

Prospectus Supplement
(To Prospectus dated February 12, 2021)

8,333,334 shares

Pre-funded warrants to purchase 1,666,722 shares



Common Stock

We are offering 8,333,334 shares of our common stock and, in lieu of common stock to certain investors, pre-funded warrants to purchase 1,666,722 shares of our common stock. The purchase price of each pre-funded warrant equals the price per share at which the shares of our common stock are being sold to the public in this offering, minus \$0.001, which is the exercise price of each pre-funded warrant per share. Each pre-funded warrant will be exercisable at any time after the date of issuance of such pre-funded warrant, subject to an ownership limitation. This prospectus supplement also relates to the offering of the shares of common stock issuable upon the exercise of such pre-funded warrants.

Our common stock trades on the Nasdaq Global Select Market under the symbol "RARE." On October 18, 2023, the last reported sale price for our common stock on the Nasdaq Global Select Market was \$31.73 per share. There is no established public trading market for the pre-funded warrants, and we do not expect a market to develop. We do not intend to list the pre-funded warrants on the Nasdaq Global Select Market or any other national securities exchange or nationally recognized trading system.

Investing in our common stock and pre-funded warrants involves a high degree of risk. See "[Risk Factors](#)" beginning on page S-6 of this prospectus supplement and page 3 of the accompanying prospectus, as well as the section captioned "Risk Factors" in our most recently filed Annual Report on Form 10-K and any subsequent periodic reports we file with the Securities and Exchange Commission, which are incorporated by reference in this prospectus supplement.

	Per share	Per pre-funded warrant	Total
Public offering price	\$30.0000	\$29.9990	\$300,000,013
Underwriting discounts and commissions(1)	\$ 1.6125	\$ 1.6125	\$ 16,125,001
Proceeds to Ultragenyx Pharmaceutical Inc., before expenses	\$28.3875	\$28.3865	\$283,875,012

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

We have granted the underwriters an option, which is exercisable within 30 days after the date of this prospectus supplement, to purchase up to an additional 1,500,000 shares of our common stock.

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

The underwriters expect to deliver the shares of common stock and pre-funded warrants to purchasers on or about October 23, 2023.

Joint Book-Running Managers

J.P. Morgan

Goldman Sachs & Co. LLC

BofA Securities

TD Cowen

The date of this prospectus supplement is October 18, 2023

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This prospectus supplement and the accompanying prospectus form part of a registration statement on Form S-3 (File No. 333-253008) that we filed with the Securities and Exchange Commission (the "SEC") on February 12, 2021 using a "shelf" registration process. Under this shelf registration, we may from time to time sell shares of common stock and other securities, including in this offering. This document contains two parts. The first part consists of this prospectus supplement, which describes the specific terms of this offering. The second part consists of the accompanying prospectus, which 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 or pre-funded warrants 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 or pre-funded warrants. Our business, financial condition, results of operations and prospects may have changed since that date.

No action is being taken in any jurisdiction outside the United States to permit a public offering of our common stock or pre-funded warrants 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.

Prospectus supplement summary

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 SEC incorporated by reference herein, before deciding to invest in our common stock or pre-funded warrants. Investors should carefully consider the information set forth under "Risk Factors" beginning on page S-5 of this prospectus supplement and page 3 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 ultrarare genetic diseases. We target diseases for which the unmet medical need is high, the biology for treatment is clear, and for which there are typically no approved therapies treating the underlying disease. 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.

Recent Developments

Interim phase 2 data from Phase 2/3 Orbit study of setrusumab (UX143)

On October 14, 2023, we and Mereo BioPharma Group plc announced interim data from the Phase 2 portion of the Phase 2/3 Orbit study demonstrating that treatment with setrusumab (UX143) significantly reduced incidence of fractures in patients with osteogenesis imperfecta ("OI") with at least 6 months of follow-up and continues to demonstrate ongoing and meaningful improvements in lumbar spine bone mineral density ("BMD"). The data were presented in a late-breaker presentation at the American Society for Bone and Mineral Research 2023 Annual Meeting.

As of the cut-off date and following at least six months of treatment with setrusumab, the annualized fracture rate across all 24 patients in the Phase 2 portion of the study was reduced by 67%. In the two years prior to treatment with setrusumab all patients experienced at least one fracture. The median annualized fracture rate of 0.72 in the two years prior to treatment was reduced to 0.00 (n=24, p=0.042) during the mean treatment duration period of nine months. Following initiation of treatment with setrusumab, 20 patients experienced no radiographic-confirmed fractures, and four patients experienced seven radiographic-confirmed fractures in five separate events. These fractures exclude fractures of the fingers, toes, skull, and face consistent with the Phase 3 study design.

The reduction in annualized fracture rates was associated with a clinically meaningful increase in BMD. At the six-month timepoint, treatment with setrusumab resulted in a mean increase in lumbar spine BMD from baseline of 13% at 20 mg/kg (n=11) and 16% at 40 mg/kg (n=8), which represents the same substantial mean improvement in Z-score of +0.85 for both dose groups at six months compared to a combined mean baseline Z-score of -1.68. The small apparent difference in BMD change from baseline is likely related to differences in patients assigned to the two treated groups. There was no statistically significant difference in BMD percent change or Z-score change from baseline between the 20 and 40 mg/kg dosing cohorts.

As of the data cut-off, there were no treatment-related serious adverse events observed in the study. Reported adverse events were generally consistent with those observed in the *ASTEROID* study with infusion-related events and headache determined to be the most common adverse events related to the study drug. There have been no reported hypersensitivity reactions related to setrusumab. There were no notable safety-related differences observed between dosing groups or age groups.

The Phase 3 portion of the study is currently enrolling approximately 195 patients at 50 sites across 12 countries.

Analyst Day updates

On October 16, 2023, we provided the following updates on our development pipeline, including GTX-102 for Angelman syndrome (“AS”), and our gene therapy portfolio, at an Analyst Day held in New York City and by webcast:

- *UX143 (setrusumab) monoclonal antibody for OI*: Interim Phase 2 data from the Phase 2/3 Orbit study show statistically significant decrease in annualized fracture rates following at least six months of treatment.
 - Data presented at the ASBMR 2023 Annual Meeting show that treatment with setrusumab reduced the annualized fracture rate by 67% and this reduction was associated with continuing large and meaningful improvements in BMD.
 - Setrusumab was generally well tolerated with no drug related serious adverse events (“SAEs”) reported and no reports of drug-related hypersensitivity.
 - The Company plans to provide updated Phase 2 data next year.
- *GTX-102 antisense oligonucleotide for AS*: Data from the extension cohorts in the Phase 1/2 study show clinically meaningful improvements in multiple domains.
 - Quantitative data show improvements across multiple clinical domains compared to natural history data, where available, and clinical changes were associated with quantitative changes in EEG.
 - Long term data showed patients who stopped and restarted treatment reacquired previously gained developmental skills when they were re-dosed with the current regimen.
 - There have been no additional treatment-related SAEs, including lower extremity weakness, since November 2022.
 - Data from the dose expansion cohorts on at least 20 patients who have been on therapy for at least six months is anticipated in the first half of 2024.
- *UX701 AAV gene therapy for Wilson disease*: Four of five patients in the lowest-dose cohort of the Phase 1/2/3 Cypress²⁺ study show improvements in tapering standard of care.
 - Four out of five patients in the low-dose Cohort 1 have had reductions in urinary copper and are tapering off of chelators and/or zinc therapy, including two of three earlier treated patients in the Cohort that are now completely off standard therapy.
 - UX701 has been generally well tolerated with no treatment-related SAEs.
 - The seamless study is expected to complete dosing of all three dose cohorts in Stage 1 at the end of 2023 and these data are expected in the first half of 2024.

- The Company also provided updates on other late-stage gene therapy candidates:
 - *DTX401 AAV gene therapy for Glycogen Storage Disease Type Ia (GSDIa)*: The Phase 3 *Glucogene* study was fully enrolled in the first quarter of 2023 and the Company plans to provide preliminary data in the first half of 2024.
 - *UX111 for Sanfilippo syndrome (MPS IIIA)*: The pivotal *Transpher A* study has been fully enrolled and the Company plans to meet with the FDA in the fourth quarter of 2023.
 - *DTX301 AAV gene therapy for Ornithine Transcarbamylase (OTC) Deficiency*: The Phase 3 *Enh3ance* study is expected to complete enrollment in the first half of 2024.

Preliminary financial information for the nine months ended September 30, 2023

Preliminary third quarter revenue (unaudited)

The Company's preliminary unaudited total revenue for the third quarter of fiscal 2023 is \$96 million to \$100 million, preliminary unaudited Crysvida revenue for the third quarter is \$74 million to \$76 million and preliminary unaudited Dojolvi revenue for the third quarter is \$16 million to \$17 million. Third quarter Crysvida revenue in the United States was impacted by a decrease in channel inventory related to Kyowa Kirin Co., Ltd.'s ("KKC") change from Ultragenyx labeled product to KKC's labeled product as part of the transition of North America commercialization responsibilities for Crysvida from the Company to KKC. This one-time change occurred in the third quarter, and the Company expects Crysvida channel inventories to increase to more normal levels at the end of the year.

Preliminary third quarter ending cash position (unaudited)

Cash, cash equivalents, and marketable debt securities were approximately \$525 million as of September 30, 2023.

The amounts set forth under "Preliminary Third Quarter Revenue" and "Preliminary Third Quarter Ending Cash Position (unaudited)" are preliminary, have not been audited and are subject to change pending completion of our unaudited financial statements for the quarter ended September 30, 2023. Additional information and disclosures would be required for a more complete understanding of our financial position and results of operations as of September 30, 2023. Our independent registered public accounting firm has not audited, reviewed or performed any procedures with respect to these preliminary results and, accordingly, does not express an opinion or any other form of assurance about them.

Our corporate information

We were incorporated in California in April 2010 and we reincorporated in Delaware 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.

The Offering

Common stock offered by us 8,333,334 shares.

Pre-funded warrants offered by us We are also offering, in lieu of common stock to certain investors, pre-funded warrants to purchase 1,666,722 shares of our common stock. The purchase price of each pre-funded warrant equals the price per share at which the shares of our common stock are being sold to the public in this offering, minus \$0.001, which is the exercise price of each pre-funded warrant per share. Each pre-funded warrant will be exercisable at any time after the date of issuance of such pre-funded warrant, subject to an ownership limitation. See “Description of pre-funded warrants.” This prospectus supplement also relates to the offering of the shares of our common stock issuable upon the exercise of such pre-funded warrants.

Underwriters’ option to purchase additional shares We have granted the underwriters an option, which is exercisable within 30 days after the date of this prospectus supplement, to purchase up to an additional 1,500,000 shares of our common stock.

Common stock to be outstanding after this offering 79,798,758 shares (81,298,758 shares if the underwriters exercise their option to purchase additional shares in full), in each case, excluding any shares of common stock issuable upon the exercise of the pre-funded warrants.

Use of proceeds We estimate that the net proceeds to us from this offering will be approximately \$283.5 million, or approximately \$326.1 million if the underwriters exercise their option to purchase additional shares in full, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds of the offering to continue to advance our late-stage clinical programs, support global commercial launch activities, and advance our preclinical pipeline through Investigational New Drug applications into clinical development. We also intend to use a portion of the net proceeds to continue investing in early-stage research capabilities to promote our pipeline growth and to further develop and support our general infrastructure. Finally, we may use a portion of the net proceeds to in-license, acquire, or invest in additional businesses, technologies, products, or assets, and to fund the development of such new acquired or in-licensed products and technologies. Any remaining proceeds will be used for other ongoing research and development, working capital and other general corporate purposes.

Risk factors

You should read the “Risk Factors” section of this prospectus supplement 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”

There is no established trading market for the pre-funded warrants, and we do not expect a market to develop. We do not intend to list the pre-funded warrants on the Nasdaq Global Select Market, any other national securities exchange or any other nationally recognized trading system.

The number of shares of common stock to be outstanding after this offering is based on 71,465,424 shares of our common stock outstanding as of June 30, 2023 and excludes the following:

- 10,792,294 shares of common stock issuable upon the exercise of outstanding stock options as of June 30, 2023 having a weighted-average exercise price of \$66.89 per share;
- 3,502,104 shares of common stock issuable upon the vesting of restricted stock units outstanding as of June 30, 2023;
- 525,100 shares of common stock issuable upon the vesting of performance stock units outstanding as of June 30, 2023;
- 4,601,218 shares of common stock reserved for issuance pursuant to future equity awards under our 2023 Incentive Plan (the “2023 Plan”) as of June 30, 2023, as well as any future increases in the number of shares of our common stock reserved for future issuance under this plan;
- 6,694,377 shares of common stock reserved for future issuance under our Amended & Restated 2014 Employee Stock Purchase Plan (the “2014 ESPP”) as of June 30, as well as any future increases in the number of shares of our common stock reserved for future issuance under the 2014 ESPP; and
- 515,719 shares of common stock reserved for future issuance under our Employment Inducement Plan (the “Inducement Plan”).

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

- assumes no exercise of the pre-funded warrants being offered hereby;
- assumes that the underwriters do not exercise their option to purchase additional shares; and
- assumes no exercise of outstanding options or vesting of restricted stock units or performance stock units after June 30, 2023.

Risk factors

Investing in our common stock and pre-funded warrants involves a high degree of risk. Before investing in our common stock or pre-funded warrants, 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 and pre-funded warrants could decline, and you may lose all or part of your investment.

Risks related to this offering

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, certificates of deposit or government securities. These investments may not yield a favorable return to our stockholders.

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

Investors purchasing shares of common stock or pre-funded warrants 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 or pre-funded warrants in this offering will incur immediate dilution of \$27.37 per share, based on the public offering price of \$30.00 per share and \$29.9990 per pre-funded warrant and our as-adjusted net tangible book value as of June 30, 2023 after giving effect to this offering. For information on how the foregoing amounts were calculated, see the section entitled "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, the vesting of the performance stock units, restricted stock units and the exercise of any outstanding options to purchase shares of our common stock or pre-funded 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

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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, Goldman Sachs & Co. LLC, BofA Securities, Inc., and Cowen and Company, LLC. Other than any shares held by our directors and executive officers subject to lock-up agreements with the underwriters, all of our 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, Goldman Sachs & Co. LLC, BofA Securities, Inc., 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.

There is no public market for the pre-funded warrants in this offering.

There is no established public trading market for the pre-funded warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the pre-funded warrants on any national securities exchange or other nationally recognized trading system. Without an active market, the liquidity of the pre-funded warrants will be limited.

Any holder of the pre-funded warrants will have no rights as a common stockholder until such holder exercises its pre-funded warrant and acquires our common stock.

Until the holder of each pre-funded warrants exercise its pre-funded warrant and acquires shares of our common stock, such holder will have no rights with respect to the shares of our common stock underlying such pre-funded warrant. Upon exercise of their respective pre-funded warrant, the holder will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

A significant holder or beneficial holder of our common stock may not be permitted to exercise the pre-funded warrant that it holds.

A holder of a pre-funded warrant will not be entitled to exercise any portion of the pre-funded warrant that, upon giving effect to such exercise, would cause the aggregate number of shares of our common stock beneficially owned by such holder (together with its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) to exceed 4.99% of the total number of then issued and outstanding shares of common stock, as such percentage ownership is determined in accordance with the terms of the pre-funded warrant and subject to such holder's rights under the pre-funded warrant to increase or decrease such percentage to any other percentage not in excess of 19.99% upon at least 61 days' prior notice from such holder to us. As a result, you may not be able to exercise your pre-funded warrant for shares of our common stock at a time when it would be financially beneficial for you to do so. In such a circumstance, you could seek to sell your pre-funded warrant to realize value, but you may be unable to do so in the absence of an established trading market.

Our preliminary financial information represent management's current reconciliation and are subject to change.

The preliminary financial information contained in "Prospectus Supplement Summary—Recent Developments—Preliminary Financial Information for the Nine Months Ended September 30, 2023" represents only preliminary

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financial results and is based on information available to management as of the date of this prospectus supplement and these expectations could change. Our actual financial results as of, and for the nine months ended, September 30, 2023 are subject to the completion of our financial statements as of such date and for such period. Such actual financial results will not be available until after this offering is completed. Our actual financial results as of, and for the nine months ended, September 30, 2023 may differ materially from the preliminary financial results we have provided as a result of completion of our final adjustments, review by our independent registered public accountants and other developments arising between now and the time that our financial results for such period are finalized. Our independent registered public accountants have not completed their review with respect to such preliminary financial results and accordingly do not express an opinion or any other form of assurance with respect thereto. Complete results as of, and for the nine months ended, September 30, 2023 will be included in our Quarterly Report on Form 10-Q for the nine months ended September 30, 2023. See the other risks described in this section and “Cautionary Note Regarding Forward-Looking Statements” for additional information regarding factors that could result in differences between these preliminary and the actual financial results we will report for the nine months ended September 30, 2023.

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,” “forecast,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would,” or the negative of these words, or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- our 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 products and product candidates;
- our expectations regarding the potential market size and the size of the patient populations for our products and product candidates, if approved for commercial use;
- estimates of our expenses, 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, products and product candidates and the integration and performance of any businesses we have acquired or may acquire;
- 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 products 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 contract research organizations, contract manufacturing organizations, suppliers, and distributors;
- our use of proceeds from this offering;
- our financial performance and the expansion of our organization;
- our ability to obtain supply of our products and product candidates;
- the scalability and commercial viability of our manufacturing methods and processes;
- developments and projections relating to our competitors and our industry;
- stagnating or worsening business and economic conditions and increasing geopolitical instability, including inflationary pressures, general economic slowdown or a recession, rising interest rates, foreign exchange rate volatility, financial institution instability, and changes in monetary policy; and

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- other risks and uncertainties, including those listed under the section entitled “Risk Factors” or incorporated by reference herein.

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 discussed under the section entitled “Risk Factors” and elsewhere and incorporated by reference in this prospectus supplement and the accompanying 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 supplement and the accompanying prospectus also contain or incorporate by reference 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 such industry, business, market, and other data from reports, research surveys, studies, and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data, and similar sources.

Use of proceeds

We estimate that the net proceeds to us from the issuance and sale of shares of our common stock and pre-funded warrants in this offering will be approximately \$283.5 million, after deducting the 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 \$326.1 million, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. We will receive nominal proceeds, if any, upon exercise of the pre-funded warrants.

We intend to use the net proceeds of the offering to continue to advance our late-stage clinical programs, support global commercial launch activities, and advance our preclinical pipeline through Investigational New Drug applications into clinical development. We also intend to use a portion of the net proceeds to continue investing in early-stage research capabilities to promote our pipeline growth and to further develop and support our general infrastructure. Finally, we may use a portion of the net proceeds to in-license, acquire, or invest in additional businesses, technologies, products, or assets, and to fund the development of such new acquired or in-licensed products and technologies. Any remaining proceeds will be used for other ongoing research and development, 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 investment-grade, interest-bearing securities; certificates of deposit; or government securities.

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 or per pre-funded warrant 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 June 30, 2023 was approximately \$(73.6) million, or \$(1.03) per share.

Dilution per share to new investors represents the difference between the amount per share paid by purchasers of shares of common stock and pre-funded warrants to purchase shares of our 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 shares of common stock and pre-funded warrants to purchase shares of our common stock in this offering by us at a public offering price of \$30.00 per share and \$29.9990 per pre-funded warrant (which equals the public offering price per share of common stock less the \$0.001 per share exercise price of each such pre-funded warrant) (and excluding shares of common stock issued and any proceeds received upon exercise of the pre-funded warrants or any resulting accounting associated with the pre-funded warrants), 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 June 30, 2023 would have been \$209.9 million, or \$2.63 per share. This represents an immediate increase in net tangible book value of \$3.66 per share to existing stockholders and an immediate dilution of \$27.37 per share to investors participating in this offering.

Public offering price per share		\$30.00
Historical net tangible book value per share as of June 30, 2023	\$(1.03)	
Increase in as-adjusted net tangible book value per share attributable to new investors	3.66	
As-adjusted net tangible book value per share after this offering		2.63
Dilution per share to investors participating in this offering		\$27.37

If the underwriters exercise their option in full to purchase an additional 1,500,000 shares of common stock (and excluding shares of common stock issued and any proceeds received upon exercise of the pre-funded warrants or any resulting accounting associated with the pre-funded warrants), our as-adjusted net tangible book value per share after this offering would be approximately \$3.11 per share, representing an increase of as-adjusted net tangible book value of \$4.14 per share to our existing stockholders and an immediate dilution of approximately \$26.89 per share to investors participating in this offering.

The discussion and table above assume no exercise of the pre-funded warrants sold in this offering. Investors who purchase common stock upon the exercise of the pre-funded warrants offered hereby may experience dilution depending on our net tangible book value at the time of exercise.

The foregoing calculations exclude the following shares as of June 30, 2023:

- 10,792,294 shares of common stock issuable upon the exercise of outstanding stock options as of June 30, 2023 having a weighted-average exercise price of \$66.89 per share;
- 3,502,104 shares of common stock issuable upon the vesting of restricted stock units outstanding as of June 30, 2023;
- 525,100 shares of common stock issuable upon the vesting of performance stock units outstanding as of June 30, 2023;

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- 4,601,218 shares of common stock reserved for issuance pursuant to future equity awards under our 2023 Plan as of June 30, 2023, as well as any future increases in the number of shares of our common stock reserved for future issuance under this plan;
- 6,694,377 shares of common stock reserved for future issuance under our 2014 ESPP, as of June 30, 2023, as well as any future increases in the number of shares of our common stock reserved for future issuance under the 2014 ESPP; and
- 515,719 shares of common stock reserved for future issuance under our Inducement Plan.

To the extent that outstanding rights to acquire common stock are converted, exercised or settled, investors purchasing our common stock in this offering will experience further dilution. 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 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.

Description of pre-funded warrants

The following summary of certain terms and provisions of the pre-funded warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the pre-funded warrant, the form of which will be filed as an exhibit to a Current Report on Form 8-K in connection with this offering and incorporated by reference into the registration statement of which this prospectus supplement forms a part. Prospective investors should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of the pre-funded warrants.

Duration and exercise price

Each pre-funded warrant offered hereby will have an initial exercise price per share equal to \$0.001. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price.

Exercisability

The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of such holder's pre-funded warrant to the extent that the holder would own more than 4.99% of the outstanding shares of common stock immediately after exercise, except that upon at least 61 days' written prior notice from the holder to us, the holder may increase or decrease the amount of ownership of outstanding shares of common stock after exercising the holder's pre-funded warrants up to 19.99% of the number of shares of common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. No fractional shares of common stock will be issued in connection with the exercise of a pre-funded warrant. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

Cashless exercise

In lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the pre-funded warrants.

Fundamental transactions

In the event of any fundamental transaction, as described in the pre-funded warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our shares of common stock, then upon any subsequent exercise of a pre-funded warrant, the holder will have the right to receive as alternative consideration, for each share of common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or of our company, if it is the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of shares of common stock for which the pre-funded warrant is exercisable immediately prior to such event.

Transferability

Subject to applicable laws, the pre-funded warrants may be offered for sale, sold, transferred or assigned without our consent. The pre-funded warrants will be held in definitive form by the warrant agent. The ownership of the pre-funded warrants and any transfers of the pre-funded warrants will be registered in a warrant register maintained by the warrant agent. We will initially act as warrant agent.

Exchange listing

There is no established trading market for the pre-funded warrants. We do not intend to list the pre-funded warrants on any securities exchange or nationally recognized trading system.

Right as a stockholder

Except as otherwise provided in the pre-funded warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the pre-funded warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until such pre-funded warrants holders exercise their pre-funded warrants.

Underwriting

We are offering the shares of common stock and pre-funded warrants described in this prospectus supplement through a number of underwriters. J.P. Morgan Securities LLC, Goldman Sachs & Co. LLC, BofA Securities, Inc., 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 and pre-funded warrants listed next to its name in the following table:

Name	Number of shares	Number of pre-funded warrants
J.P. Morgan Securities LLC	2,916,668	583,353
Goldman Sachs & Co. LLC	2,250,000	450,015
BofA Securities, Inc.	1,583,333	316,677
Cowen and Company, LLC	1,583,333	316,677
Total	8,333,334	1,666,722

The underwriters are committed to purchase all of the shares of common stock and pre-funded warrants offered by us if they purchase any shares or pre-funded warrants. 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 shares of common stock and pre-funded warrants 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 \$0.96750 per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to \$0.32250 per share from the initial public offering price. After the initial offering of the securities to the public, the offering price and other selling terms may be changed by the underwriters. The offering of the securities 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 securities made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to 1,500,000 additional shares of common stock from us. The underwriters have 30 days from the date of this prospectus supplement 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.

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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, or the public offering price per pre-funded warrant less the amount paid by the underwriters to us per pre-funded warrant, as the case may be. The underwriting fee is \$1.6125 per share of common stock and per pre-funded warrant. The following table shows the per share and per pre-funded warrant 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.

Name	Without option to purchase additional shares exercise	With full option to purchase additional shares exercise
Per Share	\$ 1.6125	\$ 1.6125
Per pre-funded warrant	\$ 1.6125	\$ 1.6125
Total	\$ 16,125,001	\$ 18,543,751

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 approximately \$400,000. The underwriters have agreed to reimburse us for a certain portion of the expenses in connection with this offering. We have agreed to reimburse the underwriters for certain of their expenses in an amount up to \$15,000.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the 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, Goldman Sachs & Co. LLC, BofA Securities, Inc., 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 and pre-funded warrants to be sold hereunder, (ii) any shares of our common stock issued upon the vesting of performance stock units, 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

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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 have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons, 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, Goldman Sachs & Co. LLC, BofA Securities, Inc., 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) (collectively with the common stock, the lock-up securities) (2) enter into any swap or other agreement or transaction that transfers, in whole or in part, any of the economic consequences of ownership of the lock-up securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of lock-up securities, in cash or otherwise, (3) make any demand for or exercise any right with respect to the registration of any lock-up securities, or (4) publicly disclose the intention to do any of the foregoing.

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, provided that any filing required under the Exchange Act made in connection with such transfer shall clearly indicate in the footnotes thereto that the filing relates to a transfer made as a bona fide gift;
- to an immediate family member or 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), any such transfer shall not involve a disposition for value; and provided, further, that no filing by any such party under the Exchange Act or other public announcement shall be required (other than for transfers made as a bona fide gift) 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 (i) 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

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pursuant to a trading plan pursuant to Rule 10b5-1 and (ii) no amendment shall be made that would have the effect of increasing the number of shares to be sold under such trading plan during the restricted period;

- 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 voluntarily made by or on behalf of the party subject to the lock-up restrictions regarding the establishment of such plan during the restricted period;
- 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 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 transfer or surrender;
- 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, divorce decree or separation agreement, 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

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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". We do not intend to list the pre-funded warrants on the Nasdaq Global Select Market or any other national securities exchange or nationally recognized trading system.

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.

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.

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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.

Notice to prospective investors in European Economic Area and the United Kingdom

In relation to each Member State of the European Economic Area and the United Kingdom (each a "Relevant State"), no securities have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the securities which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that offers of securities may be made to the public in that Relevant State at any time under the following exemptions under the Prospectus Regulation:

- A. to any legal entity which is a qualified investor as defined under the Prospectus Regulation;
- B. to fewer than 150 natural or legal persons (other than qualified investors as defined under the Prospectus Regulation), subject to obtaining the prior consent of the underwriters; or
- C. in any other circumstances falling under Article 1(4) of the Prospectus Regulation,

provided that no such offer of securities shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation and each person who initially acquires any securities or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with each of the underwriters and the Company that it is a "qualified investor" within the meaning of Article 2(e) of the Prospectus Regulation. In the case of any securities being offered to a financial intermediary as that term is used in the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the securities 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 securities to the public other than their offer or resale in a Relevant State to qualified investors as so defined or in circumstances in which the prior consent of the underwriters have been obtained to each such proposed offer or resale.

For the purpose of the above provisions, the expression “an offer to the public” in relation to shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any securities to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129.

Notice to prospective investors in United Kingdom

In the United Kingdom, none of this prospectus supplement, the accompanying prospectus and any related free writing prospectus is a prospectus for the purposes of Regulation (EU) 2017/1129 as it forms part of domestic law in the United Kingdom by virtue of the European Union (Withdrawal) Act 2018, as amended by the European Union (Withdrawal Agreement) Act 2020 (the “EUWA”) (the “UK Prospectus Regulation”). This prospectus supplement, the accompanying prospectus and any related free writing prospectus have been prepared on the basis that any offer of securities in the United Kingdom will be made pursuant to an exemption under the UK Prospectus Regulation from the requirement to publish a prospectus for offers of securities. Accordingly any person making or intending to make an offer in the United Kingdom of securities which are the subject of the offering contemplated in this prospectus supplement, the accompanying prospectus and any related free writing 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 Section 85 of the United Kingdom’s Financial Services and Markets Act 2000, as amended (the “FSMA”) in relation to such offer. Neither the Company nor the underwriters have authorized, nor do they authorize, the making of any offer of securities in circumstances in which an obligation arises for the Company or the underwriters to publish a prospectus for such offer.

No securities have been offered or will be offered pursuant to the offering to the public in the United Kingdom prior to the publication of a prospectus in relation to such securities which has been approved by the Financial Conduct Authority, except that the securities may be offered to the public in the United Kingdom at any time:

- A. to any legal entity which is a qualified investor as defined under Article 2 of the U.K. Prospectus Regulation;
- B. to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the U.K. Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or
- C. in any other circumstances falling within Section 86 of the FMSA.

provided that no such offer of such securities shall require us or any underwriter to publish a prospectus pursuant to Section 85 of the FSMA and each person who initially acquires any securities or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with each of the representatives and the Company that it is a “qualified investor” within the meaning of Article 2(e) of the UK Prospectus Regulation. In the case of any securities being offered to a financial intermediary as that term is used in Article 5 of the UK Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the securities 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 securities to the public other than their offer or resale in the United Kingdom to qualified investors as so defined or in circumstances in which the prior consent of the representatives have been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression an “offer to the public” in relation to the securities in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any securities to be offered so as to enable an investor to decide to purchase or subscribe for any securities.

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The communication of this prospectus supplement, the accompanying prospectus, any related free writing prospectus and any other document or materials relating to the issue of the securities offered hereby is not being made, and such documents and/or materials have not been approved, by an authorized person for the purposes of section 21 of the FSMA. Accordingly, such documents and/or materials are not being distributed to, and must not be passed on to, the general public in the United Kingdom. This document and such other documents and/or materials are for distribution only to persons who (i) have professional experience in matters relating to investments and who fall within the definition of investment professionals (as defined in Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Financial Promotion Order")), (ii) fall within Article 49(2)(a) to (d) of the Financial Promotion Order, (iii) are outside the United Kingdom or (iv) are any other persons to whom it may otherwise lawfully be made under the Financial Promotion Order (all such persons together being referred to as "relevant persons") investment or investment activity to which this prospectus supplement, the accompanying prospectus and any related free writing prospectus relates will be engaged in only with, relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this prospectus supplement, the accompanying prospectus or any related free writing prospectus or any of their contents.

Any invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) in connection with the issue or sale of the securities may only be communicated or caused to be communicated in circumstances in which Section 21(1) of the FSMA does not apply to the Company.

All applicable provisions of the FSMA must be complied with in respect to anything done by any person in relation to the securities in, from or otherwise involving the United Kingdom.

Notice to prospective investors in Switzerland

The securities 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 securities 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 securities 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 securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA ("FINMA"), and the offer of securities 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 securities.

Notice to prospective investors in Canada

The securities 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 securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

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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.

Notice to prospective investors in Japan

The securities 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 securities 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.

Notice to prospective investors in Hong Kong

The securities 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. 571 of the Laws of Hong Kong) (the "SFO") of Hong Kong and any rules made thereunder; 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 (the "CO") or which do not constitute an offer to the public within the meaning of the CO. No advertisement, invitation or document relating to the securities 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 securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made thereunder.

Notice to prospective investors in Singapore

Singapore SFA Product Classification—In connection with Section 309B of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time (the "SFA") and the CMP Regulations 2018, unless otherwise specified before an offer of Notes, the Issuer has determined, and hereby notifies all relevant persons (as defined in Section 309A(1) of the SFA), that the Notes are "prescribed capital markets products" (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Each underwriter has acknowledge that this prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each underwriter has represented and agreed that it has not offered or sold any securities or caused the securities to be made the subject of an invitation for subscription or purchase and will not offer or sell any securities or cause the securities to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this

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prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the securities, whether directly or indirectly, to any person in Singapore other than:

- (a) to an institutional investor (as defined in Section 4A of the SFA pursuant to Section 274 of the SFA);
- (b) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA; or
- (c) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the securities 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 or securities-based derivatives contracts (each term as defined in Section 2(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 securities pursuant to an offer made under Section 275 of the SFA except:

- (a) to an institutional investor or to a relevant person, 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 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018 of Singapore.

Notice to prospective investors in Dubai International Financial Centre

This document relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority ("DFSA"). This document is intended for distribution only to persons of a type specified in the Markets Rules 2012 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 document nor taken steps to verify the information set forth herein and has no responsibility for this document. The securities to which this document relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this document you should consult an authorized financial advisor.

In relation to its use in the DIFC, this document is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

Notice to prospective investors in Australia

This prospectus:

- does not constitute a disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (the “Corporations Act”);
- has not been, and will not be, lodged with the Australian Securities and Investments Commission (“ASIC”), as a disclosure document for the purposes of the Corporations Act and does not purport to include the information required of a disclosure document for the purposes of the Corporations Act; and
- may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, available under section 708 of the Corporations Act (“Exempt Investors”).

The securities may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the securities may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any securities may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the securities, you represent and warrant to us that you are an Exempt Investor.

As any offer of securities under this document will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may, under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the securities you undertake to us that you will not, for a period of 12 months from the date of issue of the securities, offer, transfer, assign or otherwise alienate those securities to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

Notice to prospective investors in China

This prospectus will not be circulated or distributed in the PRC and the securities will not be offered or sold, and will not be offered or sold to any person for re-offering or resale directly or indirectly to any residents of the PRC except pursuant to any applicable laws and regulations of the PRC. Neither this prospectus any advertisement or other offering material may be distributed or published in the PRC, except under circumstances that will result in compliance with applicable laws and regulations.

Notice to prospective investors in Korea

The securities have not been and will not be registered under the Financial Investments Services and Capital Markets Act of Korea and the decrees and regulations thereunder (the “FSCMA”), and the securities have been and will be offered in Korea as a private placement under the FSCMA. None of the securities may be offered, sold or delivered directly or indirectly, or offered or sold to any person for re-offering or resale, directly or indirectly, in Korea or to any resident of Korea except pursuant to the applicable laws and regulations of Korea, including the FSCMA and the Foreign Exchange Transaction Law of Korea and the decrees and regulations thereunder (the “FETL”). Furthermore, the purchaser of the securities shall comply with all applicable regulatory requirements (including but not limited to requirements under the FETL) in connection with the purchase of the securities. By the purchase of the securities, the relevant holder thereof will be deemed to represent and warrant that if it is in Korea or is a resident of Korea, it purchased the securities pursuant to the applicable laws and regulations of Korea.

Notice to prospective investors in Taiwan

The securities have not been and will not be registered with the Financial Supervisory Commission of Taiwan pursuant to relevant securities laws and regulations and may not be sold, issued or offered within Taiwan through a public offering or in circumstances which constitutes an offer within the meaning of the Securities and Exchange Act of Taiwan that requires a registration or approval of the Financial Supervisory Commission of Taiwan. No person or entity in Taiwan has been authorized to offer, sell, give advice regarding or otherwise intermediate the offering and sale of the securities in Taiwan.

Notice to prospective investors in Saudi Arabia

This document may not be distributed in the Kingdom of Saudi Arabia except to such persons as are permitted under the Offers of Securities Regulations as issued by the board of the Saudi Arabian Capital Market Authority (“CMA”) pursuant to resolution number 2-11-2004 dated 4 October 2004 as amended by resolution number 1-28-2008, as amended (the “CMA Regulations”). The CMA does not make any representation as to the accuracy or completeness of this document and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this document. Prospective purchasers of the securities offered hereby should conduct their own due diligence on the accuracy of the information relating to the securities. If you do not understand the contents of this document, you should consult an authorized financial adviser.

Notice to prospective investors in the United Arab Emirates

The securities have not been, and are not being, publicly offered, sold, promoted or advertised in the United Arab Emirates (including the Dubai International Financial Centre) other than in compliance with the laws of the United Arab Emirates (and the Dubai International Financial Centre) governing the issue, offering and sale of securities. Further, this prospectus does not constitute a public offer of securities in the United Arab Emirates (including the Dubai International Financial Centre) and is not intended to be a public offer. This prospectus has not been approved by or filed with the Central Bank of the United Arab Emirates, the Securities and Commodities Authority or the Dubai Financial Services Authority.

Notice to prospective investors in Bermuda

Securities may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda. Additionally, non-Bermudian persons (including companies) may not carry on or engage in any trade or business in Bermuda unless such persons are permitted to do so under applicable Bermuda legislation.

Notice to prospective investors in the British Virgin Islands

The securities are not being, and may not be offered to the public or to any person in the British Virgin Islands for purchase or subscription by or on behalf of the Company. The securities may be offered to companies incorporated under the BVI Business Companies Act, 2004 (British Virgin Islands) (“BVI Companies”), but only where the offer will be made to, and received by, the relevant BVI Company entirely outside of the British Virgin Islands.

Notice to prospective investors in South Africa

Due to restrictions under the securities laws of South Africa, no “*offer to the public*” (as such term is defined in the South African Companies Act, No. 71 of 2008 (as amended or re-enacted) (the “South African Companies Act”)) is being made in connection with the issue of the securities in South Africa. Accordingly, this document does not, nor is it intended to, constitute a “*registered prospectus*” (as that term is defined in the South African Companies Act) prepared and registered under the South African Companies Act and has not been approved by,

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and/or filed with, the South African Companies and Intellectual Property Commission or any other regulatory authority in South Africa. The securities are not offered, and the offer shall not be transferred, sold, renounced or delivered, in South Africa or to a person with an address in South Africa, unless one or other of the following exemptions stipulated in section 96 (1) applies:

- Section 96 (1) (a) the offer, transfer, sale, renunciation or delivery is to:
- (i) persons whose ordinary business, or part of whose ordinary business, is to deal in securities, as principal or agent;
 - (ii) the South African Public Investment Corporation;
 - (iii) persons or entities regulated by the Reserve Bank of South Africa;
 - (iv) authorised financial service providers under South African law;
 - (v) financial institutions recognised as such under South African law;
 - (vi) wholly-owned subsidiary of any person or entity contemplated in (c), (d) or (e), acting as agent in the capacity of an authorised portfolio manager for a pension fund, or as manager for a collective investment scheme (in each case duly registered as such under South African law); or
 - (vii) any combination of the person in (i) to (vi); or
- Section 96 (1) (b) the total contemplated acquisition cost of the securities, for any single addressee acting as principal is equal to or greater than ZAR1,000,000 or such higher amount as may be promulgated by notice in the Government Gazette of South Africa pursuant to section 96(2)(a) of the South African Companies Act.

Information made available in this prospectus should not be considered as “*advice*” as defined in the South African Financial Advisory and Intermediary Services Act, 2002.

Notice to prospective investors in Israel

This document does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Israeli Securities Law, and has not been filed with or approved by the Israel Securities Authority. In Israel, this prospectus is being distributed only to, and is directed only at, and any offer of the securities is directed only at, (i) a limited number of persons in accordance with the Israeli Securities Law and (ii) investors listed in the first addendum, or the Addendum, to the Israeli Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and “qualified individuals,” each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case, purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors are required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

Legal matters

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

Experts

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2022, and the effectiveness of our internal control over financial reporting as of December 31, 2022, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our consolidated financial statements are incorporated by reference in reliance on Ernst & Young LLP's reports, given on their authority as experts in accounting and auditing.

Where you can find more information

We are subject to the informational requirements of the Exchange Act and in accordance therewith file annual, quarterly and special reports, proxy statements and other information with the SEC, and we have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities offered by this prospectus. This prospectus, which forms part of the registration statement, does not contain all of the information included in the registration statement, including its exhibits and schedules. For further information about us and the securities described in this prospectus, you should refer to the registration statement, its exhibits and schedules and our reports, proxies, information statements and other information filed 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.

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, 2022 filed on February 17, 2023 (and any portions of our Definitive Proxy Statement on [Schedule 14A](#) filed on April 24, 2023 that are incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2022);
2. Our Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2023](#) and [June 30, 2023](#), filed with the SEC on May 5, 2023 and August 4, 2023, respectively;
3. Our Current Reports on Form 8-K filed with the SEC on [March 14, 2023](#), [March 23, 2023](#), [May 17, 2023](#), [June 5, 2023](#) (excluding information in Item 7.01 and Exhibit 99.1 furnished therein), [June 13, 2023](#), [July 6, 2023](#) (excluding information in Item 7.01 and Exhibit 99.1 furnished therein), [July 12, 2023](#) (excluding information in Item 7.01 and Exhibit 99.1 furnished therein), [September 8, 2023](#) and [October 16, 2023](#) (excluding information in Item 2.02, Item 7.01, Exhibit 99.1 and Exhibit 99.2 furnished therein); 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 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, calling or emailing us at the contact information set forth below. We have authorized no one to provide you with any information that differs from that contained in this prospectus supplement. Accordingly, we take no responsibility for any other information that others may give you. 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.

Ultragenyx Pharmaceutical Inc.
60 Leveroni Court
Novato, California 94949
(415) 483-8800

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. Each prospectus supplement will provide the amount, price, terms and plan of distribution relating to the securities to be sold pursuant to such prospectus supplement.

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 10, 2021 was \$167.22 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 3 OF THIS PROSPECTUS AS WELL AS THOSE 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 on the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is February 11, 2021

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We have not authorized anyone to provide you with information other than that contained in or incorporated by reference into this prospectus and any prospectus supplement 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. We are not making offers to sell the securities in any jurisdiction in which an offer or solicitation is not authorized or permitted or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation.

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 statement, 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, 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 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 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 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” or similar references refer to Ultragenyx Pharmaceutical Inc. and its consolidated subsidiaries; 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 own registered trademarks covering the Ultragenyx word mark in the United States and multiple other jurisdictions. In addition, we own a registered trademark in the United States covering a stylized design of our Ultragenyx Pharmaceutical logo. We also own registered trademarks in the United States and other territories relating to our Mepsevii and Dojolvi brand names for vestronidase alfa and triheptanoin, respectively. We additionally have a license from KKC to registered trademarks covering the Crysvida brand name for burosumab in the United States, Canada, Turkey, and various Latin American territories.

ABOUT ULTRAGENYX PHARMACEUTICAL INC.

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 genetic diseases. We target diseases for which the unmet medical need is high, the biology for treatment is clear, and for which there are typically no approved therapies treating the underlying disease.

The patients we seek to treat have diseases with limited or no treatment options, and we recognize that their lives and well-being are dependent upon our efforts to develop new therapies. For this reason, we are passionate about developing these therapies with the utmost urgency and care.

We were incorporated in California in April 2010 and reincorporated in Delaware in June 2011. Our principal executive offices are located at 60 Leveroni Court, Novato, California 94949. Our telephone number is (415) 483-8800 and our e-mail address is info@ultragenyx.com. Our Internet website 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 website and in our periodic and current reports filed with the SEC. Copies of our current and periodic reports filed with the SEC are available online at www.sec.gov and our website 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."

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 as well as 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 and registration statement contain 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 and registration statement are forward-looking statements. In some cases, you can identify forward-looking statements by words such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “forecast,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would,” or the negative of these words, or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- our 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 products and product candidates;
- our expectations regarding the potential market size and the size of the patient populations for our products and product candidates, if approved for commercial use;
- the impact of the COVID-19 pandemic and related health measures on our business, financial condition and liquidity;
- estimates of our expenses, 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, products and product candidates and the integration and performance of any businesses we have acquired or may acquire;
- 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 products 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 contract research organizations, contract manufacturing organizations, suppliers, and distributors;
- our financial performance and the expansion of our organization;
- our ability to obtain supply of our products 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 and registration statement 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

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statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those discussed above under “Risk Factors” and discussed elsewhere and incorporated by reference in this prospectus and registration statement. 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 and registration statement also contain or incorporate by reference 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.

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 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 the 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 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 66,818,520 shares were issued and outstanding as of December 31, 2020.

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.

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 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.

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 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. The paragraphs below describe the general terms and provisions of the debt securities we may issue. 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

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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.

We have summarized below the material provisions of the indenture, 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 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;

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- 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;
- 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

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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.

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. 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 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.

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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.

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.

Amendment, Supplement and Waiver

Without notice to or the consent of any holder, we and the trustee may 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 amend or supplement 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 amended, supplemented or waived, an amendment, supplement or waiver may not:

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- reduce the amount of debt securities of such series whose holders must consent to an amendment, supplement or waiver;
- reduce the rate of or extend the time for payment of interest, including defaulted interest;
- 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 principal of and interest, if any, on 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 principal and interest, if any, on the debt securities of such series to their maturity or redemption; and

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- 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 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 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 it 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 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, 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.

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. Generally, the underwriters' obligations to purchase the securities will be subject to conditions precedent and the underwriters will be obligated to purchase all of the securities if they purchase any of the securities. We may use underwriters with whom we have a material relationship. We will describe the underwriter(s) in the applicable prospectus supplement, naming the underwriter and the nature of any such relationship.

We may authorize underwriters, dealers or agents to solicit offers by certain purchasers to purchase the securities from us at the public offering price set forth in the applicable prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The contracts will be subject only to those conditions set forth in the applicable prospectus supplement, and the applicable prospectus supplement will set forth any commissions we pay for solicitation of these contracts.

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.

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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. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. We make no representation or prediction as to the direction or magnitude of any effect that such transactions may have on the price of the securities. For a description of these activities, see the information under the heading “Underwriting” or “Plan of Distribution” in the applicable prospectus supplement.

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. The legality of the securities 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, 2020, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in this 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, 2020 (including the portions of our proxy statement for our 2021 annual meeting of stockholders incorporated by reference therein);
2. Our Current Reports on Form 8-K filed with the SEC on [January 8, 2021](#) and [January 21, 2021](#); and
3. 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.

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, 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. Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete, and in each instance we refer you to the copy of the contract or document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference.

* * *

8,333,334 shares
Pre-funded warrants to purchase 1,666,722 shares



Common Stock

Prospectus Supplement

Joint Book-Running Managers

J.P. Morgan

Goldman Sachs & Co. LLC

BofA Securities

TD Cowen

October 18, 2023

Calculation of Filing Fee Tables

FORM 424(b)(5)
(Form Type)ULTRAGENYX PHARMACEUTICAL INC.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Fees to Be Paid	Equity	Common stock, \$0.001 par value per share	457(r)	11,500,056 (1)	\$30.00	\$345,000,014(4)	0.0001476	\$50,922
Fees to Be Paid	Equity	Pre-funded warrants to purchase common stock(2)	457(r)	1,666,722	\$29.9990(3)	\$— (3)	0.0001476	\$—
Fees Previously Paid	N/A	N/A	N/A	N/A	N/A	N/A		N/A
Carry Forward Securities	N/A	N/A	N/A	N/A		N/A		
		Total Offering Amounts				\$345,000,014		\$50,922
		Total Fees Previously Paid						N/A
		Total Fee Offsets						N/A
		Net Fee Due						\$50,922

- (1) Assumes exercise in full of the underwriters' option to purchase up to 1,500,000 additional shares of common stock and includes 1,666,722 shares of common stock issuable upon exercise of the pre-funded warrants to purchase common stock.
- (2) Pursuant to Rule 416 under the Securities Act, the pre-funded warrants to purchase common stock being registered hereunder include such indeterminate number of additional shares of common stock as may be issued after the date hereof as a result of share splits, share dividends or similar transactions.
- (3) The registration fee for the pre-funded warrants is being allocated to the shares of common stock issuable upon exercise of the pre-funded warrants.
- (4) Represents the sum of the public offering price of the pre-funded warrants of \$29.9990 per pre-funded warrant and the exercise price of \$0.001 per share issuable pursuant to the pre-funded warrants.