Ultragenyx Pharmaceutical Inc.
Form 424B5
January 23, 2018
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Filed Pursuant to Rule 424(b)(5)
Registration No. 333-201838

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are 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 January 23, 2018

Prospectus Supplement

(To Prospectus dated February 3, 2015)

$175,000,000

Common Stock

We are offering $175,000,000 of shares of our common stock.

Our common stock trades on The NASDAQ Global Select Market under the symbol RARE. On January 19, 2018, the last reported sale price for our common stock on The NASDAQ Global Select Market was $49.16 per share.

Investing in our common stock involves a high degree of risk. See Risk Factors beginning on page S-6 of this prospectus supplement and page 4 of the accompanying prospectus, as well as the section captioned Risk Factors in our most recently filed quarterly report on Form 10-Q and any subsequent periodic report we file with the SEC, which are incorporated by reference in this prospectus supplement.

	Per share	Total
Public offering price	$	$
Underwriting discounts and commissions[(1)]	$	$
Proceeds to Ultragenyx Pharmaceutical Inc., before expenses	$	$

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

We have granted the underwriters an option for a period of 30 days to purchase up to $26,250,000 of additional shares of our common stock.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon 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 January , 2018.

J.P. Morgan **BofA Merrill Lynch** **Goldman Sachs & Co. LLC** **Cowen**

The date of this prospectus supplement is January , 2018

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This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering. The second part, the accompanying prospectus, gives more general information, some of which may not apply to this offering. In the event that the description of this offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information contained in this prospectus supplement. Generally, when we refer to the prospectus, we are referring to this prospectus supplement and the accompanying prospectus together.

We have not authorized anyone to provide you with information other than that contained in this prospectus supplement, the accompanying prospectus or in any free writing prospectus prepared by or on behalf of us or to which

we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give to you. We 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 supplement is accurate only as of the date of this prospectus supplement, regardless of the time of delivery of this prospectus supplement or any sale of our common stock. Our business, financial condition, results of operations, and prospects may have changed since that date.

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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 supplement and the accompanying prospectus in that jurisdiction. Persons who come into possession of this prospectus supplement and the accompanying 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 supplement and the accompanying prospectus applicable to that jurisdiction.

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PROSPECTUS SUPPLEMENT SUMMARY

The items in the following summary are described in more detail later in this prospectus supplement and the accompanying 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 supplement and the accompanying prospectus carefully, including the information in our filings with the Securities and Exchange Commission, or SEC, incorporated by reference herein, before deciding to invest in our common stock. Investors should carefully consider the information set forth under Risk Factors beginning on page S-6 of this prospectus supplement and page 4 of the accompanying prospectus and those identified in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q. In this prospectus supplement, unless the context otherwise requires, references to the Company, we, us, our, or Ultragenyx refer to Ultragenyx Pharmaceutical Inc. and its consolidated subsidiaries.

Overview

We are a biopharmaceutical company focused on the identification, acquisition, development, and commercialization of novel products for the treatment of serious rare and ultra-rare diseases, with a focus on serious, debilitating genetic diseases. We target diseases for which the unmet medical need is high, the biology for treatment is clear, and for which there are no currently approved therapies. Since our inception in 2010, we have in-licensed potential treatments for multiple rare genetic disorders. 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 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 website address is *www.ultragenyx.com*. The information on, or that can be accessed through, our website is not part of this prospectus supplement. We have included our website address as an inactive textual reference only.

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THE OFFERING

Common stock offered by us	shares
Underwriters option to purchase additional shares	We have granted the underwriters a 30-day option to purchase up to an additional shares of our common stock.
Common stock to be outstanding after this offering	shares (shares if the underwriters exercise their option to purchase additional shares in full)
Use of proceeds	We estimate that the net proceeds to us from this offering will be approximately $164.5 million, or approximately $189.2 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 at the assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018. We intend to use the net proceeds of the offering to fund the potential commercialization of Mepsevii and burosumab in multiple territories, development of clinical-stage assets such as UX007 for Glut1 DS and LC-FAOD, and gene therapies for OTC and GSD1a, as well as advancement of our early-stage translational research programs. We may also use a portion of the net proceeds 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. Finally, we may use any remaining proceeds for working capital and other general corporate purposes.
Risk factors	You should read the Risk Factors section of this prospectus and our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q, 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

The number of shares of common stock to be outstanding after this offering is based on 42,488,312 shares of common stock outstanding as of September 30, 2017.

The number of shares of our common stock to be outstanding after this offering excludes the following:

4,834,159 shares of common stock issuable upon the exercise of outstanding stock options as of September 30, 2017 having a weighted-average exercise price of $65.95 per share;

756,083 shares of common stock issuable upon the vesting of restricted stock units outstanding as of September 30, 2017;

149,700 shares of common stock issuable upon the exercise of outstanding warrants as of September 30, 2017 having a weighted-average exercise price of $3.01 per share;

1,881,670 shares of common stock reserved for issuance pursuant to future equity awards under our 2014 Incentive Plan as of September 30, 2017, 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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1,816,052 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan, or 2014 ESPP, as September 30, 2017, 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 or vesting of restricted stock units after September 30, 2017.

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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, 2014, 2015, and 2016 from our audited financial statements incorporated by reference in this prospectus from our Annual Report on Form 10-K for the year ended December 31, 2016, or our 2016 Annual Report, and we have derived the following statements of operations data for the nine months ended September 30, 2017 and September 30, 2016 and the balance sheet data as of September 30, 2017 from our unaudited interim financial statements incorporated by reference in this prospectus from our Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, or our September 2017 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 2016 Annual Report and our September 2017 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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands, except share and per share amounts)			(unaudited)	
Statements of Operations Data:					
Revenue	$	$	$ 133	$ 128	$ 198
Operating expenses:					
Research and development	45,967	114,737	183,204	132,458	170,117
General and administrative	10,811	33,001	64,936	45,128	62,189
Total operating expenses	56,778	147,738	248,140	177,586	232,306
Loss from operations	(56,778)	(147,738)	(248,007)	(177,458)	(232,108)
Interest income	608	2,320	3,789	2,877	3,350
Other income (expense), net	(3,632)	(200)	(1,621)	(6)	8,368
Total other income (expense), net	(3,024)	2,120	2,168	2,871	11,718
Loss before income taxes	(59,802)	(145,618)	(245,839)	(174,587)	(220,390)
Income tax provision			(35)		(18)
Net loss	$ (59,802)	$ (145,618)	$ (245,874)	$ (174,587)	$ (220,408)
Net loss attributable to common stockholders[(1)]	$ (64,610)	$ (145,618)	$ (245,874)	$ (174,587)	$ (220,408)
Net loss per share attributable to common stockholders, basic	$ (2.25)	$ (3.96)	$ (6.21)	$ (4.46)	$ (5.22)

and diluted					
Shares used in computing net loss per share attributable to common stockholders, basic and diluted	28,755,758	36,782,603	39,586,908	39,184,994	42,222,413

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	As of September 30, 2017	
	Actual	As-Adjusted[2][3]
	(in thousands)	
	(unaudited)	
Balance Sheet Data:		
Cash, cash equivalents and short-term investments	$ 371,066	$ 535,565
Working capital	326,642	491,141
Total assets	435,047	599,546
Accumulated deficit	(750,941)	(750,941)
Total stockholders equity	365,558	530,057

(1) See (a) Notes 2 and 11 to our audited financial statements included in our 2016 Annual Report incorporated by reference herein and (b) Note 7 to our interim financial statements included in our September 2017 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 an assumed 3,559,804 shares of common stock offered by us in this offering at an assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) A $1.00 increase (decrease) in the assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, 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 $3.4 million, assuming that the number of shares offered by us 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 $49.16 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 $4.6 million after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

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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 supplement or incorporated by reference in this prospectus supplement, including the risks and uncertainties discussed under Risk Factors in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q, 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 $37.65 per share, based on an assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, and our as-adjusted net tangible book value as of September 30, 2017 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 September 30, 2017, we had outstanding 5,590,242 restricted stock units and options, and warrants to purchase 149,700 shares of our common stock; the vesting of the restricted stock units and 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, particularly our directors, executive officers and significant 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. Our directors and executive officers have entered into lock-up agreements with the underwriters in connection with this offering pursuant to which they have agreed with the underwriters not to offer, sell, dispose of or hedge any shares of common stock or securities convertible into or exchangeable for shares of common stock, subject to specified limited exceptions and extensions described elsewhere in this prospectus, for a period of 60 days after the date of this prospectus without the prior written consent of J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Goldman Sachs & Co. LLC and Cowen and Company, LLC. Based upon the number of shares of common stock outstanding as of September 30, 2017, and an assumed offering price per share of $49.16 as of January 19, 2018, upon the closing of this offering we will have outstanding a total of approximately 46,048,116 shares of common stock (assuming no exercise of the underwriters option to purchase additional shares). Other than any shares held by our directors and executive officers subject to lock-up agreements with the underwriters, all of these outstanding shares of common stock 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 following this offering. J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated,

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Goldman Sachs & Co. LLC and Cowen and Company, LLC may, in their sole discretion, permit our executive officers and directors who are subject to these lock-up agreements to sell shares prior to the expiration of the lock-up agreements. Sales of a substantial number of shares upon expiration of the lock-up agreements, the perception that such sales may occur, or early release of these agreements, could cause our market price to fall or make it more difficult for you to sell your common stock at a time and price that you deem appropriate.

We 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.

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.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement 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, potentia 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 commercialization, marketing, and manufacturing capabilities and strategy;
- our expectations regarding the timing of clinical study commencements and reporting results from same;
- the timing and likelihood of regulatory approvals for our product candidates;
- the anticipated indications for our product candidates, if approved;
- the potential market opportunities for commercializing our product and product candidates;
- our expectations regarding the potential market size and the size of the patient populations for our product and 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, product and product candidates and the integration and performance of any acquired businesses;
- the initiation, timing, progress, and results of ongoing and future preclinical 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 and product candidates;

our ability to maintain and establish collaborations or strategic relationships or obtain additional funding;

our ability to maintain and establish relationships with third parties, such as contact research organizations, suppliers and distributors;

our use of proceeds from this offering;

our financial performance and expansion of our organization;

our ability to obtain supply of our product and product candidates;

the scalability and commercial viability of our manufacturing methods and processes;

developments and projections relating to our competitors and our industry; and

other risks and uncertainties, including those listed or incorporated by reference in Risk Factors.

Any forward-looking statements in this prospectus reflect our current views with respect to future events or to our future financial performance and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by these forward-looking statements. Factors that may cause

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actual results to differ materially from current expectations include, among other things, those discussed 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, or derived such data based on information in, 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.

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USE OF PROCEEDS

We estimate that the net proceeds to us from the assumed sale of 3,559,804 shares of common stock offered by us in this offering will be approximately $164.5 million, based on an assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, 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 $189.2 million, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Each $1.00 increase (decrease) in the assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, would increase (decrease) the net proceeds to us by approximately $3.4 million, assuming that the number of shares offered by us 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 $4.6 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 of the offering to fund the potential commercialization of Mepsevii and burosumab in multiple territories, development of clinical-stage assets such as UX007 for Glut1 DS and LC-FAOD, and gene therapies for OTC and GSD1a, as well as advancement of our early-stage translational research programs. We may also use a portion of the net proceeds 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. Finally, we may use any remaining proceeds for working capital and other general corporate purposes.

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.

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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:

	High	Low
2018		
First Quarter (through January 19, 2018)	$ 53.39	$ 45.69
2017		
First Quarter	$ 91.35	$ 65.55
Second Quarter	$ 68.46	$ 51.67
Third Quarter	$ 71.99	$ 49.57
Fourth Quarter	$ 58.00	$ 43.14
2016		
First Quarter	$ 110.06	$ 49.00
Second Quarter	$ 78.13	$ 46.52
Third Quarter	$ 81.40	$ 48.33
Fourth Quarter	$ 86.77	$ 52.60

On January 19, 2018, the last reported sale price of our common stock on The NASDAQ Global Select Market was $49.16 per share. As of January 19, 2018, we had approximately 4 holders of record of our common stock. This number does not include beneficial owners whose shares are held by nominees in street name.

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DIVIDEND POLICY

We have never declared or paid cash dividends on our common stock. We currently intend to retain all available funds and any future earnings, if any, for the development, operation and expansion of our business and do not anticipate paying any cash dividends for 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.

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CAPITALIZATION

The following table sets forth our cash, cash equivalents and short-term investments and capitalization as of September 30, 2017:

- on an actual basis; and
- on an as-adjusted basis to reflect the issuance and sale by us of an assumed 3,559,804 shares of our common stock in this offering at an assumed public offering price of $49.16 per share, which was the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, 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 2016 Annual Report and September 2017 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 September 30, 2017	
	Actual	As Adjusted[1]
	(in thousands, except share and per share data)	
	(unaudited)	
Cash, cash equivalents and short-term investments	$ 371,066	$ 535,565
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; 42,488,312 shares issued and outstanding, actual; 250,000,000 shares authorized, 46,048,116 shares issued and outstanding, as-adjusted	42	46
Additional paid-in capital	1,123,861	1,288,356
Accumulated other comprehensive loss	(7,404)	(7,404)
Accumulated deficit	(750,941)	(750,941)
Total stockholders equity	365,558	530,057
Total capitalization	$ 365,558	$ 530,057

(1) A $1.00 increase (decrease) in the assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, 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 $3.4 million, assuming that the number of shares offered by us 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 $49.16 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 $4.6 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 September 30, 2017:

- 4,834,159 shares of common stock issuable upon the exercise of outstanding stock options as of September 30, 2017 having a weighted-average exercise price of $65.95 per share;

- 756,083 shares of common stock issuable upon the vesting of restricted stock units outstanding as of September 30, 2017;

- 149,700 shares of common stock issuable upon the exercise of outstanding warrants as of September 30, 2017 having a weighted-average exercise price of $3.01 per share;

- 1,881,670 shares of common stock reserved for issuance pursuant to future equity awards under our 2014 Incentive Plan as of September 30, 2017, as well as any future increases in the number of shares of our common stock reserved for future issuance under this plan; and

- 1,816,052 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan, or 2014 ESPP, as of September 30, 2017, as well as any future increases in the number of shares of our common stock reserved for future issuance under the 2014 ESPP.

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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 September 30, 2017 was approximately $365.6 million, or $8.60 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 an assumed 3,559,804 shares of common stock in this offering by us at an assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, 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 September 30, 2017 would have been $530.1 million, or $11.51 per share. This represents an immediate increase in net tangible book value of $2.91 per share to existing stockholders and an immediate dilution of $37.65 per share to investors participating in this offering, as illustrated in the following table:

Assumed public offering price per share		$ 49.16
Historical net tangible book value per share as of September 30, 2017	$ 8.60	
Increase in as-adjusted net tangible book value per share attributable to new investors	2.91	
As-adjusted net tangible book value per share after this offering		11.51
Dilution per share to investors participating in this offering		$ 37.65

Each $1.00 increase (decrease) in the assumed public offering price of $49.16 per share, which is the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, would increase (decrease) the as-adjusted net tangible book value by approximately $3.4 million, or approximately $0.07 per share, and increase (decrease) the dilution per share to new investors by approximately $0.93 per share, assuming that the number of shares offered by us 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 $4.6 million, or $0.08 per share, and the dilution per share to new investors would be approximately $0.08 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 $4.6 million, or approximately $0.07 per share, and the dilution per share to new investors would be approximately $0.07 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 September 30, 2017:

4,834,159 shares of common stock issuable upon the exercise of outstanding stock options having a weighted-average exercise price of $65.95 per share;

756,083 shares of common stock issuable upon the vesting of restricted stock units;

149,700 shares of common stock issuable upon the exercise of outstanding warrants having a weighted-average exercise price of $3.01 per share;

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1,881,670 shares of common stock reserved for issuance pursuant to future equity awards under our 2014 Incentive Plan, as well as any future increases in the number of shares of our common stock reserved for future issuance under this plan; and

1,816,052 shares of common stock reserved for future issuance under our 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.

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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 supplement forms a part, and to the applicable provisions of the Delaware General Corporation Law.

Common Stock

As of September 30, 2017, there were 42,488,312 shares of our common stock outstanding, held of record by approximately 3 stockholders. Based on shares outstanding as of September 30, 2017, and assuming the sale of 3,559,804 shares of our common stock in this offering at an assumed public offering price of $49.16 per share, which was the last reported sale price of our common stock on The NASDAQ Global Select Market on January 19, 2018, upon completion of this offering, there will be 46,048,116 shares of our common stock outstanding (assuming no exercise of the underwriters option to purchase additional shares).

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. As of September 30, 2017, no shares of preferred stock were outstanding and we have no current plans to issue any shares of preferred stock.

Warrants

As of September 30, 2017, warrants to purchase a total of 149,700 shares of our common stock were outstanding with an exercise price of $3.01 per share. These warrants are exercisable immediately and each

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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 and June 2021.

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,

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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

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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 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.

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UNDERWRITING

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Goldman Sachs & Co. LLC and Cowen and Company, LLC are acting as joint book-running managers of the offering. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have 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 page of this prospectus, the number of shares of common stock listed next to its name in the following table:

Name	Number of Shares
J.P. Morgan Securities LLC	
Merrill Lynch, Pierce, Fenner & Smith Incorporated	
Goldman Sachs & Co. LLC	
Cowen and Company, LLC	
Total	

The underwriters are committed to purchase all the common shares offered by us 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 underwriters propose to offer the common shares directly to the public at the initial public offering price set forth on the cover page 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 initial public offering price. After the initial offering of the shares to the public, the offering price and other selling terms may be changed by the underwriters. The offering of the shares by the underwriters is subject to receipt and acceptance and subject to the underwriters right to reject any order in whole or in part. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to additional shares of common stock from us. 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. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us 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.

	Without option to purchase additional shares exercise	With full option to purchase additional shares exercise
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 $250,000. We have agreed to reimburse the underwriters for expenses relating to the clearance of this offering with the Financial Industry Regulatory Authority, Inc. in an amount up to $. The underwriters have agreed to reimburse us for certain expenses in connection with this offering.

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 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, announce the intention to sell, 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 dispose of, directly or indirectly, or file with the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our common stock or 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 common stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Goldman Sachs & Co. LLC and Cowen and Company, LLC for a period of 60 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 vesting of restricted stock units or 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 or common stock (or any security convertible into common stock) issued 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 (A) 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 or (B) Form S-3 or a successor form thereto, 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 60-day restricted period described above shall enter into a lock-up agreement..

Our directors and executive officers, and certain of our 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 60 days after the date of this prospectus, may not, without the prior written consent of J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Goldman Sachs & Co. LLC and Cowen and Company, 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, lend 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, our common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers and stockholders in accordance with the rules and regulations of the SEC 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 our 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

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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 our common stock:

as a bona fide gift;

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;

as distributions to partners, members or stockholders of the party subject to the lock-up restrictions; or

provided that (with respect to each of the foregoing), no filing by any such party under the Exchange Act or other public announcement shall be required or voluntarily made in connection with such transfer or distribution (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 (i) the underlying shares shall continue to be subject to the restrictions on transfer set forth in the lock-up agreement and (ii) any filing under Section 16(a) of the Exchange Act shall clearly indicate in the footnotes thereto that the filing relates to this circumstance and no other public announcement shall be required or shall be made voluntarily in connection with such exercise;

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 (i) 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 and (ii) any filing under Section 16(a) of the Exchange Act shall clearly indicate in the footnotes thereto that the filing relates to this circumstance and no other public announcement shall be required or shall be made voluntarily in connection with such exercise;

the transfer or surrender of shares of common stock (or any security convertible into common stock) to the Company (1) pursuant to any contractual arrangement that provides the Company with an option to repurchase such shares of common stock in connection with the termination of the employment or other service relationship with the Company of the party subject to the lock-up restrictions, (2) to cover

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tax withholding obligations of the party subject to the lock-up restrictions or in connection with a vesting event of the Company s securities or (3) 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 exercise, provided that any filing under Section 16(a) of the Exchange Act shall clearly indicate in the footnotes thereto that the filing relates to the respective circumstance described above and no other public announcement shall be required or shall be made voluntarily in connection with such exercise;

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;

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; or

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).

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933.

Our common stock is listed/quoted 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 of 1933, 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 underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the underwriters that sold those shares as part of this offering may be required to repay the underwriting discount received by them.

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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.

In addition, in connection with this offering certain of the underwriters (and selling group members) may engage in passive market making transactions in our common stock on The NASDAQ Stock Market prior to the pricing and completion of this offering. Passive market making consists of displaying bids on The NASDAQ Stock Market no higher than the bid prices of independent market makers and making purchases at prices no higher than these independent bids and effected in response to order flow. Net purchases by a passive market maker on each day are generally limited to a specified percentage of the passive market maker s average daily trading volume in the common stock during a specified period and must be discontinued when such limit is reached. Passive market making may cause the price of our common stock to be higher than the price that otherwise would exist in the open market in the absence of these transactions. If passive market making is commenced, it may be discontinued at any time.

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

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 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.

European Economic Area

In relation to each Member State of the European Economic Area (each, a Relevant Member State), no offer of shares may be made to the public in that Relevant Member State other than:

A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;

B.

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 underwriters; or

C. in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares shall require the Company or the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person in a Relevant Member State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed that it is a qualified investor within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive. In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the underwriters has been obtained to each such proposed offer or resale.

The Company, the underwriters and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

This prospectus has been prepared on the basis that any offer of shares in any Relevant Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly any person making or intending to make an offer in that Relevant Member State of shares which are the subject of the offering contemplated in this prospectus may only do so in circumstances in which no obligation arises for the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company nor the underwriters have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company or the underwriters to publish a prospectus for such offer.

For the purpose of the above provisions, 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 the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in the Relevant Member State by any measure implementing the Prospectus Directive in the Relevant Member State and the expression Prospectus Directive means Directive 2003/71/EC (including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member States) and includes any relevant implementing measure in the Relevant Member State and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are qualified investors (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the Order) and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as relevant persons).

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

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Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This document does not constitute a prospectus within the meaning of, and 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 document 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 document nor any other offering or marketing material relating to the offering, the Company or the shares has 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 (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser s province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser s province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Japan

The shares have not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act. Accordingly, none of the shares nor any interest therein may be offered or sold, 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 or for the benefit of a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and any other applicable laws, regulations and ministerial guidelines of Japan in effect at the relevant time.

Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to professional investors as defined in the Securities and Futures Ordinance (Cap.

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571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a prospectus as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, 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 of Hong Kong (except if permitted to do so under the securities 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 as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

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 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 pursuant to Section 275(1), 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 of the SFA by a relevant person which is:

a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) 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 of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

b) where no consideration is or will be given for the transfer;

c) where the transfer is by operation of law;

d) as specified in Section 276(7) of the SFA; or

e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Dubai International Financial Centre

This prospectus supplement relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority (DFSA). This prospectus supplement is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for the prospectus supplement. The shares to which this

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prospectus supplement relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus supplement you should consult an authorized financial advisor.

Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission (ASIC), in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the Corporations Act), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons (the Exempt Investors) who are sophisticated investors (within the meaning of section 708(8) of the Corporations Act), professional investors (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

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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, 2016, 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.

The audited historical financial statements of Dimension Therapeutics, Inc. incorporated by reference into Item 9.01 of Ultragenyx Pharmaceutical Inc. s Current Report on Form 8-K dated November 7, 2017 have been so incorporated in reliance on the report (which contains an explanatory paragraph relating to Dimension Therapeutics, Inc. s requirement for additional financing to fund future operations as described in Note 1 to the financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Exchange Act and in accordance therewith file reports, proxy statements and other information with the SEC. Our filings are available to the public over the Internet at the SEC s website at *www.sec.gov*, as well as at our website at *www.ultragenyx.com*. You may also read and copy, at prescribed rates, any document we file with the SEC at the Public Reference Room of the SEC located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at (800) SEC-0330 for further information on the SEC s Public Reference Rooms.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus supplement the information contained in other documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. Any statement contained in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded, for purposes of this prospectus supplement, to the extent that a statement contained in or omitted from this prospectus supplement, or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement. We incorporate by reference the documents listed below which have been filed by us:

1. Our Annual Report on Form 10-K for the year ended December 31, 2016 (and any portions of our Definitive Proxy Statement on Schedule 14A filed on April 28, 2017 that are incorporated by reference into such Annual Report on Form 10-K);

2. Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2017, June 30, 2017 and September 30, 2017;

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3. Our Current Reports on Form 8-K filed with the SEC on April 10, 2017, June 23, 2017, August 24, 2017, September 18, 2017, September 19, 2017, September 25, 2017, October 2, 2017, October 3, 2017, October 10, 2017, November 7, 2017, as amended on January 17, 2018, November 15, 2017, December 15, 2017, December 18, 2017 and January 10, 2018; and

4. The description of our common stock contained in our registration statement on Form 8-A (File No. 001-36276) filed with the SEC on January 24, 2014, including any amendment or report filed for the purpose of updating such description.

All documents we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, except as to any portion of any report or document that is not deemed filed under such provisions on or after the date of this prospectus supplement until the earlier of the date on which all of the securities registered hereunder have been sold or the registration statement of which this prospectus supplement is a part has been withdrawn, shall be deemed incorporated by reference in this prospectus supplement and to be a part of this prospectus supplement from the date of filing of those documents.

Nothing in this prospectus shall be deemed to incorporate information furnished but not filed with the SEC pursuant to Item 2.02 or 7.01 of Form 8-K.

Upon written or oral request, we will provide without charge to each person, including any beneficial owner, to whom a copy of the prospectus supplement is delivered a copy of the documents incorporated by reference herein (other than exhibits to such documents unless such exhibits are specifically incorporated by reference herein). You may request a copy of these filings, at no cost, by writing or telephoning us at the following address: Ultragenyx Pharmaceutical Inc., 60 Leveroni Court, Novato, California 94949, Attention: Investor Relations, telephone: (415) 483-8800. We have authorized no one to provide you with any information that differs from that contained in this prospectus supplement. Accordingly, you should not rely on any information that is not contained in this prospectus supplement. You should not assume that the information in this prospectus supplement is accurate as of any date other than the date of the front cover of this prospectus supplement.

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PROSPECTUS

Common Stock

Preferred Stock

Debt Securities

Warrants

Units

Under this prospectus, we or any selling stockholder may offer and sell from time to time, in one or more offerings, an indeterminate number of shares of our common stock, preferred stock, debt securities and warrants or any combination thereof separately or in units. The warrants may be convertible into or exercisable or exchangeable for common stock or preferred stock, the preferred stock may be convertible into or exchangeable for common stock and the debt securities may be convertible into or exchangeable for common stock or preferred stock. Each time securities are offered or sold pursuant to this prospectus, we will describe in a prospectus supplement the securities being offered and sold, as well as the specific terms of the securities.

We or any selling stockholder may offer these securities in amounts, at prices and on terms determined at the time of offering. We or any selling stockholder may sell the securities directly to you, through agents we select, or through underwriters and dealers we select. If agents, underwriters or dealers are used to sell the securities, we will name them and describe their compensation in a prospectus supplement or sales agreement prospectus.

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 February 2, 2015 was $56.74 per share.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. YOU SHOULD CAREFULLY REVIEW THE RISKS AND UNCERTAINTIES REFERENCED UNDER THE HEADING RISK FACTORS BEGINNING ON PAGE 4 OF THIS PROSPECTUS AS WELL AS THOSE IN ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT AND ANY RELATED FREE WRITING PROSPECTUS, AND IN THE OTHER DOCUMENTS THAT ARE

INCORPORATED BY REFERENCE INTO THIS PROSPECTUS OR THE APPLICABLE PROSPECTUS SUPPLEMENT.

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

The date of this prospectus is February 3, 2015

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We have not 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 take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give to you. The information contained in this prospectus is accurate only as of the date of this prospectus, unless the information specifically indicates that another date applies. Our business, financial condition, results of operations, and prospects may have changed since those dates.

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ABOUT THIS PROSPECTUS

This prospectus is part of an automatic shelf registration statement that we filed with the Securities and Exchange Commission, or the SEC, as a well-known seasoned issuer as defined in Rule 405 under the Securities Act of 1933, as amended, or the Securities Act. Under this shelf registration, we and/or selling stockholders may offer shares of our common stock and preferred stock, various series of warrants to purchase common stock or preferred stock, debt securities or any combination thereof separately or in units, from time to time in one or more offerings. This prospectus only provides you with a general description of the securities we and/or selling stockholders may offer. Each time we and/or selling stockholders offer a type or series of securities under this prospectus, we will provide a prospectus supplement to this prospectus that will contain more specific information about the securities being offered and specific terms of the offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. This prospectus may not be used to sell our securities unless accompanied by a prospectus supplement. Each such prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents incorporated by reference into this prospectus. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or related free writing prospectus, you should rely on the prospectus supplement or any related free writing prospectus we or a selling stockholder may authorize to be provided to you. We urge you to carefully read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the headings Incorporation of Certain Information by Reference and Where You Can Find Additional Information before you invest in our securities.

Neither we nor any selling stockholder have authorized anyone to provide you with information in addition to or different from that contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus. We take no responsibility for, and can provide no assurances as to the reliability of, any information not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we or a selling stockholder may authorize to be provided to you. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document (unless the information specifically indicates that another date applies) and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading Where You Can Find Additional Information.

Unless otherwise mentioned or unless the context requires otherwise, throughout this prospectus, any applicable prospectus supplement and any related free writing prospectus, the words Ultragenyx, we, us, our, the company similar references refer to Ultragenyx Pharmaceutical Inc.; and the term securities refers collectively to our common stock, preferred stock, warrants to purchase common stock or preferred stock, debt securities, or any combination of the foregoing securities.

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® and Myozyme®. 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.

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ABOUT ULTRAGENYX PHARMACEUTICAL INC.

Ultragenyx is a clinical-stage biopharmaceutical company focused on the identification, acquisition, development, and commercialization of novel products for the treatment of rare and ultra-rare diseases, with a focus on serious, debilitating genetic diseases. We target 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 multiple rare genetic disorders. 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 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.

Our biologics pipeline includes the following product candidates:

KRN23, or UX023, is an antibody targeting fibroblast growth factor 23, or FGF23, intended for the treatment of X-linked hypophosphatemia, or XLH, a rare genetic disease that impairs bone growth. We are developing KRN23 pursuant to our collaboration with Kyowa Hakko Kirin Co., Ltd., or KHK. KHK has completed one Phase 1 study, one Phase 1/2 study, and one longer-term Phase 1/2 study of KRN23 in adults with XLH. We initiated a Phase 2 pediatric study in July 2014 that has been fully enrolled. We also expect to initiate a Phase 2b clinical study in adults with XLH in 2015.

KRN23 is also intended for the treatment of tumor-induced osteomalacia, or TIO. TIO results from typically benign tumors that produce excess levels of FGF23, which can lead to severe osteomalacia, bone fractures, bone and muscle pain, and muscle weakness. We intend to initiate a Phase 2 study of KRN23 in six adult TIO patients in the first half of 2015.

rhGUS, or UX003, is an enzyme replacement therapy we are developing for the treatment of mucopolysaccharidosis 7, or MPS 7, a rare lysosomal storage disease that often leads to multi-system disease, pervasive skeletal disease, and early death. We initiated a Phase 3 clinical study in December 2014.

rhPPCA, or UX004, is an enzyme replacement therapy in preclinical development for galactosialidosis, a rare lysosomal storage disease that can cause multi-system clinical disease similar to MPS 7, including an enlarged liver, joint disease, abnormal bone development, short stature, and early death. We continue preclinical development of rhPPCA.

Our substrate replacement therapy pipeline includes the following product candidates in development for three diseases:

Triheptanoin, or UX007, is a synthetic triglyceride with a specifically designed chemical composition being studied as an energy substrate replacement therapy in an international open-label Phase 2 study for the treatment of long-chain fatty acid oxidation disorders, or LC-FAOD. LC-FAOD is a set of rare metabolic diseases caused by the inability to convert fat into energy, which leads to low blood sugar, muscle rupture, and heart and liver disease.

Triheptanoin is also in a Phase 2 study for the treatment of glucose transporter type-1 deficiency syndrome, or Glut1 DS, a rare metabolic disease of brain energy deficiency that is characterized by seizures, developmental delay, and movement disorder.

SA-ER, or UX001, is an extended-release form of sialic acid in a Phase 2 extension study for the treatment of hereditary inclusion body myopathy, or HIBM, a neuromuscular disorder that causes

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muscle weakness and wasting. We plan to initiate a Phase 3 clinical study by mid-2015 and intend to file a Marketing Authorization Application seeking conditional approval from the European Medicines Agency for the use of SA-ER in the treatment of HIBM in the second half of 2015.

Ultragenyx was incorporated in California in April 2010 and was reincorporated in Delaware in June 2011. Our principal executive offices are located at 60 Leveroni Court, Novato, California 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. Additional information about Ultragenyx can be found on our web site and in our periodic and current reports filed with the SEC. Copies of our current and periodic reports filed with the SEC are available at the SEC Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549, and online at *www.sec.gov* and our web site at *www.ultragenyx.com*. For additional information about our company, please refer to other documents we have filed with the SEC and that are incorporated by reference into this prospectus, as listed under the heading Incorporation of Certain Information by Reference.

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RISK FACTORS

Investing in our securities involves a high degree of risk. Before you decide whether to purchase any of our securities, in addition to the other information, documents or reports included in or incorporated by reference into this prospectus and any accompanying prospectus supplement or other offering materials, you should carefully consider the risk factors in the section entitled Risk Factors in any prospectus supplement to this prospectus as well as in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q, which are incorporated by reference into this prospectus and any prospectus supplement in their entirety, as the same may be amended, supplemented or superseded from time to time by our filings under the Securities Exchange Act of 1934, or the Exchange Act. For more information, see the section entitled Where You Can Find More Information. These risks could materially and adversely affect our business, results of operations and financial condition and could result in a partial or complete loss of your investment.

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, potentia 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 expense, 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 ability to maintain and establish relationships with third parties, such as contact research organizations, suppliers and distributors;

our expectations regarding the time during which we will be an emerging growth company under the JOBS Act;

our use of proceeds under this offering;

our financial performance and expansion of our organization;

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our ability to obtain supply of our product candidates;

developments and projections relating to our competitors and our industry; and

other risks and uncertainties.

Any forward-looking statements in this prospectus reflect our current views with respect to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under the section entitled Risk Factors and discussed elsewhere 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 intend to use the net proceeds we receive from the sale of securities by us as set forth in the applicable prospectus supplement. Unless otherwise set forth in a prospectus supplement, we will not receive any proceeds from the sale of securities by any selling stockholder.

RATIO OF EARNINGS TO FIXED CHARGES

Our ratio of earnings to fixed charges for recently completed fiscal years and any required interim periods will be specified in a prospectus supplement or in a document that we file with the SEC and incorporate by reference in the future.

DESCRIPTION OF SECURITIES

We and/or any selling stockholder may offer shares of our common stock and preferred stock, various series of debt securities and warrants to purchase any such securities, or any combination thereof separately or in units, from time to time in one or more offerings under this prospectus at prices and on terms to be determined at the time of any offering. This prospectus provides you with a general description of the securities we and/or any selling stockholder may offer. Each time we offer a type or series of securities, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of such securities.

Common Stock. We may issue shares of our common stock from time to time. 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

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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. With certain exceptions, 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.

We are authorized to issue 250,000,000 shares of common stock, par value $0.001 per share, of which 31,934,682 shares were issued and outstanding as of December 31, 2014.

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

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Under our certificate of incorporation, 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, par value $0.001 per share, 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.

No shares of preferred stock were issued and outstanding as of December 31, 2014.

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.

If we issue preferred stock pursuant to this prospectus, we will fix the rights, preferences, privileges, qualifications and restrictions of each series of such preferred stock in the certificate of designations relating to that series. If we issue preferred stock pursuant to this prospectus, we will incorporate by reference into the registration statement of which this prospectus is a part the form of any certificate of designations that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. We urge you to read the prospectus supplement and any free writing prospectus related to any series of preferred stock we may offer, as well as the complete certificate of designations that contains the terms of the applicable series of preferred stock.

Debt Securities. We may issue debt securities from time to time, in one or more series. The paragraphs below describe the general terms and provisions of the debt securities we may offer under this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the securities in a supplement to this prospectus, including any additional covenants or changes to existing covenants relating to such series. The prospectus supplement also will indicate whether the general terms and provisions described in this prospectus apply to a particular series of debt securities. You should read the actual indenture if you do not fully understand a term or the way we use it in this prospectus.

If we issue debt securities at a discount from their principal amount, then, for purposes of calculating the aggregate initial offering price of the offered securities issued under this prospectus, we will include only the initial offering price of the debt securities and not the principal amount of the debt securities.

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We have summarized below the material provisions of the indenture that will govern debt securities that we may issue, or indicated which material provisions will be described in the related prospectus supplement. The prospectus supplement relating to any particular securities offered will describe the specific terms of the securities, which may be in addition to or different from the general terms summarized in this prospectus. We have included the form of the indenture as an exhibit to our registration statement of which this prospectus is a part, and it is incorporated into this prospectus by reference. Because the summary in this prospectus and in any applicable prospectus supplement does not contain all of the information that you may find useful, you should read the documents relating to the securities that are described in this prospectus or in any applicable prospectus supplement. Please read Where You Can Find More Information in this prospectus to find out how you can obtain a copy of those documents. References below to an indenture are references to the indenture, as supplemented, under which a particular series of debt securities is issued. As used under this caption, the term debt securities includes the debt securities being offered by this prospectus and all other debt securities issued by us under the indenture.

General

The indenture:

- does not limit the amount of debt securities that we may issue;
- allows us to issue debt securities in one or more series;
- does not require us to issue all of the debt securities of a series at the same time; and
- allows us to reopen a series to issue additional debt securities without the consent of the holders of the debt securities of such series.

The prospectus supplement for each offering of debt securities will provide the following terms, where applicable:

- the title of the debt securities and whether they are senior, senior subordinated or subordinated debt securities;
- the aggregate principal amount of the debt securities being offered and any limit on their aggregate principal amount, and, if the series is to be issued at a discount from its face amount, the method of computing the accretion of such discount;
- the price at which the debt securities will be issued, expressed as a percentage of the principal and, if other than the full principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof or, if applicable, the portion of the principal amount of such debt securities that is convertible into common stock or preferred stock or the method by which any such portion shall be determined;

if convertible, the terms on which such debt securities are convertible, including the initial conversion price or rate or the method of calculation, how and when the conversion price or exchange ratio may be adjusted, whether conversion or exchange is mandatory, at the option of the holder or at our option, the conversion or exchange period, and any other provision in relation thereto, and any applicable limitations on the ownership or transferability of common stock or preferred stock received on conversion;

the date or dates, or the method for determining the date or dates, on which the principal of the debt securities will be payable;

the fixed or variable interest rate or rates of the debt securities, or the method by which the interest rate or rates is determined;

the date or dates, or the method for determining the date or dates, from which interest will accrue;

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the dates on which interest will be payable;

the record dates for interest payment dates, or the method by which we will determine those dates;

the persons to whom interest will be payable;

the basis upon which interest will be calculated if other than that of a 360-day year of twelve 30-day months;

any collateral securing the performance of our obligations under the debt securities;

the place or places where the principal of, premium, if any, and interest on, the debt securities will be payable;

where the debt securities may be surrendered for registration of transfer or conversion or exchange;

where notices or demands to or upon us in respect of the debt securities and the applicable indenture may be served;

any provisions regarding our right to redeem or purchase debt securities or the right of holders to require us to redeem or purchase debt securities;

any right or obligation we have to redeem, repay or purchase the debt securities pursuant to any sinking fund or analogous provision;

the currency or currencies (including any composite currency) in which the debt securities are denominated and payable if other than United States dollars, and the currency or currencies (including any composite currency) in which principal, premium, if any, and interest, if any, will be payable, and if such payments may be made in a currency other than that in which the debt securities are denominated, the manner for determining such payments, including the time and manner of determining the exchange rate between the currency in which such securities are denominated and the currency in which such securities or any of them may be paid, and any additions to, modifications of or deletions from the terms of the debt securities to provide for or to facilitate the issuance of debt securities denominated or payable in a currency other than U.S. dollars;

whether the amount of payments of principal of, premium, if any, or interest on, the debt securities may be determined according to an index, formula or other method and how such amounts will be determined;

whether the debt securities will be in registered form, bearer form or both, and the terms of these forms;

whether the debt securities will be issued in whole or in part in the form of a global security and, if applicable, the identity of the depositary for such global security;

any provision for electronic issuance of the debt securities or issuance of the debt securities in uncertificated form;

whether and upon what terms the debt securities of such series may be defeased or discharged, if different from the provisions set forth in the indenture for the series to which the supplemental indenture or authorizing resolution relates;

any provisions granting special rights to holders of securities upon the occurrence of such events as specified in the applicable prospectus supplement;

any deletions from, modifications of, or additions to our events of default or covenants or other provisions set forth in the indenture for the series to which the supplemental indenture or authorizing resolution relates; and

any other material terms of the debt securities, which may be different from the terms set forth in this prospectus.

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We may issue debt securities at a discount below their principal amount and provide for less than the entire principal amount thereof to be payable upon declaration of acceleration of the maturity of the debt securities pursuant to the terms of the indenture. We refer to any such debt securities throughout this prospectus as original issue discount securities. The applicable prospectus supplement will describe the United States federal income tax consequences and other relevant considerations applicable to original issue discount securities.

Neither the Delaware General Corporation Law nor our governing instruments define the term substantially all as it relates to the sale of assets. Additionally, Delaware court cases interpreting the term substantially all rely upon the facts and circumstances of each particular case. Consequently, to determine whether a sale of substantially all of our assets has occurred, a holder of debt securities must review the financial and other information that we have disclosed to the public.

The applicable prospectus supplement will also describe any material covenants to which a series of debt securities will be subject and the applicability of those covenants to any of our subsidiaries to be restricted thereby, which are referred to herein as restricted subsidiaries. The applicable prospectus supplement will also describe provisions for restricted subsidiaries to cease to be restricted by those covenants.

Events of Default

Unless the applicable prospectus supplement states otherwise, when we refer to events of default as defined in the indentures with respect to any series of debt securities, we mean:

- our failure to pay interest on any debt security of such series when the same becomes due and payable and the continuance of any such failure for a period of 30 days;

- our failure to pay the principal or premium of any debt security of such series when the same becomes due and payable at maturity, upon acceleration, redemption or otherwise;

- our failure or the failure of any restricted subsidiary to comply with any of its agreements or covenants in, or provisions of, the debt securities of such series or the indenture (as they relate thereto) and such failure continues for a period of 60 days after our receipt of notice of the default from the trustee or from the holders of at least 25 percent in aggregate principal amount of the then outstanding debt securities of that series (except in the case of a default with respect to the provisions of the indenture regarding the consolidation, merger, sale, lease, conveyance or other disposition of all or substantially all of the assets of us (or any other provision specified in the applicable supplemental indenture or authorizing resolution), which will constitute an event of default with notice but without passage of time); or

- certain events of bankruptcy, insolvency or reorganization occur with respect to Ultragenyx or any restricted subsidiary of Ultragenyx that is a significant subsidiary (as defined in the indenture).

If an event of default occurs and is continuing with respect to debt securities of any series outstanding, then the trustee or the holders of 25% or more in principal amount of the outstanding debt securities of that series will have the right to declare the principal amount of all the debt securities of that series to be due and payable immediately. However, the holders of at least a majority in principal amount of outstanding debt securities of such series may rescind and

annul such declaration and its consequences, except an acceleration due to nonpayment of principal or interest on such series, if the rescission would not conflict with any judgment or decree and if all existing events of default with respect to such series have been cured or waived.

The indenture also provides that the holders of at least a majority in principal amount of the outstanding debt securities of any series, by notice to the trustee, may, on behalf of all holders, waive any existing default and its consequences with respect to such series of debt securities, other than any event of default in payment of principal or interest.

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The indenture will require the trustee to give notice to the holders of debt securities within 90 days after the trustee obtains knowledge of a default that has occurred and is continuing. However, the trustee may withhold notice to the holders of any series of debt securities of any default, except a default in payment of principal or interest, if any, with respect to such series of debt securities, if the trustee considers it in the interest of the holders of such series of debt securities to do so.

The holders of a majority of the outstanding principal amount of the debt securities of any series will have the right to direct the time, method and place of conducting any proceedings for any remedy available to the trustee with respect to such series, subject to limitations specified in the indenture.

Modification, Amendment, Supplement and Waiver

Without notice to or the consent of any holder of any debt security, we and the trustee may modify, amend or supplement the indenture or the debt securities of a series:

to cure any ambiguity, omission, defect or inconsistency;

to comply with the provisions of the indenture regarding the consolidation, merger, sale, lease, conveyance or other disposition of all or substantially all of our assets;

to provide that specific provisions of the indenture shall not apply to a series of debt securities not previously issued or to make a change to specific provisions of the indenture that only applies to any series of debt securities not previously issued or to additional debt securities of a series not previously issued;

to create a series and establish its terms;

to provide for uncertificated debt securities in addition to or in place of certificated debt securities;

to release a guarantor in respect of any series which, in accordance with the terms of the indenture applicable to such series, ceases to be liable in respect of its guarantee;

to add a guarantor subsidiary in respect of any series of debt securities;

to secure any series of debt securities;

to add to the covenants of Ultragenyx for the benefit of the holders or surrender any right or power conferred upon Ultragenyx;

to appoint a successor trustee with respect to the securities;

to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act;

to make any change that does not adversely affect the rights of holders; or

to conform the provisions of the indenture to the final offering document in respect of any series of debt securities.

The indenture will provide that we and the trustee may modify, amend, supplement or waive any provision of the debt securities of a series or of the indenture relating to such series with the written consent of the holders of at least a majority in principal amount of the outstanding debt securities of such series. However, without the consent of each holder of a debt security the terms of which are directly modified, amended, supplemented or waived, a modification, amendment, supplement or waiver may not:

reduce the amount of debt securities of such series whose holders must consent to a modification, amendment, supplement or waiver;

reduce the rate of or extend the time for payment of interest, including defaulted interest;

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reduce the principal of or extend the fixed maturity of any debt security or alter the provisions with respect to redemptions or mandatory offers to repurchase debt securities of a series in a manner adverse to holders;

make any change that adversely affects any right of a holder to convert or exchange any debt security into or for shares of our common stock or other securities, cash or other property in accordance with the terms of such security;

modify the ranking or priority of the debt securities of the relevant series;

release any guarantor of any series from any of its obligations under its guarantee or the indenture otherwise than in accordance with the terms of the indenture;

make any change to any provision of the indenture relating to the waiver of existing defaults, the rights of holders to receive payment of principal and interest on the debt securities, or to the provisions regarding amending or supplementing the indenture or the debt securities of a particular series with the written consent of the holders of such series, except to increase the percentage required for modification or waiver or to provide for consent of each affected holder of debt securities of such series;

waive a continuing default or event of default in the payment of principal of or interest on the debt securities; or

make any debt security payable at a place or in money other than that stated in the debt security, or impair the right of any holder of a debt security to bring suit as permitted by the indenture.

The holders of a majority in aggregate principal amount of the outstanding debt securities of such series may, on behalf of all holders of debt securities of that series, waive any existing default under, or compliance with, any provision of the debt securities of a particular series or of the indenture relating to a particular series of debt securities, other than any event of default in payment of interest or principal.

Defeasance

The indenture will permit us to terminate all our respective obligations under the indenture as they relate to any particular series of debt securities, other than the obligation to pay interest, if any, on and the principal of the debt securities of such series and certain other obligations, at any time by:

depositing in trust with the trustee, under an irrevocable trust agreement, money or government obligations in an amount sufficient to pay interest, if any, on and the principal of the debt securities of such series to their maturity or redemption; and

complying with other conditions, including delivery to the trustee of an opinion of counsel to the effect that holders will not recognize income, gain or loss for federal income tax purposes as a result of our exercise of such right and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case otherwise.

The indenture will also permit us to terminate all of our respective obligations under the indenture as they relate to any particular series of debt securities, including the obligations to pay interest, if any, on and the principal of the debt securities of such series and certain other obligations, at any time by:

depositing in trust with the trustee, under an irrevocable trust agreement, money or government obligations in an amount sufficient to pay interest, if any, on and the principal of the debt securities of such series to their maturity or redemption; and

complying with other conditions, including delivery to the trustee of an opinion of counsel to the effect that (A) we have received from, or there has been published by, the Internal Revenue Service a ruling, or (B) since the date such series of debt securities were originally issued, there has been a change in the

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applicable federal income tax law, in either case to the effect that, and based thereon such opinion of counsel shall state that, holders will not recognize income, gain or loss for federal income tax purposes as a result of our exercise of such right and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case otherwise.

In addition, the indenture will permit us to terminate substantially all our respective obligations under the indenture as they relate to a particular series of debt securities by depositing with the trustee money or government obligations sufficient to pay all principal of and interest on such series at its maturity or redemption date if the debt securities of such series will become due and payable at maturity within one year or are to be called for redemption within one year of the deposit.

Transfer and Exchange

A holder will be able to transfer or exchange debt securities only in accordance with the indenture. The registrar may require a holder, among other things, to furnish appropriate endorsements and transfer documents, and to pay any taxes and fees required by law or permitted by the indenture.

Concerning the Trustee

The indenture will contain limitations on the rights of the trustee, should it become our creditor, to obtain payment of claims in specified cases or to realize on property received in respect of any such claim as security or otherwise. The indenture will permit the trustee to engage in other transactions; however, if the trustee acquires any conflicting interest, it must eliminate such conflict or resign.

The indenture will provide that in case an event of default occurs and is not cured, the trustee will be required, in the exercise of its power, to use the degree of care of a prudent person in similar circumstances in the conduct of such person s own affairs. The trustee shall be under no obligation to exercise any of the rights or powers vested in it by the indenture at the request or direction of any of the holders pursuant to the indenture, unless such holders shall have offered to the trustee security or indemnity satisfactory to the trustee against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

No Recourse Against Others

The indenture will provide that there is no recourse under any obligation, covenant or agreement in the applicable indenture or with respect to any debt security against any of our or our successor s past, present or future stockholders, employees, officers or directors.

Governing Law

The laws of the State of New York will govern the indenture and the debt securities.

Warrants. We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series, from time to time. We may issue warrants independently or together with common stock, preferred stock and/or debt securities, and the warrants may be attached to or separate from those securities.

If we issue warrants, they will be evidenced by warrant agreements or warrant certificates issued under one or more warrant agreements, which are contracts between us and an agent for the holders of the warrants. We urge you to read the prospectus supplement and any free writing prospectus related to any series of warrants we may offer, as well as the complete warrant agreement and warrant certificate that contain the terms of the warrants. If we issue warrants,

forms of warrant agreements and warrant certificates relating to warrants for the purchase of common stock, preferred stock and debt securities will be incorporated by reference into the registration statement of which this prospectus is a part from reports we would subsequently file with the SEC.

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Units. We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. You should read any prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions and we will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement or related free writing prospectus, including, without limitation, the following, as applicable:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain United States federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

SELLING STOCKHOLDERS

Selling stockholders are persons or entities that, directly or indirectly, have acquired or will from time to time acquire from us, our securities. Such selling stockholders may be parties to registration rights agreements with us, or we otherwise may have agreed or will agree to register their securities for resale. The initial purchasers of our securities, as well as their transferees, pledgees, donees or successors, all of whom we refer to as selling stockholders, may from time to time offer and sell our securities pursuant to this prospectus, any applicable prospectus supplement or post-effective amendment.

Information regarding the beneficial ownership of our securities by a selling stockholder, the number of securities being offered by a selling stockholder and the number of securities beneficially owned by a selling stockholder after the applicable offering, where applicable, will be set forth in a prospectus supplement or in a post-effective

amendment. The applicable prospectus supplement or post-effective amendment will also disclose whether any of the selling stockholders has held any position or office with, has been employed by or otherwise has had a material relationship with us during the three years prior to the date of the applicable prospectus supplement or post-effective amendment.

PLAN OF DISTRIBUTION

We may sell the securities covered by this prospectus from time to time in one or more offerings. Registration of the securities covered by this prospectus does not mean, however, that those securities will necessarily be offered or sold.

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We may sell the securities separately or together:

- through one or more underwriters or dealers in a public offering and sale by them;
- directly to investors; or
- through agents.

We may sell the securities from time to time:

- in one or more transactions at a fixed price or prices, which may be changed from time to time;
- at market prices prevailing at the times of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We will describe the method of distribution of any securities issued pursuant to this prospectus, and the terms of any offering pursuant to this prospectus, in the applicable prospectus supplement. Any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time.

If underwriters are used in the sale of any securities, the securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions described above. The securities may be either offered to the public through underwriting syndicates represented by managing underwriters, or directly by underwriters. We may use underwriters with whom we have a material relationship. We will describe in the applicable prospectus supplement, naming the underwriter and the nature of any such relationship.

Underwriters, dealers and agents may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments made by the underwriters, dealers or agents, under agreements between us and the underwriters, dealers and agents.

We may grant underwriters who participate in the distribution of securities an option to purchase additional securities to cover over-allotments, if any, in connection with the distribution.

Underwriters, dealers or agents may receive compensation in the form of discounts, concessions or commissions from us or our purchasers, as their agents in connection with the sale of securities. These underwriters, dealers or agents may be considered to be underwriters under the Securities Act. As a result, discounts, commissions or profits on resale received by the underwriters, dealers or agents may be treated as underwriting discounts and commissions. The applicable prospectus supplement will identify any such underwriter, dealer or agent and describe any compensation received by them from us. Any initial public offering price and any discounts or concessions allowed or re-allowed or

paid to dealers may be changed from time to time.

Unless otherwise specified in the applicable prospectus supplement, all securities we offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. Any common stock sold pursuant to a prospectus supplement will be listed for trading on The NASDAQ Global Select Market or other principal market for our common stock. We may apply to list any series of debt securities, preferred stock or warrants on an exchange, but we are not obligated to do so. Therefore, there may not be liquidity or a trading market for any series of securities.

Any underwriter may engage in over-allotment transactions, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act.

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Underwriters, broker-dealers or agents who may become involved in the sale of the common stock may engage in transactions with and perform other services for us in the ordinary course of their business for which they receive compensation.

LEGAL MATTERS

The legality of the issuance of the securities being offered hereby and the binding nature of any debt securities or warrants being offered hereby is being passed upon by Gibson, Dunn & Crutcher LLP, San Francisco, California. Certain legal matters in connection with securities being offered hereby will be passed upon by counsel for any underwriters, dealers or agents as may be specified in the applicable prospectus supplement.

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.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus the information contained in other documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. Any statement contained in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded, for purposes of this prospectus, to the extent that a statement contained in or omitted from this prospectus, or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein, modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. We incorporate by reference the documents listed below which have been filed by us:

1. Our Annual Report on Form 10-K for the year ended December 31, 2013;

2. Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2014, June 30, 2014 and September 30, 2014;

3. Our Definitive Proxy Statement on Schedule 14A, filed with the SEC on May 23, 2014;

4. Our Current Reports on Form 8-K filed with the SEC on February 5, 2014, February 25, 2014, July 16, 2014, August 14, 2014 and August 21, 2014; and

5. The description of our common stock contained in our registration statement on Form 8-A (File No. 001-36276) filed with the SEC on January 24, 2014, including any amendment or report filed for

the purpose of updating such description.

All documents we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, except as to any portion of any report or documents that is not deemed filed under such provisions on or after the date of this prospectus until the earlier of the date on which all of the securities registered hereunder have been sold or the registration statement of which this prospectus is a part has been withdrawn, shall be deemed incorporated by reference in this prospectus and to be a part of this prospectus from the date of filing of those documents.

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Nothing in this prospectus shall be deemed to incorporate information furnished but not filed with the SEC pursuant to Item 2.02 or 7.01 of Form 8-K.

Upon written or oral request, we will provide without charge to each person, including any beneficial owner, to whom a copy of the prospectus is delivered a copy of the documents incorporated by reference herein (other than exhibits to such documents unless such exhibits are specifically incorporated by reference herein). You may request a copy of these filings, at no cost, by writing or telephoning us at the following address: Ultragenyx Pharmaceutical Inc., 60 Leveroni Court, Suite 200, Novato, California 94949, Attention: Investor Relations, telephone: (415) 483-8800. We have authorized no one to provide you with any information that differs from that contained in this prospectus. Accordingly, you should not rely on any information that is not contained in this prospectus. You should not assume that the information in this prospectus is accurate as of any date other than the date of the front cover of this prospectus.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Exchange Act and in accordance therewith file reports, proxy statements and other information with the SEC. Our filings are available to the public over the Internet at the SEC s website at *www.sec.gov*, as well as at our website at *www.ultragenyx.com*. You may also read and copy, at prescribed rates, any document we file with the SEC at the Public Reference Room of the SEC located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at (800) SEC-0330 for further information on the SEC s Public Reference Rooms.

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$175,000,000

Common Stock

Prospectus Supplement

J.P. Morgan **BofA Merrill Lynch** **Goldman Sachs & Co. LLC** **Cowen**

January , 2018