Filed Pursuant to Rule 424(b)(5)
Registration No. 333-294611

PROSPECTUS

Up to $100,000,000

Nkarta, Inc.

Common Stock

We have entered into a sales agreement (the "Sales Agreement") with Stifel, Nicolaus & Company, Incorporated ("Stifel") dated March 25, 2026, relating to the sale of shares of our common stock, par value $0.0001 per share, offered by this prospectus. In accordance with the terms of the Sales Agreement, under this prospectus we may offer and sell shares of our common stock having an aggregate offering price of up to $100,000,000 from time to time through or to Stifel, acting as our agent or principal.

Our common stock is listed on The Nasdaq Global Select Market under the symbol "NKTX." On March 24, 2026, the last reported sale price of our common stock on The Nasdaq Global Select Market was $2.05 per share.

Sales of our common stock, if any, under this prospectus will be made in sales deemed to be an "at-the-market offering" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended (the "Securities Act"). Stifel is not required to sell any specific amount of securities, but will act as our sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Stifel and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to Stifel for sales of common stock sold pursuant to the Sales Agreement will be up to 3.0% of the aggregate gross proceeds of any shares of common stock sold under the Sales Agreement. In connection with the sale of the common stock on our behalf, Stifel will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Stifel will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Stifel with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended (the "Exchange Act").

Investing in our common stock involves a high degree of risk. Please read carefully the section entitled "Risk Factors" on page 6 of this prospectus and the "Risk Factors" section contained in the documents incorporated by reference in this prospectus before investing in our common stock.

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.

Stifel

The date of this Prospectus is April 3, 2026

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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 registration process, we may from time to time sell shares of our common stock having an aggregate offering price of up to $100,000,000 under this prospectus at prices and on terms to be determined by market conditions at the time of the offering.

You should only rely on the information contained in or incorporated by reference in this prospectus. We have not, and Stifel has not, authorized anyone to provide you with different information. We and Stifel take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. If anyone provides you with different or inconsistent information, you should not rely on it. We and Stifel are not making offers to sell the common stock described in this prospectus in any jurisdiction in which an offer or solicitation is not authorized 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.

Before purchasing our common stock, you should carefully read this prospectus together with the additional information described under the heading "Where You Can Find Additional Information" and "Information We Incorporate by Reference." You should assume that the information contained in this prospectus is accurate only as of the date on its cover, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates.

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

References in this prospectus to the terms "we," "us," "our," "the Company" or other similar terms refer to Nkarta, Inc. We do not have any subsidiaries.

CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This prospectus, including the documents incorporated by reference herein, contains "forward-looking statements" within the meaning of Section 27A of the Securities Act, and Section 21E of the Exchange Act. In some cases, you can identify forward-looking statements by the words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "might," "objective," "ongoing," "plan," "predict," "project," "potential," "should," "will," or "would," or the negative of these terms, or other comparable terminology intended to identify statements about the future. Examples of these forward-looking statements include, but are not limited to, statements concerning our financial and business performance, including our future funding requirements, our position, plans, strategies, and timelines (including the potential impact of modified lymphodepleting conditioning on our clinical trials, initiation of further clinical trials and the availability of disclosure of clinical data from our clinical trials) for the continued and future clinical development and commercial potential of our product candidates and the therapeutic potential, accessibility, tolerability, advantages, and safety profile of natural killer ("NK") cell therapies, including NKX019. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. In addition, these statements are based on our management's beliefs and assumptions and on information currently available to our management as of the date of this prospectus. 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. Forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified. The following factors, among others, could cause actual results to differ from those set forth in the forward-looking statement:

- our limited operating history and lack of any products approved for sale;
- our history of significant losses and our expectation of incurring significant losses for the foreseeable future;
- our ability to generate revenue from product sales and achieve or maintain profitability;
- our ability to obtain additional capital, including any resulting dilution to our stockholders, restrictions on our operations or requirements to relinquish rights to our product candidates;
- our dependence upon the success of our chimeric antigen receptor-NK ("CAR NK") cell technology platform and the significant challenges we must overcome to develop, commercialize and manufacture our product candidates;
- our dependence upon the success of our product candidates, and in particular the clinical success of NKX019 and the risks we face that we may fail to develop NKX019 and/or our other product candidates successfully or be unable to obtain regulatory approval for them;
- that clinical data supporting the effectiveness of CD19-targeted cell therapies against autoimmune disease are limited, and CD19-targeted CAR NK cell therapies, such as NKX019, may not provide the same, or any, therapeutic benefit against autoimmune diseases, or be competitive with respect to other CD19-targeted therapies for the treatment of autoimmune disease;
- our ability to enroll and retain patients in clinical trials, which is expensive and time-consuming;
- our ability to obtain and maintain regulatory approval of our product candidates for any of the indications for which we plan to develop them, and any related restrictions, limitations and/or warnings in the label of an approved product;
- our ability to achieve our milestones for development of our product candidates, including the timely conduct of our clinical trials and the availability of clinical data from those trials;
- any changes that may occur in interim, preliminary or "topline" data from our clinical trials;
- that we may be required to halt or delay further clinical development if any of our product candidates, or any competing product candidates, demonstrate relevant, serious adverse events;
- our ability to establish additional collaborations with third parties on commercially reasonable terms, or at all;

- our ability to compete effectively with academic institutions and other biopharmaceutical companies that develop similar or alternatives to cellular immunotherapy product candidates;
- our ability to produce and internally manufacture our product candidates, including our reliance on third parties to manufacture certain of our product candidates;
- our reliance on a sole supplier for certain steps of our manufacturing process;
- our ability to commission and receive regulatory approvals for our manufacturing facilities, which could result in delays to our development plans and limit our ability to develop our product candidates;
- our ability to establish optimal donor and manufacturing parameters for our product candidates;
- our ability to maintain our license agreement with National University of Singapore and St. Jude Children's Research Hospital with respect to certain rights to our product candidates;
- our ability to obtain and maintain patent protection for our products and our ability to operate our business without infringing on the intellectual property rights of others;
- our ability to develop and maintain sales and marketing capabilities if any of our product candidates are approved for marketing and commercialization;
- any regulatory limitations on our product candidates following approval, including NKX019, if and when such approval is granted;
- volatility of the market price of our common stock;
- the concentration of ownership of our shares of common stock among our existing executive officers, directors and principal stockholders, which may prevent new investors from influencing significant corporate decisions;
- disruption to our product development program as a result of computer system interruptions or security breaches of our information systems; and
- other risks and uncertainties discussed in "Risk Factors" in this prospectus supplement and Part I, Item 1A, Risk Factors in our most recent Annual Report on Form 10-K filed with the SEC, as such risk factors may be amended, supplemented or superseded from time to time by our subsequent periodic reports we file with the SEC, including our Quarterly Reports on Form 10-Q, and in any prospectus supplement.

Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. We caution you that the forward-looking statements in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, are made only as of their respective dates. These statements are inherently uncertain, and investors are cautioned not to unduly rely upon these statements.

Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained or incorporated by reference herein, whether as a result of any new information, future events, changed circumstances or otherwise.

You should read this prospectus, including the documents incorporated by reference herein, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus and in the documents we incorporate by reference. This summary does not contain all of the information you should consider before making an investment decision. You should read this entire prospectus carefully, especially the risks of investing in our common stock discussed under "Risk Factors" beginning on page 6 of this prospectus, along with our consolidated financial statements and notes to those consolidated financial statements and the other information incorporated by reference in this prospectus.

Our Business

We are a clinical-stage biopharmaceutical company pioneering the development of allogeneic, off-the-shelf engineered NK cell therapies. Our company was founded on the belief that engineered NK cell therapies can transform the lives of patients by offering therapies that are clinically meaningful, broadly accessible and unencumbered by the safety concerns often associated with other cell therapy approaches. Our lead pipeline program is NKX019, a CAR NK product candidate targeting the CD19 antigen for the treatment of patients with autoimmune diseases. Our CAR NK platform enables an on-demand, off-the-shelf approach involving scaled manufacturing to broaden patient access. We have developed proprietary technologies designed to generate an abundant supply of NK cells, increase NK cell recognition of target antigens, and enhance NK cell fitness to support scalable, off the shelf administration. NKX019 is allogeneic, which means it is produced using cells from a different person than the patient(s) being treated, and it is produced in quantity, then frozen and therefore available for treating patients without delay, unlike autologous cell therapies, which are derived from a patient's own cells and must be manufactured as needed for each patient. We believe that engineered NK cells have the potential to be effective and accessible therapies for autoimmune diseases and other diseases, be well tolerated, and avoid some of the toxicities observed with other cell therapies.

NKX019 is currently being studied in an ongoing Phase 1 clinical trial, Ntrust-1, for lupus nephritis and primary membranous nephropathy and a Phase 1 clinical trial, Ntrust-2, for systemic sclerosis, idiopathic inflammatory myopathy, and antineutrophil cytoplasmic antibody-associated vasculitis. NKX019 was initially studied in a Phase 1 clinical trial for certain B-cell malignancies, along with NKX101, a CAR NK product candidate targeting cells that display NKG2D ligands, which was studied in a Phase 1 clinical trial for certain hematologic malignancies. Both oncology studies closed patient enrollment in 2023 and have been deprioritized to direct primary resources to the development of our lead pipeline program, NKX019, for the treatment of autoimmune diseases.

Our modular engineering platform builds on the distinctive biology of NK cells and their role in eradicating aberrant and pathologically transformed cells. Our process starts with mature NK cells derived from healthy donors. We build on the intrinsic ability of these immune cells to identify and kill transformed cells with cell engineering to further enhance their activity. This engineering involves inducing the expression of a chimeric antigen receptor on the surface of an NK cell to enable the cell to recognize specific proteins or antigens that are present on the surface of target cells. Our engineered CAR NK cells consist of an NK cell engineered with a targeting receptor, OX40 costimulatory domain, CD3ζ(zeta) signaling moiety, and a membrane-bound form of the cytokine IL(interleukin)-15.

Corporate Information

Our principal executive offices are located at 1150 Veterans Boulevard, South San Francisco, California 94080, our telephone number is (925) 407-1049, and our website is *www.nkartatx.com*. The information contained on or that can be accessed through our website does not constitute part of this prospectus, except for reports filed with the SEC that are specifically incorporated herein by reference.

THE OFFERING

Issuer	Nkarta, Inc.
Common Stock Offered By Us	Shares of our common stock having an aggregate offering price of up to $100,000,000.
Common Stock to be Outstanding After this Offering	Up to 120,070,977 shares of our common stock, assuming sales of 48,780,487 shares of common stock in this offering at an offering price of $2.05 per share, which was the last reported sale price of our common stock on The Nasdaq Global Select Market on March 24, 2026. The actual number of shares issued will vary depending on the sales prices at which such shares are sold pursuant to this offering.
Manner of Offering	We will sell the shares of our common stock offered hereby by any method permitted that is deemed an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act, through our sales agent, Stifel, Nicolaus & Company, Incorporated. See "Plan of Distribution."
Use of Proceeds	We intend to use the net proceeds from the sale of any common stock offered under this prospectus to fund the research, development and manufacturing of our product candidates, continue research activities related to advancing our NK cell therapy platform, increase our working capital, fund capital expenditures and for general corporate purposes. Pending the specific use of net proceeds as described in this prospectus, we intend to invest the net proceeds to us from this offering in short term investments, including marketable securities. See "Use of Proceeds."
Nasdaq Global Select Market Symbol	"NKTX"
Risk Factors	Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 6 of this prospectus and in the documents incorporated by reference into this prospectus for a discussion of certain factors to consider carefully before deciding to purchase any shares of our common stock.

The number of shares of our common stock to be outstanding after this offering is based on 71,078,531 shares of our common stock outstanding as of December 31, 2025, and excludes the following:

- 11,386,162 shares of common stock issuable upon the exercise of outstanding stock options and vesting of restricted stock units under our 2020 Performance Incentive Plan (the "2020 Plan") and our 2015 Equity Incentive Plan;
- 3,914,097 shares of our common stock reserved for future issuance of equity award grants under our 2020 Plan;
- 2,173,680 shares of common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan; and
- 3,000,031 shares of our common stock issuable upon the exercise of our existing pre-funded warrants.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before deciding to invest in our common stock, you should carefully consider the risks and uncertainties described below together with all of the other information contained in this prospectus and in the documents incorporated by reference herein, including the risks described in "Item 1A. Risk Factors" of our most recent Annual Report on Form 10-K or Quarterly Report on Form 10-Q filed with the SEC, as such risk factors may be amended, supplemented or superseded from time to time by other reports we file with the SEC, including subsequent Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q. If any of these risks actually occur, our business, prospects, operating results and financial condition could suffer materially. In such event, the trading price of our common stock could decline and you might lose all or part of your investment.

Risks Related to our Common Stock

The market price for our common stock may be volatile, which could contribute to the loss of all or part of your investment.

The trading price of our common stock is likely to be highly volatile and subject to wide fluctuations in response to various factors, some of which are beyond our control. Factors affecting the trading price of our common stock, may include but are not limited to: (i) our decision to initiate a clinical study, not to initiate a clinical study or to terminate an existing clinical study; (ii) changes in our strategy, including decisions to deprioritize certain product candidates or change our pipeline focus in the future, as well as cost-containment or cost-optimization initiatives we may undertake; (iii) delays in the announcement of initial data or clinical results from our clinical trials or expectations that such delays may occur; (iv) data or clinical results from our clinical trials; (v) adverse regulatory decisions, including failure to receive regulatory approval for our products; (vi) success or failure of competitive products, immunotherapy drugs or cellular therapies more generally; (vii) adverse developments concerning our manufacturers or our strategic partnerships; (viii) adverse safety or other clinical results, such as those that have occurred in the past or that may occur in the future, related to cellular therapies being developed by other companies that are or may be perceived to be similar to our cellular therapies; (ix) operating and stock price performance of other companies that investors deem comparable to us; (x) sales of substantial amounts of common stock by our directors, executive officers or significant stockholders or the perception that such sales could occur; (xi) general economic and political conditions such as military conflicts, political unrest, recessions, inflationary pressures, interest rates, fuel prices, elections, tariffs and trade policies, drug pricing policies, international currency fluctuations, acts of war or terrorism, and other public health crises, illnesses, epidemics or pandemics; and (xii) other factors discussed in "Item 1A. Risk Factors" of our most recent Annual Report on Form 10-K or Quarterly Report on Form 10-Q filed with the SEC, as such risk factors may be amended, supplemented or superseded from time to time by other reports we file with the SEC, including subsequent Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q, that are incorporated by reference herein.

Any of the factors listed above could materially adversely affect your investment in our common stock, and our common stock may trade at prices significantly below the initial public offering price or the price at which you purchased the stock, which could contribute to a loss of all or part of your investment. In such circumstances the trading price of our common stock may not recover and may experience a further decline.

In addition, broad market and industry factors could materially adversely affect the market price of our common stock, irrespective of our operating performance. The stock market in general, and Nasdaq and the market for biotechnology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of the particular companies affected. The trading prices and valuations of these stocks, and of ours, may not be predictable. For instance, technical factors in the public trading market for our common stock may produce price movements that may or may not comport with macro, industry or company-specific fundamentals, including, without limitation, the sentiment of retail investors (including as may be expressed on financial trading and other social media sites), the amount and status of short interest in our common stock, access to margin debt, and trading in options and other derivatives on our common stock. In addition, the trading prices for common stock of other biopharmaceutical and biotechnology companies may be highly volatile in the event of a pandemic, epidemic, or outbreak of infectious disease, such as an outbreak of a COVID-19 variant. A loss of investor confidence in the market for biotechnology or pharmaceutical stocks or the stocks of other companies which investors perceive to be similar to us, the opportunities in the biotechnology and pharmaceutical market or the stock market in general, could depress our stock price regardless of our business, financial condition, results of operations or growth prospects.

Concentration of ownership of our shares of common stock among our existing executive officers, directors and principal stockholders may prevent new investors from influencing significant corporate decisions.

As of March 18, 2026, our directors and executive officers, and entities affiliated with them, as well as holders of more than 5% of our outstanding shares of common stock, in the aggregate beneficially own approximately 38% of our common stock (based on 71,290,490 shares of our common stock outstanding and 3,000,031 shares that could be issued upon the exercise of pre-funded warrants). These stockholders, acting together, are able to control or significantly influence all matters requiring stockholder approval, including the election and removal of directors and approval of any merger, consolidation or sale of all or substantially all of our assets.

Some of these persons or entities may have interests different than those of our other investors. For example, because many of these stockholders purchased their shares at prices substantially below the price at which shares were sold in the initial public offering ("IPO") and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors, or they may want us to pursue strategies that deviate from the interests of other stockholders.

A significant portion of our total outstanding shares are eligible to be sold into the market, which could cause the market price of our common stock to drop significantly.

Sales of a substantial number of shares of our common stock in the public market, or the perception in the market that the holders of a large number of stockholders intend to sell shares of our common stock, could reduce the market price of our common stock. As of March 18, 2026, we had 74,290,521 shares of common stock outstanding (including pre-funded warrants).

Holders of an aggregate of 9,837,634 shares of common stock, including with respect to shares of our convertible preferred stock that converted into shares of our common stock upon the completion of the IPO, have rights, subject to specified conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders, until such shares can otherwise be sold without restriction under Rule 144 under the Securities Act, or until the rights terminate pursuant to the terms of the stockholders agreement between us and such holders. We have also registered all shares of common stock subject to equity awards issued or reserved for future issuance under our equity compensation plans on registration statements on Form S-8, and these shares can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates under Rule 144 under the Securities Act. Any sales of securities by these stockholders could have a negative impact on the trading price of our common stock.

We are a "smaller reporting company" and we rely on exemptions from certain disclosure and governance requirements applicable to smaller reporting companies, as a result of which our common stock may be less attractive to investors.

We are a "smaller reporting company" as defined by applicable rules of the SEC. We will remain a smaller reporting company and non-accelerated filer until we have a public float of $700 million or more as of the last business day of our most recently completed second fiscal quarter, or a public float of $250 million or more as of the last business day of our most recently completed second fiscal quarter and annual revenues of $100 million or more. Although we no longer qualify as an emerging growth company, as long as we continue to qualify as a smaller reporting company and do not otherwise become an "accelerated filer" or "large accelerated filer," we may continue to rely on scaled disclosure requirements, including the exemption from the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation and certain other disclosures in our periodic reports and proxy statements. We cannot predict if investors will find our common stock less attractive if we rely on smaller reporting company exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

Risks Related to this Offering

We have broad discretion in how we use the net proceeds of this offering, and we may not use these proceeds effectively or in ways with which you agree.

Our management will have broad discretion as to the application of the net proceeds of this offering and could use them for purposes other than those contemplated at the time of this offering. See "Use of Proceeds." Our

stockholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds. Moreover, our management may use the net proceeds for corporate purposes that may not yield profitable results or increase the market price of our common stock.

The common stock offered hereby will be sold in "at the market offerings," and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices and numbers of shares sold, and the Sales Agreement does not specify any required minimum or maximum sales price. Investors may experience a decline in the value of their shares as a result of share sales made at prices lower than the prices they paid.

The actual number of shares we may issue under the Sales Agreement, at any one time or in total, is uncertain and you may experience future dilution as a result of future equity offerings.

Subject to certain limitations in the Sales Agreement and compliance with applicable law, we have the discretion to submit an order to Stifel to sell shares of our common stock at any time throughout the term of the Sales Agreement. The number of shares that are sold by Stifel after we submit any such order will fluctuate based on the market price of the common stock during the sales period and limits we set with Stifel. Because the price per share of each share sold will fluctuate based on the market price of our common stock during the sales period, it is not possible at this stage to predict the number of shares that will be ultimately issued. In addition, in order to raise additional capital, we may offer in the future additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into our common stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of any common stock offered under this prospectus to fund the research, development and manufacturing of our product candidates, continue research activities related to advancing our NK cell therapy platform, increase our working capital, fund capital expenditures and for general corporate purposes.

Pending the specific use of net proceeds as described in this prospectus, we intend to invest the net proceeds to us from this offering in short term investments, including marketable securities.

PLAN OF DISTRIBUTION

We have entered into a Sales Agreement with Stifel, under which we may issue and sell from time to time up to $100,000,000 of our common stock through Stifel as our sales agent. If authorized by us in writing, Stifel may purchase shares of our common stock as principal.

Sales, if any, of our common stock under the Sales Agreement may be made by any method permitted by law deemed to be an "at the market" offering as defined in Rule 415 of the Securities Act, including without limitation sales made on or through The Nasdaq Global Select Market or on any other existing trading market for the common stock, in the over-the-counter market, in privately negotiated transactions or through a combination of any such methods of sale permitted by law.

Stifel will offer our common stock subject to the terms and conditions of the Sales Agreement on a daily basis or as otherwise agreed upon by us and Stifel. We will designate the maximum amount of common stock to be sold through Stifel on a daily basis or otherwise determine such maximum amount together with Stifel. Subject to the terms and conditions of the Sales Agreement, Stifel will use its commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us. We may instruct Stifel not to sell common stock if the sales cannot be effected at or above the price designated by us in any such instruction. Stifel or we may suspend the offering of our common stock being made through Stifel under the Sales Agreement upon proper notice to the other party. Stifel and we each have the right, by giving written notice as specified in the Sales Agreement, to terminate the Sales Agreement in each party's sole discretion at any time.

The aggregate compensation payable to Stifel as sales agent will be up to 3.0% of the gross sales price of the shares sold through it pursuant to the Sales Agreement. We have also agreed to reimburse Stifel up to $50,000 of Stifel's actual outside legal expenses incurred by Stifel in connection with this offering. We estimate that the total expenses of the offering payable by us, excluding commissions payable to Stifel under the Sales Agreement, will be approximately $300,000.

The remaining sales proceeds, after deducting any expenses payable by us and any transaction fees imposed by any governmental, regulatory, or self-regulatory organization in connection with the sales, will equal our net proceeds for the sale of such common stock.

Stifel will provide written confirmation to us following the close of trading on The Nasdaq Global Select Market on each day in which common stock is sold through it as sales agent under the Sales Agreement. Each confirmation will include the number of shares of common stock sold through it as sales agent on that day, the volume weighted average price of the shares sold, the percentage of the daily trading volume and the net proceeds to us.

We will report at least quarterly the number of shares of common stock sold through Stifel under the Sales Agreement, the net proceeds to us and the compensation paid by us to Stifel in connection with the sales of common stock.

Settlement for sales of common stock will occur, unless the parties agree otherwise, on the first trading day (or such earlier day as is industry practice for regular-way trading) following the date on which any sales were made in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

In connection with the sales of our common stock on our behalf, Stifel will be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation paid to Stifel will be deemed to be underwriting commissions or discounts. We have agreed in the Sales Agreement to provide indemnification and contribution to Stifel against certain liabilities, including liabilities under the Securities Act. As sales agent, Stifel will not engage in any transaction that stabilizes our common stock.

Our common stock is listed on The Nasdaq Global Select Market under the symbol "NKTX."

Stifel and/or its affiliates have provided, and may in the future provide, various investment banking and other financial services for us for which services they have received and, may in the future receive, customary fees.

LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus will be passed upon for us by O'Melveny & Myers LLP. Certain matters will be passed upon for Stifel by Willkie Farr & Gallagher LLP.

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, 2025, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC. This prospectus does not contain all of the information included in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public at the SEC's website at *www.sec.gov*. We also maintain a website located at *www.nkartatx.com*, where these SEC filings and other information about the Company can be accessed, free of charge, as soon as reasonably practicable after we electronically file the information with, or furnish it to, the SEC. The information contained on or that can be accessed through our website does not constitute part of this prospectus, except for reports filed with the SEC that are specifically incorporated herein by reference.

INFORMATION WE INCORPORATE BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus. Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent a statement contained in this prospectus or in any other subsequently filed document that is or is deemed to be incorporated by reference in this prospectus modifies or supersedes that statement. We incorporate by reference in this prospectus the following documents and reports we filed with the SEC (other than, in each case, the portions that are deemed to have been furnished and not filed in accordance with SEC rules):

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, filed with the SEC on March 25, 2026;
- the portions of our definitive proxy statement on Schedule 14A that are incorporated by reference into Part III of our Annual Report on Form 10-K for the year ended December 31, 2024, as filed with the SEC on April 21, 2025; and
- the description of our common stock, par value $0.0001 per share, contained in Exhibit 4.3 to our Annual Report on Form 10-K for the year ended December 31, 2025 (filed with the SEC on March 25, 2026), which updated the description thereof contained in our Registration Statement on Form 8-A, filed with the SEC on July 2, 2020 (File No. 001-39370), and any amendments or reports filed for the purpose of updating such description.

We also incorporate by reference the information contained in all other documents that we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, (other than the portions that are deemed to have been furnished and not filed in accordance with SEC rules, unless otherwise indicated therein), on or after the date of the registration statement of which this prospectus forms a part and prior to its effectiveness and prior to the completion of the offering of all securities under this prospectus and any prospectus supplement. The information contained in any such document will be considered part of this prospectus from the date the document is filed with the SEC. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus and any accompanying prospectus supplement to the extent that a statement contained herein or therein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein or therein 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 or any accompanying prospectus supplement. We will provide to each person, including any beneficial owner, to whom a prospectus (or a notice of registration in lieu thereof) is delivered, a copy of any or all of the documents incorporated by reference in this prospectus or any accompanying prospectus supplement (other than an exhibit to these filings, unless the exhibit is specifically incorporated by reference in the document requested) at no cost. Any such request can be made by writing or telephoning us at the following address and telephone number:

Nkarta, Inc.
Attn: Legal Department
1150 Veterans Boulevard
South San Francisco, California 94080
Telephone: (925) 407-1049

Up to $100,000,000

Nkarta, Inc.

Common Stock

PROSPECTUS

Stifel

April 3, 2026