PROSPECTUS

8,695,699 Shares



Common Stock

This prospectus relates to the offer and resale from time to time of up to an aggregate of 8,695,699 shares of our common stock, par value \$0.0001 per share (the "Resale Shares"), of which 1,376,813 shares are issued and outstanding and 7,318,886 shares (the "Warrant Shares") are issuable upon the exercise of pre-funded warrants to purchase shares of common stock, by the selling stockholders named herein, together with any additional selling stockholders listed in a prospectus supplement (together with any of such stockholders' transferees, pledgees, donees or successors).

We are registering the offer and sale of the Resale Shares from time to time by the selling stockholders to satisfy the registration rights they were granted in connection with the issuance of the Resale Shares and pre-funded warrants to purchase Resale Shares (the "Pre-Funded Warrants"). We are not selling any Resale Shares and will not receive any proceeds from the sale of the Resale Shares by the selling stockholders.

The selling stockholders may offer and sell or otherwise dispose of the Resale Shares described in this prospectus from time to time through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. The selling stockholders will bear all underwriting fees, commissions and discounts, if any, attributable to the sales of Resale Shares and any transfer taxes. We will bear all other costs, expenses and fees in connection with the registration of the Resale Shares. See "Plan of Distribution" for more information about how the selling stockholders may sell or dispose of their Resale Shares.

Our common stock is listed on The Nasdaq Global Select Market under the trading symbol "KURA." On February 14, 2024, the last reported sale price of our common stock was \$19.73 per share.

Investing in shares of our common stock involves a high degree of risk. You should review carefully the risks and uncertainties described in the section titled "Risk Factors" on page 4 of this prospectus and any similar section contained in any applicable prospectus supplement or amendment to this prospectus, and under similar headings in the documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is February 14, 2024.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the "SEC") using a "shelf" registration process. Under this shelf process, certain selling stockholders may from time to time sell the shares of common stock described in this prospectus in one or more offerings or otherwise as described under "Plan of Distribution."

This prospectus may be supplemented from time to time by one or more prospectus supplements. Any prospectus supplement may also add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement, you must rely on the information in the prospectus supplement. You should carefully read both this prospectus and any applicable prospectus supplement together with additional information described under the heading "Where You Can Find Additional Information" before deciding to invest in any shares being offered.

Neither we nor the selling stockholders have authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus or in any related prospectus supplement or any free writing prospectus that we have authorized. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. The shares are not being offered in any jurisdiction where the offer is not permitted. You should not assume that the information contained in or incorporated by reference in this prospectus is accurate as of any date other than the respective dates of such document. Our business, financial condition, results of operations and prospects may have changed since those dates

Throughout this prospectus, the terms "we," "us," "our," and our "company" refer to Kura Oncology, Inc.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus, and does not contain all of the information that you need to consider in making your investment decision. For a more complete understanding of our company, you should carefully read and consider the more detailed information included or incorporated by reference in this prospectus and, any applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading "Risk Factors" on page 4 of this prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Overview

We are a clinical-stage biopharmaceutical company committed to realizing the promise of precision medicines for the treatment of cancer. Our pipeline consists of small molecule product candidates that target cancer signaling pathways where there is a strong scientific and clinical rationale to improve outcomes, and we intend to pair them with molecular or cellular diagnostics to identify those patients most likely to respond to treatment. We are conducting clinical trials of three product candidates: ziftomenib, tipifarnib and KO-2806. We also have additional programs that are at a discovery stage. We own global commercial rights to all of our programs and product candidates. We plan to advance our product candidates through a combination of internal development and strategic partnerships while maintaining significant development and commercial rights.

Private Placement

On January 24, 2024, we entered into a securities purchase agreement (the "Securities Purchase Agreement") with the selling stockholders named in this prospectus, pursuant to which we issued and sold to such selling stockholders in a private placement (the "Private Placement") (i) an aggregate of 1,376,813 shares (the "Shares") of our common stock at a purchase price of \$17.25 per share, and (ii), in lieu of Shares, to certain selling stockholders, pre-funded warrants (the "Pre-Funded Warrants") to purchase up to an aggregate of 7,318,886 shares of our common stock (the "Warrant Shares") at a purchase price of \$17.2499 per Pre-Funded Warrant (representing the \$17.25 per Share purchase price less the exercise price of \$0.0001 per Warrant Share). The Pre-Funded Warrants are exercisable at any time after their original issuance and will not expire.

Leerink Partners LLC acted as the sole placement agent for the Private Placement. The Private Placement closed on January 26, 2024. We received aggregate gross proceeds from the Private Placement of approximately \$150.0 million, before deducting estimated offering expenses payable by us.

The Pre-Funded Warrants issued in the Private Placement provide that the holder of the Pre-Funded Warrants will not have the right to exercise any portion of its Pre-Funded Warrants if such holder, together with its affiliates, would beneficially own in excess of 9.99% of the number of shares of our common stock outstanding immediately after giving effect to such exercise (the "Beneficial Ownership Limitation"); provided, however, that the holder may increase or decrease the Beneficial Ownership Limitation by giving 61 days' notice to us, but not to any percentage in excess of 19.99%.

In connection with the Private Placement, we entered into a registration rights agreement ("the Registration Rights Agreement") with the selling stockholders named in this prospectus pursuant to which we agreed to file a registration statement covering the resale of the Shares and the Warrant Shares by no later than February 23, 2024 (the "Filing Deadline"). We agreed to use reasonable efforts to cause such registration statement to become

effective as soon as practicable, but in any event no later than the 30th calendar day following the filing of the registration statement (or, in the event of a "limited" or a "full review" by the SEC, the 45th or 60th day, respectively, following such filing date). We also agreed to use reasonable efforts to keep such registration statement effective until the date the Shares and Warrant Shares covered by such registration statement have been sold or may be resold pursuant to Rule 144 without restriction.

For more information regarding the Private Placement, see our Current Report on Form 8-K filed with the SEC on January 26, 2024 and incorporated herein by reference.

Corporate Information

We were originally incorporated in the State of Delaware in November 2007 under the name "Zeta Acquisition Corp. III," ("Zeta"). Zeta was a "shell" company registered under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), with no specific business plan or purpose until it began operating the business of Kura Oncology, Inc., a privately held company incorporated in Delaware ("Prior Kura"), through a reverse merger transaction on March 6, 2015. Prior Kura was incorporated in the State of Delaware in August 2014 to focus primarily on discovering and developing personalized therapeutics for the treatment of solid tumors and blood cancers.

Our corporate headquarters are located at 12730 High Bluff Drive, Suite 400, San Diego, California 92130, and our telephone number is (858) 500-8800. We also occupy offices in Boston, Massachusetts and lab space in San Diego, California. We maintain a website at www.kuraoncology.com. We do not incorporate by reference into this prospectus the information on, or accessible through, our website, and you should not consider it as part of this prospectus.

The Offering

Common stock offered by the selling stockholders 8,695,699 shares of our common stock, consisting of (i) 1,376,813 Shares and (ii)

7,318,886 Warrant Shares issuable upon the exercise of the Pre-Funded Warrants, all of which were issued by us in the Private Placement pursuant to the Securities Purchase

Agreement.

Terms of the offering Each selling stockholder will determine when and how it will sell the common stock

offered in this prospectus, as described in "Plan of Distribution."

Use of proceeds We will not receive any proceeds from the Shares covered by this prospectus. We will,

however, receive the net proceeds of any Pre-Funded Warrants exercised for cash.

Risk factors See "Risk Factors" on page 4 for a discussion of factors you should carefully consider

before deciding to invest in our common stock.

Nasdaq Global Select Market symbol "KURA"

The selling stockholders named in this prospectus may offer and sell up to 8,695,699 shares of our common stock. Our common stock is currently listed on The Nasdaq Global Select Market under the symbol "KURA." Shares of our common stock that may be offered under this prospectus will be fully paid and non-assessable. We will not receive any of the proceeds of sales by the selling stockholders of any of the common stock covered by this prospectus. We will, however, receive the exercise price of \$0.0001 per share of the Pre-Funded Warrants exercised for cash. Throughout this prospectus, when we refer to the shares of our common stock being

registered on behalf of the selling stockholders for offer and resale, we are referring to the Shares and Warrant Shares issuable upon exercise of the Pre-Funded Warrants that were issued in connection with the Private Placement as described above. When we refer to the selling stockholders in this prospectus, we are referring to the selling stockholders identified in this prospectus and, as applicable, their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks and uncertainties described under the heading "Risk Factors" contained in our most recent Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q, as filed with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC, which are incorporated by reference into this prospectus in their entirety, together with other information in this prospectus, the documents incorporated by reference and any free writing prospectus that we may authorize for use in connection with this offering. The risks described in these documents are not the only ones we face, but those that we consider to be material. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section below titled "Special Note Regarding Forward-Looking Statements."

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents we have filed with the SEC that are incorporated by reference contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and the Exchange Act. These statements relate to future events or to our future operating or financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to, statements about:

- the initiation, cost, timing, progress and results of our research and development activities, clinical trials and preclinical studies;
- the early stage of products under development;
- the timing of and our ability to obtain and maintain regulatory approval of our existing product candidates, any product candidates that we may develop, any clinical holds established by any relevant regulatory bodies and any related restrictions, limitations, and/or warnings in the label of any approved product candidates;
- our plans to research, develop and commercialize our future product candidates;
- our ability to attract collaborators with development, regulatory and commercialization expertise;
- our ability to obtain and maintain intellectual property protection for our product candidates;
- our ability to successfully commercialize our product candidates;
- the size and growth of the markets for our product candidates and our ability to serve those markets;
- the rate and degree of market acceptance of any future products;
- the success of competing drugs that are or become available;
- government regulation;
- regulatory developments in the United States and other countries;
- the performance of our third-party suppliers and manufacturers and our ability to obtain alternative sources of raw materials;
- our ability to obtain additional financing;
- our use of cash, cash equivalents, investments and other resources;
- the accuracy of our estimates regarding expenses, future revenues, capital requirements and the need for additional financing; and
- our ability to attract and retain key management, scientific or clinical personnel.

In some cases, you can identify forward-looking statements by terms such as "anticipates," "believes," "could," "estimates," "intends," "may," "plans," "potential," "will," "would," or the negative of these terms or other similar expressions. These statements reflect our current views with respect to future events and are based on assumptions and are subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements as predictions of future events. We discuss in greater detail many of these risks in our most recent Annual Report on Form 10-K and in our most recent Quarterly Report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC, which are incorporated by reference into this prospectus in their entirety. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

You should read this prospectus, together with the documents we have filed with the SEC that are incorporated by reference, any prospectus supplement and any free writing prospectus that we may authorize completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale or other disposition of shares of our common stock in this offering. The selling stockholders will receive all of the proceeds from the sale of shares of common stock hereunder. Upon any exercise of the Pre-Funded Warrants for cash, the applicable selling stockholder would pay us the exercise price set forth in the Pre-Funded Warrants.

We will bear the out-of-pocket costs, expenses and fees incurred in connection with the registration of shares of our common stock to be sold by the selling stockholders pursuant to this prospectus. Other than registration expenses, the selling stockholders will bear their own broker or similar commissions payable with respect to sales of shares of our common stock.

SELLING STOCKHOLDERS

The shares of common stock being offered by the selling stockholders are those (i) issued to the selling stockholders in the Private Placement and (ii) issuable to the selling stockholders upon exercise of the Pre-Funded Warrants issued in the Private Placement. For additional information regarding the issuance of the shares of common stock and Pre-Funded Warrants, see the section "Prospectus Summary—Private Placement" above. We are registering the resale of shares of common stock issued to the selling stockholders and issuable upon exercise of the Pre-Funded Warrants in order to permit the selling stockholders to offer the shares for resale from time to time. None of the selling stockholders or any persons having control over such selling stockholders has held any position or office with us or our affiliates within the last three years or has had a material relationship with us or any of our predecessors or affiliates within the past three years, other than as a result of the ownership of our shares or other securities.

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to our common stock. Generally, a person "beneficially owns" shares of our common stock if the person has or shares with others the right to vote those shares or to dispose of them, or if the person has the right to acquire voting or disposition rights within 60 days.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. This information has been obtained from the selling stockholders or in Schedules 13G or 13D and other public documents filed with the SEC. The second column lists the number of shares of common stock beneficially owned by each selling stockholder, based on its ownership of shares of common stock and warrants, as of January 31, 2024, assuming exercise of the warrants held by the selling stockholders on that date, subject to any limitations on exercises. The percentage of shares owned prior to and after the offering in the third and sixth columns are based on 76,136,963 shares of common stock outstanding as of January 31, 2024. The fifth and six columns assume the sale of all of the shares offered by the selling stockholders pursuant to this prospectus.

In accordance with the terms of the Registration Rights Agreement, this prospectus generally covers the resale of the sum of (i) the number of shares of common stock issued to the selling stockholders in the Private Placement and (ii) the maximum number of shares of common stock issuable upon exercise of the Pre-Funded Warrants issued in the Private Placement. This maximum amount is determined as if the outstanding Pre-Funded Warrants were exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, subject to adjustment as provided in the Registration Rights Agreement and without regard to any limitations on the exercise of the warrants. Under the terms of the Pre-Funded Warrants, a selling stockholder may not exercise the Pre-Funded Warrants to the extent such exercise would cause such selling stockholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 9.99% of the number of shares of our common stock outstanding following such exercise (for purposes of the denominator, immediately after giving effect to the issuance of shares of common stock to be issued upon the applicable exercise of such Pre-Funded Warrant). The number of shares in the second and fifth columns reflect this limitation. The selling stockholders may sell all, some or none of their shares in this offering. See the section "Plan of Distribution."

Unless otherwise indicated, the address for each selling stockholder is c/o Kura Oncology, Inc., 12730 High Bluff Drive, Suite 400, San Diego, CA 92130.

	Before Offering			After Offering	
Name of Selling Stockholder	Number of Shares Beneficially	Percentage of Shares Beneficially	Maximum Number of Shares	Number of Shares Beneficially	Percentage of Shares Beneficially
	Owned	Owned	Offered	Owned	Owned
Entities Affiliated with EcoR1 Capital, LLC(1)	7,683,597	9.99%	5,797,136	7,683,597	9.99%
Entities Affiliated with BVF Partners L.P.(2)	7,631,926	9.99%	840,585	7,373,228	9.68%
Deerfield Partners, L.P.(3)	5,839,229	7.63%	840,583	4,998,646	6.57%

	Before Offering			After Offering	
	Number of Shares Beneficially	Percentage of Shares Beneficially	Maximum Number of Shares	Number of Shares Beneficially	Percentage of Shares Beneficially
Name of Selling Stockholder	Owned	Owned	Offered	Owned	Owned
Entities Affiliated with Suvretta Capital Management, LLC(4)	7,657,927	9.99%	840,583	7,420,120	9.64%
Invus Public Equities, L.P.(5)	2,069,884	2.72%	376,812	1,693,072	2.22%

- (1) Consists of (i) 5,477,622 shares of common stock and 775,926 shares of common stock underlying other pre-funded warrants held by EcoR1 Capital Fund Qualified, L.P. ("Qualified Fund"), and 1,038,200 shares of common stock that Qualified Fund has the right to acquire pursuant to certain call option contracts, which are immediately exercisable, and (ii) 329,249 shares of common stock held by EcoR1 Capital Fund, L.P. ("Capital Fund"), and together with Qualified Fund, the "EcoR1 Capital Funds"), and 62,600 shares of common stock that Capital Fund has the right to acquire pursuant to certain call option contracts, which are immediately exercisable. EcoR1 Capital, LLC ("EcoR1") is the general partner of the EcoR1 Capital Funds. Oleg Nodelman is the control person of EcoR1 and may be deemed to share voting and investment power over the shares held by the EcoR1 Capital Funds. Mr. Nodelman and EcoR1 both disclaim beneficial ownership of all shares except to the extent of their pecuniary interest. The Pre-Funded Warrants and other pre-funded warrants may not be exercised to the extent such exercise would cause the EcoR1 Capital Funds, together with their affiliates, to beneficially own in excess of 9.99% of the number of shares of our common stock outstanding immediately after giving effect to such exercise. Due to the Beneficial Ownership Limitation, the beneficial ownership in the "Before Offering" columns excludes an aggregate of (i) 5,797,136 Warrant Shares underlying Pre-Funded Warrants and (ii) 1,397,987 shares of common stock underlying other pre-funded warrants, and the beneficial ownership in the "After Offering" columns excludes an aggregate of 1,397,987 shares of common stock underlying other pre-funded warrants. The number in the column "Maximum Number of Shares Offered" consists of (i) 5,469,598 Warrant Shares underlying Pre-Funded Warrants held by Qualified Fund and (ii) 327,538 Warrant Shares underlying Pre-Funded Warrants held by Capital Fund. The address of each entity is 357 Tehama Street #3, San Fr
- Consists of (i) 3,801,949 shares of common stock and 258,698 Warrant Shares underlying Pre-Funded Warrants held by Biotechnology Value Fund, L.P. ("BVF"), (ii) 3,081,519 shares of common stock held by Biotechnology Value Fund II, L.P. ("BVF2"), (iii) 379,147 shares of common stock held by Biotechnology Value Trading Fund OS LP ("BVFOS"), and (iv) 110,613 shares of common stock held by MSI BVF SPV, LLC ("MSI", and together with BVF, BVF2 and BVFOS, the "BVF Funds"). BVF I GP LLC is the general partner of BVF and may be deemed to beneficially own the shares of common stock and Warrant Shares held by BVF. BVF II GP LLC is the general partner of BVF2 and may deemed to beneficially own the shares of common stock and Warrant Shares held by BVF2. BVF Partners OS Ltd. is the general partner of BVFOS and may be deemed to beneficially own the shares of common stock and Warrant Shares held by BVFOS. BVF GP Holdings LLC is the sole member of BVF I GP LLC and BVF II GP LLC and may be deemed to beneficially own the shares of common stock and Warrant Shares held by BVF and BVF2. BVF Partners L.P. is the sole member of BVF Partners OS Ltd. and investment manager of BVF, BVF2, BVFOS and MSI and may be deemed to beneficially own the shares of common stock and Warrant Shares held by BVF, BVF2, BVFOS and MSI. BVF Inc. is the general partner of BVF Partners L.P. and may be deemed to beneficially own the shares of common stock and Warrant Shares beneficially owned by BVF Partners L.P. Mark N. Lampert is director and officer of BVF Inc. and may be deemed to beneficially own the shares of common stock and Warrant Shares beneficially owned by BVF Inc. Each of BVF I GP LLC, BVF II GP LLC, BVF Partners OS Ltd., BVF GP Holdings LLC, BVF Partners L.P. BVF Inc. and Mr. Lampert disclaims beneficial ownership of securities beneficially owned by BVF, BVF2, BVFOS and MSI. The Pre-Funded Warrants may not be exercised to the extent such exercise would cause the BVF Funds, together with their affiliates, to beneficially own in excess of 9.99% of the number of shares of our common stock outstanding immediately after giving effect to such exercise. Due to the Beneficial Ownership Limitation, the beneficial ownership in the "Before Offering" columns excludes an aggregate of 581,887 Warrant shares

- underlying Pre-Funded Warrants. The number in the column "Maximum Number of Shares Offered" consists of (i) 503,833 Warrant Shares underlying Pre-Funded Warrants held by BVF, (ii) 282,760 Warrant Shares underlying Pre-Funded Warrants held by BVF2, (iii) 45,504 Warrant Shares underlying Pre-Funded Warrants held by BVFOS, and (iv) 8,488 Warrant Shares underlying Pre-Funded Warrants held by MSI. The address of each entity is 44 Montgomery Street, 40th Floor, San Francisco, CA 94104.
- (3) Consists of 5,418,936 shares of common stock and 420,293 Warrant Shares underlying Pre-Funded Warrants. The number in the column "Maximum Number of Shares Offered" consists of 420,290 shares of common stock and 420,293 Warrant Shares underlying Pre-Funded Warrants. The general partner of Deerfield Partners, L.P. is Deerfield Mgmt, L.P. Deerfield Management Company, L.P. is the investment manager of Deerfield Partners, L.P. James E. Flynn is the sole member of the general partner of each of Deerfield Mgmt, L.P. and Deerfield Management Company, L.P. Each of Mr. Flynn and the entities listed in this footnote may be deemed to share voting and investment power over the shares held or beneficially owned by such person or entity. Notwithstanding the number of shares reported, the selling stockholder disclaims beneficial ownership of the shares of common stock issuable upon exercise of such Pre-Funded Warrants to the extent that upon such exercise the number of shares beneficially owned by the selling stockholder would exceed the Beneficial Ownership Limit. The address of Deerfield Partners, L.P. is 345 Park Avenue South, 11th Floor, New York, NY 10010.
- (4) Consists of (i) 6,769,763 shares of common stock and 440,105 shares of common stock underlying other pre-funded warrants held by Averill Master Fund, Ltd. ("Averill Master Fund"), and (ii) 369,199 shares of common stock and 78,860 shares of common stock underlying other pre-funded warrants held by Averill Madison Master Fund, Ltd. ("Averill Madison Fund" and, together with Averill Master Fund, the "Averill Funds"). The Pre-Funded Warrants and other pre-funded warrants may not be exercised to the extent such exercise would cause the Averill Funds, together with their affiliates, to beneficially own in excess of 9.99% of the number of shares of our common stock outstanding immediately after giving effect to such exercise. Due to the Beneficial Ownership Limitation, the beneficial ownership in the "Before Offering" columns excludes an aggregate of (i) 260,872 Warrant shares underlying Pre-Funded Warrants and (ii) 341,904 shares of common stock underlying other pre-funded warrants. The number in the column "Maximum Number of Shares Offered" consists of (i) 579,711 shares of common stock and 135,630 Warrant Shares underlying Pre-Funded Warrants held by Averill Madison Fund. Suvretta Capital Management, LLC is the investment manager of the Averill Funds. Aaron Cowen is a control person of Suvretta Capital Management, LLC and as such may be deemed to beneficially own these shares. The address of Suvretta Capital Management, LLC is 540 Madison Avenue, 7th Floor, New York, NY 10022.
- (5) Consists of 2,069,884 shares of common stock held by Invus Public Equities, L.P. ("Invus PE"). The number in the column "Maximum Number of Shares Offered" consists of 376,812 shares of common stock. Invus Public Equities Advisors, LLC ("Invus PE Advisors") controls Invus PE, as its general partner and accordingly, may be deemed to beneficially own the shares of common stock held by Invus PE. The Geneva branch of Artal International S.C.A. ("Artal International") controls Invus PE Advisors, as its managing member and accordingly, may be deemed to beneficially own the shares of common stock held by Invus PE. Artal International Management S.A. ("Artal International Management"), as the managing partner of Artal International, controls Artal International and accordingly, may be deemed to beneficially own the shares of common stock that Artal International may be deemed to beneficially own. Artal Group S.A. ("Artal Group"), as the sole stockholder of Artal International Management, controls Artal International Management and accordingly, may be deemed to beneficially own the shares of common stock that Artal Group and accordingly, may be deemed to beneficially own. Westend S.A. ("Westend"), as the parent company of Artal Group, controls Artal Group and accordingly, may be deemed to beneficially own. Stichting Administratiekantoor Westend (the "Stichting"), as majority shareholder of Westend, controls Westend and accordingly, may be deemed to beneficially own. Mr. Amaury Wittouck, as the sole member of the board of the Stichting, controls the Stichting and accordingly, may be deemed to beneficially own the shares of common stock that the Stichting may be deemed to beneficially own. The address for Invus PE and Invus PE Advisors is 750 Lexington

Avenue, 30th Floor, New York, NY 10022. The address for Artal International, Artal International Management, Artal Group, Westend and Mr. Wittouck is Valley Park, 44, Rue de la Vallée, L-2661, Luxembourg. The address for the Stichting is Claude Debussylaan, 46, 1082 MD Amsterdam, The Netherlands.

PLAN OF DISTRIBUTION

We are registering the shares of our common stock held by the selling stockholders from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of our common stock.

The term "selling securityholders" includes donees, pledgees, transferees or other successors in interest selling securities received after the date of this prospectus from a selling securityholder as a gift, pledge, partnership distribution or other transfer. The selling securityholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. Such sales may be made on the principal trading market for our common stock or any other stock exchange, market or trading facility on which our common stock is traded or in private transactions. These sales may be at fixed or negotiated prices. A selling stockholder may use any one or more of the following methods when selling securities:

- ordinary brokerage transactions and transactions in which the broker dealer solicits purchasers;
- block trades in which the broker dealer will attempt to sell the common stock as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker dealer as principal and resale by the broker dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- distribution to employees, members, limited partners or stockholders of the selling securityholders;
- in transactions through broker dealers that agree with the selling stockholders to sell a specified number of such common stock at a stipulated price per security;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- by pledge to secured debts and other obligations;
- delayed delivery arrangements;
- to or through underwriters or broker-dealers;
- in "at the market" offerings, as defined in Rule 415 under the Securities Act, at negotiated prices, at prices prevailing at the time of sale or at prices related to such prevailing market prices, including sales made directly on a national securities exchange or sales made through a market maker other than on an exchange or other similar offerings through sales agents;
- in privately negotiated transactions;
- in options transactions;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell the shares of our common stock under Rule 144 or any other exemption from registration under the Securities Act, if available, rather than under this prospectus.

In addition, a selling securityholder that is an entity may elect to make a pro rata in-kind distribution of securities to its members, partners or stockholders pursuant to the registration statement of which this prospectus is a part by delivering a prospectus with a plan of distribution. Such members, partners or stockholders would

thereby receive freely tradeable securities pursuant to the distribution through a registration statement. To the extent a distributee is our affiliate (or to the extent otherwise required by law), we may, at our option, file a prospectus supplement in order to permit the distributees to use the prospectus to resell the securities acquired in the distribution.

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of our common stock, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with Financial Industry Regulatory Authority ("FINRA") Rule 5110; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of our common stock in the course of hedging the positions they assume. The selling stockholders may also sell our common stock short and deliver these shares to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these shares. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). The selling stockholders may also pledge securities to a broker-dealer or other financial institution, and, upon a default, such broker-dealer or other financial institution, may effect sales of the pledged securities pursuant to this prospectus (as supplemented or amended to reflect such transaction).

In effecting sales, broker-dealers or agents engaged by the selling stockholders may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from the selling securityholders in amounts to be negotiated immediately prior to the sale.

Any broker-dealers or agents that are involved in selling the securities may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares of our common stock purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each selling stockholder has informed us that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the shares of our common stock.

We are required to pay certain fees and expenses incurred by us incident to the registration of the shares of our common stock. We and the selling stockholders have agreed to indemnify each other against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale shares of our common stock may not simultaneously engage in market making activities with respect to our common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the selling stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of our common stock by the selling stockholders or any other person. We will make copies of this

prospectus available to the selling stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

At the time a particular offer of securities is made, if required, a prospectus supplement will be distributed that will set forth the number of securities being offered and the terms of the offering, including the name of any underwriter, dealer or agent, the purchase price paid by any underwriter, any discount, commission and other item constituting compensation, any discount, commission or concession allowed or reallowed or paid to any dealer, and the proposed selling price to the public.

LEGAL MATTERS

Cooley LLP, San Diego, California, will pass upon the validity of the shares of common stock offered hereby.

EXPERTS

Ernst & Young LLP, an 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, 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 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 ADDITIONAL INFORMATION

This prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov.

We maintain a website at www.kuraoncology.com. Information contained in or accessible through our website does not constitute a part of this prospectus and is not incorporated by reference into this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (Commission File No. 001-37620):

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2022 filed with the SEC on February 23, 2023;
- the information specifically incorporated by reference into our <u>Annual Report</u> on Form 10-K for the fiscal year ended December 31, 2022 from our <u>definitive proxy statement</u> on Schedule 14A (other than information furnished rather than filed) filed with the SEC on April 6, 2023;
- our Quarterly Reports on Form 10-Q for the quarterly period ended March 31, 2023, filed with the SEC on May 10, 2023, for the quarterly period ended June 30, 2023, filed with the SEC on August 9, 2023, and for the quarterly period ended September 30, 2023, filed with the SEC on November 2, 2023;
- our Current Reports on Form 8-K filed with the SEC (other than information furnished rather than filed) on <u>January 9, 2023</u>, <u>January 13, 2023</u>, <u>April 19, 2023</u>, <u>June 2, 2023</u>, <u>June 12, 2023</u>, <u>June 14, 2023</u>, <u>September 1, 2023</u>, <u>December 22, 2023</u>, <u>January 26, 2024</u> and <u>January 30, 2024</u>; and
- the description of our common stock, which is registered under Section 12 of the Exchange Act, in our registration statement on <u>Form 8-A</u>, filed with the SEC on November 4, 2015, including any amendments or reports filed for the purpose of updating such description.

All filings filed by us pursuant to the Exchange Act after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of such registration statement, until we file a post-effective amendment that indicates the termination of the offering of the shares of our common stock made by this prospectus and will become a part of this prospectus from the date that such documents are filed with the SEC. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with this prospectus, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents by writing us at 12730 High Bluff Drive, Suite 400, San Diego, California 92130 Attn: Secretary or by telephoning us at (858) 500-8800.



Common Stock PROSPECTUS