminary Prospectus and the Prospectus, such Selling Stockholder (including its agents and representatives, other than the Underwriters in their capacity as such) has not prepared, used, authorized, approved or referred to and will not prepare, use, authorize, approve or refer to any Issuer Free Writing Prospectus or Written Testing-the-Waters Communication, other than (i) any document not constituting a prospectus pursuant to Section 2(a)(10)(a) of the Securities Act or Rule 134 under the Securities Act or (ii) the documents listed on Annex A or Annex B hereto, each electronic road show and any other written communications approved in writing in advance by the Company and the Representatives.

(g) *Registration Statement and Prospectus.* As of the applicable effective date of the Registration Statement and any post-effective amendment thereto, the Registration Statement and any such post-effective amendment did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading; and as of the date of the Prospectus and any amendment or supplement thereto and as of the Closing Date and as of the Additional Closing Date, as the case may be, the Prospectus will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that such representations and warranties set forth in this Section 4(g) apply only to statements or omissions made in reliance upon and in conformity with the Selling Stockholder Information.

(h) *Sanctions Laws.* Neither such Selling Stockholder nor, to the knowledge of such Selling Stockholder, any of its directors, officers or employees, or other person acting on behalf of such Selling Stockholder, is currently the subject or the target of any sanctions administered or enforced by the U.S. government (including, without limitation, OFAC or the U.S. Department of State or other relevant sanctions authority),

(i) *Organization and Good Standing.* Such Selling Stockholder has been duly organized and is validly existing and in good standing under the laws of its respective jurisdictions of organization, is duly qualified to do business and is in good standing in each jurisdiction in which its respective ownership or lease of property or the conduct of its respective businesses requires such qualification, and has all power and authority necessary to own or hold its respective properties and to conduct the businesses in which it is engaged, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a Material Adverse Effect with respect to such Selling Stockholder.

Each Selling Stockholder holds the Shares to be sold by such Selling Stockholder in book-entry form, and upon payment of the purchase price for the Shares to be sold by such Selling Stockholder pursuant to this Agreement, delivery of such Shares, as directed by the Underwriters, to Cede & Co. (“Cede”) or such other nominee as may be designated by DTC (unless delivery of such Shares is unnecessary because such Shares are already in possession of Cede or such nominee), registration of such Shares in the name of Cede or such other nominee (unless registration of such Shares is unnecessary because such Shares are already registered in the name of Cede or such nominee), and the crediting of such Shares on the books of DTC to accounts of the Underwriters (assuming that neither DTC nor any Underwriter has “notice of an adverse claim,” within the meaning of Section 8-105 of the UCC, with respect to such Shares), (A) DTC shall be a “protected purchaser” of such Shares within the meaning of Section 8-303 of the UCC and will acquire its interest in the Shares (including, without limitation, all rights that such Selling Stockholder had or has the power to transfer in such Shares) free and clear of any “adverse claim” within the meaning of Section 8-102 of the UCC, (B) under Section 8-501 of the UCC, the Underwriters will acquire a valid security entitlement in respect of such Shares and (C) no action based on any “adverse claim,” within the meaning of Section 8-102 of the UCC, to such Shares may be asserted against the Underwriters with respect to such security entitlement; *provided that*, for purposes of this representation, such Selling Stockholder may assume that when such payment, delivery (if necessary) and crediting occur, (x) such Shares will have been registered in the name of Cede or another nominee designated by DTC, in each case on the Company’s share registry in accordance with its certificate of incorporation, bylaws and applicable law, (y) DTC will be registered as a “clearing corporation,” within the meaning of Section 8-102 of the UCC and (z) appropriate entries to the accounts of the Underwriters on the records of DTC will have been made pursuant to the UCC.

5. Further Agreements of the Company. The Company covenants and agrees with each Underwriter that:

(a) *Required Filings.* The Company will file the final Prospectus with the Commission within the time periods specified by Rule 424(b) and Rule 430A, 430B or 430C under the Securities Act, will file any Issuer Free Writing Prospectus to the extent required by Rule 433 under the Securities Act; and will furnish copies of the Prospectus and each Issuer Free Writing Prospectus (to the extent not previously delivered) to the Underwriters in New York City prior to 10:00 A.M., New York City time, on the business day next succeeding the date of this Agreement in such quantities as the Representatives may reasonably request.

(b) *Delivery of Copies.* The Company will deliver, without charge, (i) to the Representatives, three signed copies of the Registration Statement as originally filed and each amendment thereto, in each case including all exhibits and consents filed therewith and documents incorporated by reference therein; and (ii) to each Underwriter (A) a conformed copy of the Registration Statement as originally filed and each amendment thereto (without exhibits) and (B) during the Prospectus Delivery Period (as defined below), as many copies of the Prospectus (including all amendments and supplements thereto and documents incorporated by reference therein and each Issuer Free Writing Prospectus) as the Representatives may reasonably request. As used herein, the term "Prospectus Delivery Period" means such period of time after the first date of the public offering of the Shares as in the opinion of counsel for the Underwriters a prospectus relating to the Shares is required by law to be delivered (or required to be delivered but for Rule 172 under the Securities Act) in connection with sales of the Shares by any Underwriter or dealer.

(c) *Amendments or Supplements, Issuer Free Writing Prospectuses.* Before preparing, using, authorizing, approving, referring to or filing any Issuer Free Writing Prospectus, and before filing any amendment or supplement to the Registration Statement or the Prospectus, the Company will furnish to the Representatives and counsel for the Underwriters a copy of the proposed Issuer Free Writing Prospectus, amendment or supplement for review and will not prepare, use, authorize, approve, refer to or file any such Issuer Free Writing Prospectus or file any such proposed amendment or supplement to which the Representatives reasonably object.

(d) *Notice to the Representatives.* The Company will advise the Representatives promptly, and confirm such advice in writing, (i) when the Registration Statement has become effective; (ii) when any amendment to the Registration Statement has been filed or becomes effective; (iii) when any supplement to the Prospectus, any Issuer Free Writing Prospectus, or any amendment to the Prospectus has been filed or distributed; (iv) of any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus or the receipt of any comments from the Commission relating to the Registration Statement or any other request by the Commission for any additional information; (v) of the issuance by the Commission of any order suspending the effectiveness of the Registration Statement or preventing or suspending the use of any Preliminary Prospectus, any of the Pricing Disclosure Package or the Prospectus or the initiation or threatening of any proceeding for that purpose or pursuant to Section 8A of the Securities Act; (vi) of the occurrence of any event or development within the Prospectus Delivery Period as a result of which the Prospectus, the Pricing Disclosure Package or any Issuer Free Writing Prospectus as then amended or supplemented would include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Prospectus, the Pricing Disclosure Package or any such Issuer Free Writing Prospectus is delivered to a purchaser, not misleading; and (vii) of the receipt by the Company of any notice with respect to any suspension of the qualification of the Shares for offer and sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; and the Company will use its best efforts to prevent the issuance of any such order suspending the effectiveness of the Registration Statement, preventing or suspending the use of any Preliminary Prospectus, any of the Pricing Disclosure Package or the Prospectus or suspending any such qualification of the Shares and, if any such order is issued, will obtain as soon as possible the withdrawal thereof.

(e) *Ongoing Compliance.* (1) If during the Prospectus Delivery Period (i) any event or development shall occur or condition shall exist as a result of which the Prospectus as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Prospectus is delivered to a purchaser, not misleading or (ii) it is necessary to amend or supplement the Prospectus to comply with law, the Company will immediately notify the Underwriters thereof and forthwith prepare and, subject to paragraph (c) above, file with the Commission and furnish to the Underwriters and to such dealers as the Representatives may designate such amendments or supplements to the Prospectus (or any document to be filed with the Commission and incorporated by reference therein) as may be necessary so that the statements in the Prospectus as so amended or supplemented (or any document to be filed with the Commission and incorporated by reference therein) will not, in the light of the circumstances existing when the Prospectus is delivered to a purchaser, be misleading or so that the Prospectus will comply with law and (2) if at any time prior to the Closing Date (i) any event or development shall occur or condition shall exist as a result of which the Pricing Disclosure Package as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Pricing Disclosure Package is delivered to a purchaser, not misleading or (ii) it is necessary to amend or supplement the Pricing Disclosure Package to comply with law, the Company will immediately notify the Underwriters thereof and forthwith prepare and, subject to paragraph (c) above, file with the Commission (to the extent required) and furnish to the Underwriters and to such dealers as the Representatives may designate such amendments or supplements to the Pricing Disclosure Package (or any document to be filed with the Commission and incorporated by reference therein) as may be necessary so that the statements in the Pricing Disclosure Package as so amended or supplemented will not, in the light of the circumstances existing when the Pricing Disclosure Package is delivered to a purchaser, be misleading or so that the Pricing Disclosure Package will comply with law.

(f) *Blue Sky Compliance.* The Company will qualify the Shares for offer and sale under the securities or Blue Sky laws of such jurisdictions as the Representatives shall reasonably request and will continue such qualifications in effect so long as required for distribution of the Shares; provided that the Company shall not be required to (i) qualify as a foreign corporation or other entity or as a dealer in securities in any such jurisdiction where it would not otherwise be required to so qualify, (ii) file any general consent to service of process in any such jurisdiction or (iii) subject itself to taxation in any such jurisdiction if it is not otherwise so subject.

(g) *Earning Statement.* The Company will make generally available to its security holders and the Representatives as soon as practicable an earnings statement that satisfies the provisions of Section 11(a) of the Securities Act and Rule 158 of the Commission promulgated thereunder covering a period of at least twelve months beginning with the first fiscal quarter of the Company occurring after the “effective date” (as defined in Rule 158) of the Registration Statement; provided that the Company will be deemed to have furnished such statements to its security holders and the Representatives to the extent they are filed on the Commission’s Electronic Data Gathering, Analysis and Retrieval system.

(h) *Clear Market.* For a period of 90 days after the date of the Prospectus, the Company will not (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or

otherwise transfer or dispose of, directly or indirectly, or file with the Commission a registration statement under the Securities Act relating to, any shares of Stock or any securities convertible into or exercisable or exchangeable for Stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Stock or any such other securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Stock or such other securities, in cash or otherwise, without the prior written consent of J. P. Morgan Securities LLC and Morgan Stanley & Co. LLC, other than (A) the Shares to be sold hereunder, (B) any shares of Stock of the Company issued upon the exercise of options granted under Company Stock Plans or warrants described as outstanding in the Registration Statement, the Pricing Disclosure Package and the Prospectus, (C) any options and other awards granted under a Company Stock Plan described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, (D) the filing by the Company of any registration statement on Form S-8 or a successor form thereto relating to a Company Stock Plan described in the Registration Statement, the Pricing Disclosure Package and the Prospectus and (E) shares of Stock or other securities issued in connection with a transaction with an unaffiliated third party that includes a bona fide commercial relationship (including joint ventures, marketing or distribution arrangements, collaboration agreements or intellectual property license agreements) or any acquisition of assets or acquisition of not less than a majority or controlling portion of the equity of another entity, provided that (x) the aggregate number of shares issued pursuant to this clause (E) shall not exceed five percent (5%) of the total number of outstanding shares of Stock immediately following the issuance and sale of the Underwritten Shares pursuant hereto and (y) the recipient of any such shares of Stock and securities issued pursuant to this clause (E) during the 90-day restricted period described above shall enter into an agreement substantially in the form of Exhibit A hereto.

(i) *Use of Proceeds.* The Company will apply the net proceeds from the sale of the Shares by the Company in all material respects as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus under the heading "Use of Proceeds".

(j) *No Stabilization.* The Company will not take, directly or indirectly, without giving effect to activities by the Underwriters, any action designed to or that would reasonably be expected to cause or result in any stabilization or manipulation of the price of the Stock.

(k) *Reports.* For the period of two years from the date of this Agreement, the Company will furnish to the Representatives, as soon as they are available, copies of all reports or other communications (financial or other) furnished to holders of the Shares, and copies of any reports and financial statements furnished to or filed with the Commission or any national securities exchange or automatic quotation system; provided the Company will be deemed to have furnished such reports and financial statements to the Representatives to the extent they are filed on the Commission's Electronic Data Gathering, Analysis, and Retrieval system.

(l) *Record Retention.* The Company will, pursuant to reasonable procedures developed in good faith, retain copies of each Issuer Free Writing Prospectus that is not filed with the Commission in accordance with Rule 433 under the Securities Act.

(m) *Filings.* The Company will file with the Commission such reports as may be required by Rule 463 under the Securities Act.

(n) *Emerging Growth Company.* The Company will promptly notify the Representatives if the Company ceases to be an Emerging Growth Company at any time prior to the later of (i) completion of the distribution of Shares within the meaning of the Securities Act and (ii) completion of the 90-day restricted period referred to in Section 5(h) hereof.

6. Further Agreements of the Selling Stockholders. Each of the Selling Stockholders, severally and not jointly, covenants and agrees with each Underwriter that:

(a) *Clear Market.* Such Selling Stockholder has duly executed and delivered to the Representatives a “lock-up” agreement in substantially the form of Exhibit A hereto.

(b) *No Stabilization.* Such Selling Stockholder will not take, directly or indirectly, any action designed to or that could reasonably be expected to cause or result in any stabilization or manipulation of the price of the Stock.

(c) *Tax Form.* Such Selling Stockholder will deliver to the Representatives prior to or at the Closing Date a properly completed and executed United States Treasury Department Form W-9 (or other applicable form or statement specified by the Treasury Department regulations in lieu thereof) in order to facilitate the Underwriters’ documentation of their compliance with the reporting and withholding provisions of the Tax Equity and Fiscal Responsibility Act of 1982 with respect to the transactions herein contemplated.

7. Certain Agreements of the Underwriters. Each Underwriter hereby represents and agrees that:

(a) It has not used, authorized use of, referred to or participated in the planning for use of, and will not use, authorize use of, refer to or participate in the planning for use of, any “free writing prospectus”, as defined in Rule 405 under the Securities Act (which term includes use of any written information furnished to the Commission by the Company and not incorporated by reference into the Registration Statement and any press release issued by the Company) other than (i) a free writing prospectus that contains no “issuer information” (as defined in Rule 433(h)(2) under the Securities Act) that was not included (including through incorporation by reference) in the Preliminary Prospectus or a previously filed Issuer Free Writing Prospectus, (ii) any Issuer Free Writing Prospectus listed on Annex A or prepared pursuant to Section 3(c) or Section 5(c) above (including any electronic road show), or (iii) any free writing prospectus prepared by such underwriter and approved by the Company in advance in writing (each such free writing prospectus referred to in clauses (i) or (iii), an “Underwriter Free Writing Prospectus”).

(b) It has not used, and will not, without the prior written consent of the Company, use, any free writing prospectus that contains the final terms of the Shares unless such terms have previously been included in a free writing prospectus filed with the Commission; *provided* that Underwriters may use a term sheet substantially in the form of Annex B hereto without the consent of the Company; *provided further* that any Underwriter using such term sheet shall notify the Company, and provide a copy of such term sheet to the Company, prior to the first use of such term sheet.

(c) It is not subject to any pending proceeding under Section 8A of the Securities Act with respect to the offering (and will promptly notify the Company and the Selling Stockholders if any such proceeding against it is initiated during the Prospectus Delivery Period).

8. Conditions of Underwriters’ Obligations. The obligation of each Underwriter to purchase the Underwritten Shares on the Closing Date or the Option Shares on the Additional Closing Date, as the

case may be, as provided herein is subject to the performance by the Company and each of the Selling Stockholders of their respective covenants and other obligations hereunder and to the following additional conditions:

(a) *Registration Compliance; No Stop Order.* No order suspending the effectiveness of the Registration Statement shall be in effect, and no proceeding for such purpose or pursuant to Section 8A under the Securities Act shall be pending before or threatened by the Commission; the Prospectus and each Issuer Free Writing Prospectus shall have been timely filed with the Commission under the Securities Act (in the case of an Issuer Free Writing Prospectus, to the extent required by Rule 433 under the Securities Act) and in accordance with Section 5(a) hereof; and all requests by the Commission for additional information shall have been complied with to the reasonable satisfaction of the Representatives.

(b) *Representations and Warranties.* The respective representations and warranties of the Company and the Selling Stockholders contained herein shall be true and correct on the date hereof and on and as of the Closing Date or the Additional Closing Date, as the case may be; and the statements of the Company and its officers and of each of the Selling Stockholders and their officers made in any certificates delivered pursuant to this Agreement shall be true and correct on and as of the Closing Date or the Additional Closing Date, as the case may be.

(c) *No Material Adverse Change.* No event or condition of a type described in Section 3(i) hereof shall have occurred or shall exist, which event or condition is not described in the Pricing Disclosure Package (excluding any amendment or supplement thereto) and the Prospectus (excluding any amendment or supplement thereto) and the effect of which in the judgment of the Representatives makes it impracticable or inadvisable to proceed with the offering, sale or delivery of the Shares on the Closing Date or the Additional Closing Date, as the case may be, on the terms and in the manner contemplated by this Agreement, the Pricing Disclosure Package and the Prospectus.

(d) *Officer's Certificate.* The Representatives shall have received on and as of the Closing Date or the Additional Closing Date, as the case may be, (x) a certificate of the chief financial officer or chief accounting officer of the Company and one additional senior executive officer of the Company who is satisfactory to the Representatives (1) confirming that such officers have carefully reviewed the Registration Statement, the Pricing Disclosure Package and the Prospectus and, to the knowledge of such officers, the representations of the Company set forth in Sections 3(b) and 3(f) hereof are true and correct, (2) confirming that the other representations and warranties of the Company in this Agreement are true and correct and that the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to the Closing Date or the Additional Closing Date, as the case may be, and (3) to the effect set forth in paragraphs (a) and (c) above and (y) a certificate of each of the Selling Stockholders, in form and substance reasonably satisfactory to the Representatives, (1) confirming that the representations of such Selling Stockholder set forth in Sections 4(e), 4(f) and 4(g) hereof are true and correct and (2) confirming that the other representations and warranties of such Selling Stockholder in this Agreement are true and correct and that such Selling Stockholder has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to such Closing Date.

(e) *Comfort Letters.* On the date of this Agreement and on the Closing Date or the Additional Closing Date, as the case may be, Ernst & Young LLP shall have furnished to the Representatives, at the request of the Company, letters, dated the respective dates of delivery thereof and addressed to the Underwriters, in form and substance reasonably satisfactory to the

Representatives, containing statements and information of the type customarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus; provided, that the letter delivered on the Closing Date or the Additional Closing Date, as the case may be, shall use a "cut-off" date no more than three business days prior to such Closing Date or such Additional Closing Date, as the case may be.

(f) *Opinion and 10b-5 Statement of Counsel for the Company.* Gibson, Dunn & Crutcher LLP, counsel for the Company, shall have furnished to the Representatives, at the request of the Company, their written opinion and 10b-5 statement, dated the Closing Date or the Additional Closing Date, as the case may be, and addressed to the Underwriters, in form and substance reasonably satisfactory to the Representatives.

(g) *Opinion of Intellectual Property Counsel for the Company.* Cooley, LLP, intellectual property counsel for the Company, shall have furnished to the Representatives, at the request of the Company, its written opinion, dated the Closing Date or the Additional Closing Date, as the case may be, and addressed to the Underwriters, in form and substance reasonably satisfactory to the Representatives.

(h) *Opinions of Counsel for the Selling Stockholders.* Ropes & Gray LLP, counsel for the Selling Stockholders, shall have furnished to the Representatives, at the request of the Selling Stockholders, their written opinion, dated the Closing Date or the Additional Closing Date, as the case may be, and addressed to the Underwriters, in form and substance reasonably satisfactory to the Representatives.

(i) *Opinion and 10b-5 Statement of Counsel for the Underwriters.* The Representatives shall have received on and as of the Closing Date or the Additional Closing Date, as the case may be, an opinion and 10b-5 statement of Latham & Watkins LLP, counsel for the Underwriters, with respect to such matters as the Representatives may reasonably request, and such counsel shall have received such documents and information as they may reasonably request to enable them to pass upon such matters.

(j) *No Legal Impediment to Issuance and/or Sale.* No action shall have been taken and no statute, rule, regulation or order shall have been enacted, adopted or issued by any federal, state or foreign governmental or regulatory authority that would, as of the Closing Date or the Additional Closing Date, as the case may be, prevent the issuance or sale of the Shares by the Company or the sale of the Shares by the Selling Stockholders; and no injunction or order of any federal, state or foreign court shall have been issued that would, as of the Closing Date or the Additional Closing Date, as the case may be, prevent the issuance or sale of the Shares by the Company or the sale of the Shares by the Selling Stockholders.

(k) *Good Standing.* The Representatives shall have received on and as of the Closing Date or the Additional Closing Date, as the case may be, satisfactory evidence of the good standing of the Company in its jurisdiction of organization and its good standing as a foreign entity in such other jurisdictions as the Representatives may reasonably request, in each case in writing or any standard form of telecommunication from the appropriate governmental authorities of such jurisdictions.

(l) *Exchange Listing*. The Shares to be delivered on the Closing Date or Additional Closing Date, as the case may be, shall have been approved for listing on The NASDAQ Global Select Market, subject to official notice of issuance.

(m) *Lock-up Agreements*. The “lock-up” agreements, each substantially in the form of Exhibit A hereto, between you and all of the officers and directors of the Company and each Selling Stockholder relating to sales and certain other dispositions of shares of Stock or certain other securities, delivered to you on or before the date hereof, shall be in full force and effect on the Closing Date or Additional Closing Date, as the case may be.

(n) *Additional Documents*. On or prior to the Closing Date or the Additional Closing Date, as the case may be, the Company and the Selling Stockholders shall have furnished to the Representatives such further certificates and documents as the Representatives may reasonably request.

All opinions, letters, certificates and evidence mentioned above or elsewhere in this Agreement shall be deemed to be in compliance with the provisions hereof only if they are in form and substance reasonably satisfactory to counsel for the Underwriters.

9. Indemnification and Contribution.

(a) *Indemnification of the Underwriters by the Company*. The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors and officers and each person, if any, who controls such Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, from and against any and all losses, claims, damages and liabilities (including, without limitation, legal fees and other expenses incurred in connection with any suit, action or proceeding or any claim asserted, as such fees and expenses are incurred), joint or several, that arise out of, or are based upon, (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or caused by any omission or alleged omission to state therein a material fact required to be stated therein or necessary in order to make the statements therein, not misleading, or (ii) any untrue statement or alleged untrue statement of a material fact contained in the Prospectus (or any amendment or supplement thereto), any Issuer Free Writing Prospectus, any “issuer information” filed or required to be filed pursuant to Rule 433(d) under the Securities Act, any road show as defined in Rule 433(h) under the Securities Act (a “road show”) or any Pricing Disclosure Package (including any Pricing Disclosure Package that has subsequently been amended), or caused by any omission or alleged omission to state therein a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading, in each case except insofar as such losses, claims, damages or liabilities arise out of, or are based upon, any untrue statement or omission or alleged untrue statement or omission made in reliance upon and in conformity with any information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use therein, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in subsection (c) below.

(b) *Indemnification of the Underwriters by the Selling Stockholders*. Each of the Selling Stockholders, severally and not jointly, in proportion to the number of Shares to be sold by such Selling Stockholder hereunder agrees to indemnify and hold harmless each Underwriter, its affiliates, directors and officers and each person, if any, who controls such Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act to the same extent as the indemnity set forth in paragraph (a) above, but only with respect to any losses, claims, damages or liabilities that arise out of, or are based upon, any untrue statement or omission or alleged untrue statement or omission made in the

Registration Statement, the Prospectus (or any amendment or supplement thereto), any Issuer Free Writing Prospectus or the Pricing Disclosure Package in reliance upon and in conformity with such Selling Stockholder's Selling Stockholder Information. Notwithstanding anything to the contrary in this Agreement, the aggregate liability of a Selling Stockholder under this Section 9(b) and Section 9(e) shall not exceed the aggregate net proceeds after deducting underwriting discounts and commissions received by such Selling Stockholder from the Underwriters for the Shares sold by such Selling Stockholder hereunder.

(c) *Indemnification of the Company and the Selling Stockholders.* Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, its directors, its officers who signed the Registration Statement, the Selling Stockholders, and each person, if any, who controls the Company or any Selling Stockholder within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act and each of the Selling Stockholders to the same extent as the indemnity set forth in paragraph (a) above, but only with respect to any losses, claims, damages or liabilities that arise out of, or are based upon, any untrue statement or omission or alleged untrue statement or omission made in reliance upon and in conformity with any information relating to such Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in the Registration Statement, the Prospectus (or any amendment or supplement thereto), any Issuer Free Writing Prospectus, any road show or any Pricing Disclosure Package (including any Pricing Disclosure Package that has subsequently been amended), it being understood and agreed upon that the only such information furnished by any Underwriter consists of the following information in the Registration Statement, the Prospectus (or any amendment or supplement thereto) or any Pricing Disclosure Package (including any Pricing Disclosure Package that has been subsequently amended) furnished on behalf of each Underwriter: the concession and reallowance figures appearing in the third paragraph under the caption "Underwriting" and the information contained in the twelfth and thirteenth paragraph (each relating to stabilization) under the caption "Underwriting".

(d) *Notice and Procedures.* If any suit, action, proceeding (including any governmental or regulatory investigation), claim or demand shall be brought or asserted against any person in respect of which indemnification may be sought pursuant to the preceding paragraphs of this Section 9, such person (the "Indemnified Person") shall promptly notify the person against whom such indemnification may be sought (the "Indemnifying Person") in writing; provided that the failure to notify the Indemnifying Person shall not relieve it from any liability that it may have under the preceding paragraphs of this Section 9 except to the extent that it has been materially prejudiced (through the forfeiture of substantive rights or defenses) by such failure; and provided further that the failure to notify the Indemnifying Person shall not relieve it from any liability that it may have to an Indemnified Person otherwise than under the preceding paragraphs of this Section 9. If any such proceeding shall be brought or asserted against an Indemnified Person and it shall have notified the Indemnifying Person thereof, the Indemnifying Person shall retain counsel reasonably satisfactory to the Indemnified Person (who shall not, without the consent of the Indemnified Person, be counsel to the Indemnifying Person) to represent the Indemnified Person in such proceeding and shall pay the fees and expenses of such counsel related to such proceeding, as incurred. In any such proceeding, any Indemnified Person shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such Indemnified Person unless (i) the Indemnifying Person and the Indemnified Person shall have mutually agreed to the contrary; (ii) the Indemnifying Person has failed within a reasonable time to retain counsel reasonably satisfactory to the Indemnified Person; (iii) the Indemnified Person shall have reasonably concluded that there may be legal defenses available to it that are different from or in addition to those available to the Indemnifying Person; or (iv) the named parties in any such proceeding (including any impleaded parties) include both the Indemnifying Person and the Indemnified Person and representation of both parties by the same counsel would be inappropriate due to actual or potential differing interest between them. It is understood

and agreed that the Indemnifying Person shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the fees and expenses of more than one separate firm (in addition to any local counsel) for all Indemnified Persons, and that all such fees and expenses shall be paid or reimbursed as they are incurred. Any such separate firm for any Underwriter, its affiliates, directors and officers and any control persons of such Underwriter shall be designated in writing by the Representatives and any such separate firm for the Company, its directors, its officers who signed the Registration Statement and any control persons of the Company shall be designated in writing by the Company and any such separate firm for the Selling Stockholders shall be designated in writing by the Selling Stockholders or any one of them. The Indemnifying Person shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the Indemnifying Person agrees to indemnify each Indemnified Person from and against any loss or liability by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an Indemnified Person shall have requested that an Indemnifying Person reimburse the Indemnified Person for fees and expenses of counsel as contemplated by this paragraph, the Indemnifying Person shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by the Indemnifying Person of such request and (ii) the Indemnifying Person shall not have reimbursed the Indemnified Person in accordance with such request prior to the date of such settlement. No Indemnifying Person shall, without the written consent of the Indemnified Person, effect any settlement of any pending or threatened proceeding in respect of which any Indemnified Person is or could have been a party and indemnification could have been sought hereunder by such Indemnified Person, unless such settlement (x) includes an unconditional release of such Indemnified Person, in form and substance reasonably satisfactory to such Indemnified Person, from all liability on claims that are the subject matter of such proceeding and (y) does not include any statement as to or any admission of fault, culpability or a failure to act by or on behalf of any Indemnified Person.

(e) *Contribution.* If the indemnification provided for in paragraphs (a), (b) and (c) above is unavailable to an Indemnified Person or insufficient in respect of any losses, claims, damages or liabilities referred to therein (other than as a result of the limitations imposed on indemnification described in such preceding paragraphs of this Section 9), then each Indemnifying Person under such paragraph, in lieu of indemnifying such Indemnified Person thereunder, shall contribute to the amount paid or payable by such Indemnified Person as a result of such losses, claims, damages or liabilities (i) in such proportion as is appropriate to reflect the relative benefits received by the Company and such Selling Stockholder, as applicable, on the one hand, and the Underwriters on the other, from the offering of the Shares or (ii) if the allocation provided by clause (i) is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) but also the relative fault of the Company and such Selling Stockholder, as applicable, on the one hand, and the Underwriters on the other, in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Company and such Selling Stockholder, as applicable, on the one hand, and the Underwriters on the other, shall be deemed to be in the same respective proportions as the net proceeds (before deducting expenses) received by the Company and such Selling Stockholder, as applicable, from the sale of the Shares and the total underwriting discounts and commissions received by the Underwriters in connection therewith, in each case as set forth in the table on the cover of the Prospectus, bear to the aggregate offering price of the Shares. The relative fault of the Company and such Selling Stockholder, as applicable, on the one hand, and the Underwriters on the other, shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company and such Selling Stockholder, as applicable, or by the Underwriters and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

(f) *Limitation on Liability.* The Company, the Selling Stockholders and the Underwriters agree that it would not be just and equitable if contribution pursuant to paragraph (e) above were determined by pro rata allocation (even if the Selling Stockholders or the Underwriters were treated as one entity for such purpose) or by any other method of allocation that does not take account of the equitable considerations referred to in paragraph (e) above. The amount paid or payable by an Indemnified Person as a result of the losses, claims, damages and liabilities referred to in paragraph (e) above shall be deemed to include, subject to the limitations set forth above, any legal or other expenses incurred by such Indemnified Person in connection with any such action or claim. Notwithstanding the provisions of paragraphs (e) and (f), in no event shall an Underwriter be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the Shares exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations to contribute pursuant to paragraphs (e) and (f) are several in proportion to their respective purchase obligations hereunder and not joint.

(g) *Non-Exclusive Remedies.* The remedies provided for in this Section 9 are not exclusive and shall not limit any rights or remedies which may otherwise be available to any Indemnified Person at law or in equity.

10. Effectiveness of Agreement. This Agreement shall become effective upon the execution and delivery hereof by the parties hereto.

11. Termination. This Agreement may be terminated in the absolute discretion of the Representatives, by notice to the Company and the Selling Stockholders, if after the execution and delivery of this Agreement and prior to the Closing Date or, in the case of the Option Shares, prior to the Additional Closing Date (i) trading generally shall have been suspended or materially limited on or by any of the New York Stock Exchange, the American Stock Exchange, The NASDAQ Stock Market, the Chicago Board Options Exchange, the Chicago Mercantile Exchange or the Chicago Board of Trade; (ii) trading of any securities issued or guaranteed by the Company shall have been suspended on any exchange or in any over-the-counter market; (iii) a general moratorium on commercial banking activities shall have been declared by federal or New York State authorities; (iv) there shall have occurred any major disruption of settlements of securities, payment, or clearance services in the United States or any other country where such securities are listed; or (v) there shall have occurred any outbreak or escalation of hostilities or declaration by the United States of a national emergency or war or any change in financial markets or any calamity or crisis, either within or outside the United States, that, in the judgment of the Representatives, is material and adverse and makes it impracticable or inadvisable to proceed with the offering, sale or delivery of the Shares on the Closing Date or the Additional Closing Date, as the case may be, on the terms and in the manner contemplated by this Agreement, the Pricing Disclosure Package and the Prospectus.

12. Defaulting Underwriter.

(a) If, on the Closing Date or the Additional Closing Date, as the case may be, any Underwriter defaults on its obligation to purchase the Shares that it has agreed to purchase hereunder on such date, the non-defaulting Underwriters may in their discretion arrange for the purchase of such Shares by other persons satisfactory to the Company and the Selling Stockholders on the terms contained in this Agreement. If, within 36 hours after any such default by any Underwriter, the non-defaulting Underwriters do not arrange for the purchase of such Shares, then the Company and the Selling Stockholders shall be entitled to a further period of 36 hours within which to procure other persons

satisfactory to the non-defaulting Underwriters to purchase such Shares on such terms. If other persons become obligated or agree to purchase the Shares of a defaulting Underwriter, either the non-defaulting Underwriters or the Company and the Selling Stockholders may postpone the Closing Date or the Additional Closing Date, as the case may be, for up to five full business days in order to effect any changes that in the opinion of counsel for the Company, counsel for the Selling Stockholders or counsel for the Underwriters may be necessary in the Registration Statement and the Prospectus or in any other document or arrangement, and the Company agrees to promptly prepare any amendment or supplement to the Registration Statement and the Prospectus that effects any such changes. As used in this Agreement, the term "Underwriter" includes, for all purposes of this Agreement unless the context otherwise requires, any person not listed in Schedule 1 hereto that, pursuant to this Section 12, purchases Shares that a defaulting Underwriter agreed but failed to purchase.

(b) If, after giving effect to any arrangements for the purchase of the Shares of a defaulting Underwriter or Underwriters by the non-defaulting Underwriters, the Company and the Selling Stockholders as provided in paragraph (a) above, the aggregate number of Shares that remain unpurchased on the Closing Date or the Additional Closing Date, as the case may be, does not exceed one-eleventh of the aggregate number of Shares to be purchased on such date, then the Company and the Selling Stockholders shall have the right to require each non-defaulting Underwriter to purchase the number of Shares that such Underwriter agreed to purchase hereunder on such date plus such Underwriter's pro rata share (based on the number of Shares that such Underwriter agreed to purchase on such date) of the Shares of such defaulting Underwriter or Underwriters for which such arrangements have not been made.

(c) If, after giving effect to any arrangements for the purchase of the Shares of a defaulting Underwriter or Underwriters by the non-defaulting Underwriters, the Company and the Selling Stockholders as provided in paragraph (a) above, the aggregate number of Shares that remain unpurchased on the Closing Date or the Additional Closing Date, as the case may be, exceeds one-eleventh of the aggregate amount of Shares to be purchased on such date, or if the Company and the Selling Stockholders shall not exercise the right described in paragraph (b) above, then this Agreement or, with respect to any Additional Closing Date, the obligation of the Underwriters to purchase Shares on the Additional Closing Date, shall terminate without liability on the part of the non-defaulting Underwriters. Any termination of this Agreement pursuant to this Section 12 shall be without liability on the part of the Company, except that the Company will continue to be liable for the payment of expenses as set forth in Section 13 hereof and except that the provisions of Section 9 hereof shall not terminate and shall remain in effect.

(d) Nothing contained herein shall relieve a defaulting Underwriter of any liability it may have to the Company, the Selling Stockholders or any non-defaulting Underwriter for damages caused by its default.

13. Payment of Expenses.

(a) Whether or not the transactions contemplated by this Agreement are consummated or this Agreement is terminated, the Company will pay or cause to be paid all costs and expenses incident to the performance of its obligations hereunder, including without limitation, (i) the costs incident to the authorization, issuance, sale, preparation and delivery of the Shares and any taxes payable in that connection; (ii) the costs incident to the preparation, printing and filing under the Securities Act of the Registration Statement, the Preliminary Prospectus, any Issuer Free Writing Prospectus, any Pricing Disclosure Package and the Prospectus (including all exhibits, amendments and supplements thereto) and the distribution thereof; (iii) the fees and expenses of the Company's counsel and independent accountants; (iv) the fees and expenses incurred in connection with the registration or qualification and determination of

eligibility for investment of the Shares under the state or foreign securities or blue sky laws of such jurisdictions as the Representatives may designate and the preparation, printing and distribution of a Blue Sky Memorandum and any “Canadian Wrapper” (including the related fees and expenses of counsel for the Underwriters in an amount not to exceed \$7,500); (v) the costs and charges of any transfer agent and any registrar; (vi) all expenses and application fees incurred in connection with any filing with, and clearance of the offering by, FINRA (including the related fees and expenses of counsel for the Underwriters in an amount not to exceed \$25,000); (vii) all expenses incurred by the Company in connection with any “road show” presentation to potential investors, it being understood and agreed that except as provided in this Section 13 or Section 9 hereof, the Underwriters will pay all of the travel, lodging and other expenses of the Underwriters or any of their employees incurred by them in connection with the “road show” (provided that the Underwriters and the Company shall each pay 50% of the cost of any aircraft or other transportation chartered in connection with the “road show”); (viii) all expenses and application fees related to the listing of the Shares on The NASDAQ Global Select Market; and (ix) the reasonable fees and expenses of one counsel for the Selling Stockholders in an amount not to exceed \$20,000.

(b) If (i) this Agreement is terminated pursuant to Section 11, (ii) the Company or the Selling Stockholders for any reason fail to tender the Shares for delivery to the Underwriters (other than by reason of a default by any Underwriters) or (iii) the Underwriters decline to purchase the Shares for any reason permitted under this Agreement, the Company (or, in the case of subclause (ii) above, the Selling Stockholders if the Selling Stockholders for any reason fail to tender their Shares) agrees to reimburse the Underwriters for all out-of-pocket costs and expenses (including the fees and expenses of their counsel) reasonably incurred by the Underwriters in connection with this Agreement and the offering contemplated hereby. For the avoidance of doubt, it is understood that the Company shall not pay or reimburse any costs, fees or expenses incurred by an Underwriter that defaults on its obligations to purchase the Shares.

14. Persons Entitled to Benefit of Agreement. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and the officers and directors and any controlling persons referred to in Section 9 hereof. Nothing in this Agreement is intended or shall be construed to give any other person any legal or equitable right, remedy or claim under or in respect of this Agreement or any provision contained herein. No purchaser of Shares from any Underwriter shall be deemed to be a successor merely by reason of such purchase.

15. Survival. The respective indemnities, rights of contribution, representations, warranties and agreements of the Company, the Selling Stockholders and the Underwriters contained in this Agreement or made by or on behalf of the Company, the Selling Stockholders or the Underwriters pursuant to this Agreement or any certificate delivered pursuant hereto shall survive the delivery of and payment for the Shares and shall remain in full force and effect, regardless of any termination of this Agreement or any investigation made by or on behalf of the Company, the Selling Stockholders or the Underwriters.

16. Certain Defined Terms. For purposes of this Agreement, (a) except where otherwise expressly provided, the term “affiliate” has the meaning set forth in Rule 405 under the Securities Act; and (b) the term “business day” means any day other than a day on which banks are permitted or required to be closed in New York City.

17. Miscellaneous.

(a) *Authority of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC.* Any action by the Underwriters hereunder may be taken by J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC on behalf of the Underwriters, and any such action taken by J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC shall be binding upon the Underwriters.

(b) *Notices.* All notices and other communications hereunder shall be in writing and shall be deemed to have been duly given if mailed or transmitted and confirmed by any standard form of telecommunication. Notices to the Underwriters shall be given to the Representatives c/o J. P. Morgan Securities LLC, 383 Madison Avenue, New York, New York 10179 (fax: (212) 622-8358); Attention Equity Syndicate Desk and c/o Morgan Stanley & Co. LLC, 1585 Broadway, New York, New York 10036; Attention Equity Syndicate Desk, with a copy to the Legal Department; with copy (which copy shall not constitute notice) to Latham & Watkins LLP, 140 Scott Drive, Menlo Park, California 94025 Attention: B. Shayne Kennedy and Brian J. Cuneo. Notices to the Company shall be given to it at Ultragenyx Pharmaceutical Inc., 60 Leveroni Court, Novato, California 94949, (fax: (415) 483-8810); Attention: Chief Financial Officer and Senior Corporate Counsel; with copy (which copy shall not constitute notice) to Gibson Dunn & Crutcher LLP, 555 Mission Street, Suite 3000, San Francisco, California 94105 (fax: (415) 374-8430); Attention: Ryan A. Murr. Notices to the Selling Stockholders shall be given to the those addresses set forth on Schedule 2; with copy (which copy shall not constitute notice) to Ropes & Gray LLP, Three Embarcadero Center, San Francisco, California 94111 (fax: (415) 315-6350).

(c) *Governing Law.* This Agreement and any claim, controversy or dispute arising under or related to this Agreement shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed in such state.

(d) *Counterparts.* This Agreement may be signed in counterparts (which may include counterparts delivered by any standard form of telecommunication), each of which shall be an original and all of which together shall constitute one and the same instrument.

(e) *Amendments or Waivers.* No amendment or waiver of any provision of this Agreement, nor any consent or approval to any departure therefrom, shall in any event be effective unless the same shall be in writing and signed by the parties hereto.

(f) *Headings.* The headings herein are included for convenience of reference only and are not intended to be part of, or to affect the meaning or interpretation of, this Agreement.

If the foregoing is in accordance with your understanding, please indicate your acceptance of this Agreement by signing in the space provided below.

Very truly yours,

ULTRAGENYX PHARMACEUTICAL INC.

By: _____
Name:
Title:

SELLING STOCKHOLDERS

By: _____
Name:
Title:

By: _____
Name:
Title:

Accepted: _____, 2014

J. P. MORGAN SECURITIES LLC
MORGAN STANLEY & CO. LLC

For themselves and on behalf of the several Underwriters listed
in Schedule 1 hereto.

J. P. MORGAN SECURITIES LLC

By: _____
Authorized Signatory

MORGAN STANLEY & CO. LLC

By: _____
Authorized Signatory

Underwriter

Number of Shares

J. P. Morgan Securities LLC

Morgan Stanley & Co. LLC

Cowen and Company, LLC

Robert W. Baird & Co. Incorporated

Total

Number of
Underwritten Shares:

Number of
Option Shares:

Selling Stockholders:

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Total:

a. **Pricing Disclosure Package**

Issuer Free Writing Prospectus Consisting of a Television Broadcast of an Interview with the Issuer's Chief Executive Officer on CNBC's Fast Money Program on June 26, 2014 (Not filed with the Commission in accordance with Rule 433 under the Securities Act)

b. **Pricing Information Provided Orally by Underwriters**

Price: \$[—] per Share

Number of Shares offered by Company: (plus Option Shares)

Number of Shares offered by Selling Stockholders: (plus Option Shares)

Underwriting discounts and commissions: \$[—] per Share

Annex A

Ultragenyx Pharmaceutical Inc.

Pricing Term Sheet**Ultragenyx Pharmaceutical Inc.
[—] Common Shares**

Issuer:	Ultragenyx Pharmaceutical Inc.
Symbol:	RARE
Size (without option exercise):	\$
Total Firm Shares Offered by Issuer:	common shares
Total Firm Shares Offered by Selling Stockholders:	common shares
Option Shares Offered by Issuer	common shares
Option Shares Offered by Selling Stockholders:	common shares
Price to Public:	\$
Trade Date:	July [—], 2014
Closing Date:	July [—], 2014
CUSIP No:	90400D108
Underwriters:	J.P. Morgan Securities LLC Morgan Stanley & Co. LLC Cowen and Company, LLC Robert W. Baird & Co. Incorporated

The issuer has filed a registration statement (including a preliminary prospectus) with the Securities and Exchange Commission (the "SEC") for the offering to which this communication relates, which was declared effective by the SEC on July [—], 2014. Before you invest, you should read the preliminary prospectus in that registration statement for more complete information about the issuer and this offering. You may get these documents for free by visiting EDGAR on the SEC web site at www.sec.gov. Alternatively, you may request a copy of the preliminary prospectus from J.P. Morgan Securities LLC, Attention: Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, New York 11717, or by telephone at (866) 803-9204, or from Morgan Stanley & Co. LLC, Attention: Prospectus Department, 180 Varick Street, 2nd Floor, New York, New York 10014, by email at prospectus@morganstanley.com or by toll-free call to (866) 718-1649.

Annex B

1

This communication shall not constitute an offer to sell or the solicitation of any offer to buy, nor shall there be any sale of the securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities law of any such jurisdiction.

Annex B

2

LOCK-UP AGREEMENT

, 2014

J. P. MORGAN SECURITIES LLC
MORGAN STANLEY & CO. LLC
As Representatives of
the several Underwriters listed in
Schedule 1 to the Underwriting
Agreement referred to below

c/o J. P. Morgan Securities LLC
383 Madison Avenue
New York, NY 10179

c/o Morgan Stanley & Co. LLC
1585 Broadway
New York, NY 10036

Re: Ultragenyx Pharmaceutical Inc. — Public Offering

Ladies and Gentlemen:

The undersigned understands that you, as Representatives of the several Underwriters, propose to enter into an Underwriting Agreement (the “Underwriting Agreement”) with Ultragenyx Pharmaceutical Inc., a Delaware corporation (the “Company”), and the Selling Stockholders listed in Schedule 2 to the Underwriting Agreement, providing for the public offering (the “Public Offering”) by the several Underwriters named in Schedule 1 to the Underwriting Agreement (the “Underwriters”), of common stock, of the Company (the “Securities”). Capitalized terms used herein and not otherwise defined shall have the meanings set forth in the Underwriting Agreement.

In consideration of the Underwriters’ agreement to purchase and make the Public Offering of the Securities, and for other good and valuable consideration receipt of which is hereby acknowledged, the undersigned hereby agrees that, without the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC on behalf of the Underwriters, the undersigned will not, during the period commencing on the date hereof and ending 90 days after the date of the final prospectus (the “Prospectus”) relating to the Public Offering (the “Restricted Period”), (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock, \$0.001 par value per share, of the Company (the “Common Stock”) or any securities convertible into or exercisable or exchangeable for Common Stock (including without limitation, Common Stock or such other securities which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission and securities which may be issued upon exercise of a stock option or warrant), or publicly disclose the intention to make any offer, sale, pledge, loan or disposition, (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Common Stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled

by delivery of Common Stock or such other securities, in cash or otherwise or (3) make any demand for or exercise any right with respect to the registration of any shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock, in each case other than: (A) transfers or dispositions of shares of Common Stock (i) as a bona fide gift or gifts; (ii) to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned; (iii) to any corporation, partnership, limited liability company, investment fund or other entity controlled or managed, or under common control or management by the undersigned or the immediate family of the undersigned; (iv) by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the undersigned; or (v) as distributions to partners, members or stockholders of the undersigned; provided that in the case of any transfer or distribution pursuant to clause (A)(i) through (v), each donee or distributee shall execute and deliver to the Representatives a lock-up letter in the form of this paragraph; and provided, further, that in the case of any transfer or distribution pursuant to clause (A)(i) through (v), no filing by any party (donor, donee, transferor or transferee) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or other public announcement shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5), (B) sales or transfers of Common Stock made pursuant to a trading plan pursuant to Rule 10b5-1 under the Exchange Act ("Rule 10b5-1") that has been entered into by the undersigned prior to the date of this letter agreement, provided, that to the extent a public announcement or filing under the Exchange Act, if any, is required or voluntarily made by or on behalf of the undersigned or the Company regarding any such sales or transfers, such announcement or filing shall include a statement to the effect that the sale or transfer was made pursuant to a trading plan pursuant to Rule 10b5-1, (C) the establishment of a trading plan pursuant to Rule 10b5-1 for the transfer of shares of Common Stock, provided that (i) such plan does not provide for the transfer of Common Stock during the Restricted Period and (ii) no filing under the Exchange Act or other public announcements shall be required or voluntarily made by or on behalf of the undersigned or the Company regarding the establishment of such plan during the Restricted Period, (D) the exercise of options to purchase shares of Common Stock granted under any stock incentive plan or stock purchase plan of the Company, provided that the underlying shares shall continue to be subject to the restrictions on transfer set forth in this agreement and provided further that no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Restricted Period (other than a filing on a Form 5), (E) the exercise (whether for cash, cashless, or net exercise) of warrants to purchase shares of Common Stock (or any security convertible into or exercisable or exchangeable for Common Stock), provided that the underlying shares shall continue to be subject to the restrictions on transfer set forth in this agreement and provided further that no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Restricted Period (other than a filing on a Form 5), (F) the transfer of shares of Common Stock (or any security convertible into Common Stock) to the Company or sold in connection with a vesting event of the Company's securities or upon the exercise of options to purchase the Company's securities, on a "cashless" or "net exercise" basis or to cover tax withholding obligations of the undersigned in connection with such vesting or exercise provided that no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Restricted Period (other than a filing on a Form 5), (G) the transfer or disposition of the undersigned's shares of Common Stock (or any security convertible into or exercisable or exchangeable for Common Stock) that occurs by operation of law, such as pursuant to a qualified domestic order or in connection with a divorce settlement provided that each transferee shall sign and deliver a lock-up letter substantially in the form of this letter, (H) the transfer of shares of Common Stock (or any security convertible into or exercisable or exchangeable for Common Stock) pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of the Common Stock involving a change of control of the Company provided that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the Common Stock owned by the undersigned shall remain subject to the restrictions contained in this agreement, (I) the transfer or disposal of shares of Common Stock acquired on the open market following the Public Offering (including shares purchased in the Public Offering) provided that no filing under

Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Restricted Period (other than a filing on a Form 5), or (J) any Securities to be sold by the undersigned pursuant to the Underwriting Agreement. For purposes of this agreement, "immediate family" shall mean any relationship by blood, marriage or adoption, not more remote than first cousin and "change of control" shall mean the consummation of any bona fide third party tender offer, merger, consolidation or other similar transaction the result of which is that any "person" (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, other than the Company, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of 50% of total voting power of the voting stock of the Company.

In the event that any director, officer or holder of more than 1% of the Company's outstanding shares of Common Stock (determined by including any security convertible into or exercisable or exchangeable for Common Stock and calculated as of the close of business on the date set forth on the final prospectus used to sell the Securities) (each, a "Holder") other than the undersigned is permitted by the Representatives to sell or otherwise transfer or dispose of shares of Common Stock for value, the same percentage of shares of Common Stock held by the undersigned (i.e., the total number of shares of Common Stock owned by the undersigned on the date of the early release, multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock of the Company initially being granted an early release and the denominator of which shall be the total number of shares of Common Stock of the Company owned by the record or beneficial owner of initially being granted an early release on the date thereof) (the "Pro-rata Release") shall be immediately and fully released, without any further action, on the same terms from any remaining lockup restrictions set forth herein; provided, however, that such Pro-rata Release shall not be applied in the event of (a) permission granted, in the aggregate, to directors, officers or holders of more than 1% of the Company's outstanding shares of Common Stock by the Representatives to sell or otherwise transfer or dispose of shares of Common Stock for an amount less than or equal to a fair market value of \$1,000,000 in the aggregate (whether in one or multiple releases) of the Company's outstanding shares of Common Stock outstanding, or (b) any underwritten public offering, whether or not such offering or sale is wholly or partially a secondary offering of the Company's Common Stock during the Restricted Period (the "Underwritten Sale"); provided, however, that the undersigned, to the extent the undersigned has a contractual right to demand or require the registration of the undersigned's Common Stock or otherwise "piggyback" on a registration statement filed by the Company for the offer and sale of its Common Stock, is offered the opportunity to participate on a basis consistent with such contractual rights in such Underwritten Sale and on pricing terms that are no less favorable than the terms of the Underwritten Sale, and provided, further, that in the event the Underwriters make the determination to cut back the number of securities to be sold by stockholders in the Underwritten Sale, such cut back shall be on a basis consistent with such contractual rights (a "Follow-on Offering"). In the event that any percentage of such Common Stock permitted to be sold or otherwise transferred or disposed for value are subject to any restrictions of the type set forth in clauses (A) through (J) of the second paragraph of this agreement, the same provisos shall be applicable to the release of the same percentage of the Common Stock held by the undersigned.

In the event that the undersigned is released from any of its obligations under this agreement or, by virtue of this agreement, becomes entitled to offer, pledge, sell, contract to sell, or otherwise dispose of any Common Stock (or any securities convertible into Common Stock) prior to the date that is 90 days after the date of the Prospectus, the Representatives shall provide at least two business days' notice to the Chief Financial Officer of the Company prior to the effective date of such release or waiver (the effective date of such release or waiver, the "Release Date"), stating the percentage of shares held by such person or entity to be released; provided that the failure of the Representatives to give such notice shall not give rise to any claim or liability against the Representatives other than with respect to a failure caused by the Representatives acting in bad faith, and the Company shall use commercially reasonable efforts to, within two business days thereafter, send notice to the undersigned stating the same percentage of shares of

Common Stock held by the undersigned shall be released from the restrictions set forth herein on the Release Date; provided that the failure of the Company to give such notice shall not give rise to any claim or liability against the Company other than with respect to a failure caused by the Company acting in bad faith.

In furtherance of the foregoing, the Company, and any duly appointed transfer agent for the registration or transfer of the securities described herein, are hereby authorized to decline to make any transfer of securities if such transfer would constitute a violation or breach of this Letter Agreement.

The undersigned understands that, if (i) either J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, on the one hand, or the Company, on the other hand, informs the other, prior to the execution of the Underwriting Agreement, that it has determined not to proceed with the Public Offering; (ii) the Underwriting Agreement does not become effective by August 31, 2014; (iii) the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Common Stock to be sold thereunder; or (iv) the registration statement filed with the Securities and Exchange Commission in connection with the Public Offering is withdrawn, the undersigned shall be released from all obligations under this agreement. The undersigned understands that the Company and the Underwriters are relying upon this agreement in proceeding toward consummation of the Public Offering.

Whether or not the Public Offering actually occurs depends on a number of factors, including market conditions. Any Public Offering will only be made pursuant to an Underwriting Agreement, the terms of which are subject to negotiation between the Company and the Underwriters. This Letter Agreement and any claim, controversy or dispute arising under or related to this Letter Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to the conflict of laws principles thereof.

[Signature Page Follows]

Very truly yours,

[NAME OF STOCKHOLDER]

By: _____
Name:
Title:

If not signing in an individual capacity:

Name of Authorized Signatory (*Print*)

Title of Authorized Signatory (*Print*)

*(indicate capacity of person signing if signing as custodian,
trustee, or on behalf of an entity)*

Exhibit A

[LETTERHEAD OF GIBSON, DUNN & CRUTCHER LLP]

July 7, 2014

Ultragenyx Pharmaceutical Inc.
60 Leveroni Court
Novato, California 94949

Ladies and Gentlemen:

We have acted as counsel to Ultragenyx Pharmaceutical Inc., a Delaware corporation (the "Company") in connection with the Registration Statement on Form S-1 (File No. 333-197008) (as amended through the date hereof, the "Registration Statement") filed by the Company with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), for the registration by the Company (the "Primary Shares") and the selling stockholders identified in the Registration Statement (the "Secondary Shares" and, together with the Primary Shares, the "Securities") of up to an aggregate of 2,319,951 shares (including shares that may be sold by the Company and the selling stockholders upon the exercise of the underwriters' option to purchase additional shares) of the common stock, \$0.001 par value per share, of the Company.

In connection with this opinion letter, we have examined such certificates, documents and records and have made such investigation of fact and such examination of law as we have deemed appropriate in order to enable us to render the opinions set forth herein. In conducting such investigation, we have relied, without independent verification, upon certificates of officers of the Company, public officials and other appropriate persons.

The opinions expressed below are limited to the Delaware General Corporation Law.

Based upon and subject to the foregoing, we are of the opinion that the Securities have been duly authorized and that the Primary Shares will be, when issued and delivered pursuant to the Underwriting Agreement and against payment of the consideration set forth therein, and the Secondary Shares are, validly issued, fully paid and non-assessable.

We hereby consent to your filing this opinion as an exhibit to the Registration Statement and to the use of our name therein and in the related prospectus under the caption "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Gibson, Dunn & Crutcher LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in this Amendment No. 1 to the Registration Statement (Form S-1 No. 333-197008) and related Prospectus of Ultragenyx Pharmaceutical Inc. for the registration of shares of its common stock and to the incorporation by reference therein of our report dated March 24, 2014 with respect to the financial statements of Ultragenyx Pharmaceutical Inc. for each of the three years in the period ended December 31, 2013, and for the period from April 22, 2010 (inception) to December 31, 2013, included in the Annual Report (Form 10-K) for the year ended December 31, 2013 filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Redwood City, California
July 7, 2014