

PROSPECTUS



**Up to \$50,000,000**

## **Common Stock**

We have entered into an equity distribution agreement, or the Equity Distribution Agreement, with Piper Sandler & Co., or Piper Sandler, relating to shares of our common stock offered by this prospectus. In accordance with the terms of the Equity Distribution Agreement, pursuant to this prospectus, we may offer and sell shares of our common stock, \$0.001 par value, having an aggregate offering price of up to \$50,000,000 from time to time through Piper Sandler acting as our agent.

Our common stock is listed on the Nasdaq Global Select Market under the symbol "TCRT." On September 2, 2022, the last reported sale price of our common stock was \$2.90 per share.

Sales of our common stock, if any, under this prospectus will be made in sales deemed to be "at the market offerings" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended, or the Securities Act. Piper Sandler will act as our agent on a best efforts basis and will use commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us, consistent with its normal trading and sales practices, on mutually agreed terms between Piper Sandler and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

Piper Sandler will be entitled to compensation at a fixed commission rate of 3.0% of the gross proceeds of any shares of common stock sold pursuant to the Equity Distribution Agreement. See "*Plan of Distribution*" for additional information regarding compensation to be paid to Piper Sandler. In connection with the sale of the common stock on our behalf, Piper Sandler will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Piper Sandler will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Piper Sandler with respect to certain liabilities, including liabilities under the Securities Act and the Exchange Act of 1934, as amended, or the Exchange Act.

**Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "*Risk Factors*" on page 6 of this prospectus and any similar section contained in any free writing prospectuses 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 these securities or determined if this prospectus is truthful or complete. A representation to the contrary is a criminal offense.**

**Piper Sandler**

**The date of this prospectus is September 7, 2022**

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## ABOUT THIS PROSPECTUS

This prospectus relates to the registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may from time to time sell shares of our common stock. Under this prospectus, we may from time to time sell shares of our common stock having an aggregate offering price of up to \$50,000,000, at prices and on terms to be determined by market conditions at the time of the offering. Before buying any of the common stock that we are offering, we urge you to carefully read this prospectus, any prospectus supplement, and the information incorporated by reference as described under the headings “*Where You Can Find More Information*” and “*Incorporation of Certain Information by Reference*” herein and therein. These documents contain important information that you should consider when making your investment decision.

This prospectus describes the terms of this offering of common stock and also adds to and updates information contained in the documents incorporated by reference into this prospectus. To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference into this prospectus that was filed with the SEC, before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in one of these documents is inconsistent with a statement in another document having a later date (for example, a document incorporated by reference into this prospectus) the statement in the document having the later date modifies or supersedes the earlier statement. The information contained in this prospectus or any free writing prospectus, or incorporated by reference herein or therein, is accurate only as of the respective dates thereof, regardless of the time of delivery of this prospectus or of any sale of our shares of common stock. Our business, financial condition, results of operations and prospects may have changed since those dates.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

We have not, and Piper Sandler has not, authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus, 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 you. This prospectus does not constitute an offer to sell, or a solicitation of an offer to purchase, the securities offered by this prospectus in any jurisdiction to or from any person to whom or from whom it is unlawful to make such offer or solicitation of an offer in such jurisdiction.

Unless the context indicates otherwise, references in this prospectus to “Alaunos,” or the “Company,” “we,” “us,” “our” and similar terms refer to Alaunos Therapeutics, Inc.

We own or have rights to trademarks, service marks and trade names that we use in connection with the operation of our business, including our corporate name, logos and website names. We own the trademarks Alaunos™, Ziopharm® and hunTR™ as well as the graphic trademark found on our website. Other trademarks, service marks and trade names appearing in this prospectus are the property of their respective owners. Solely for convenience, some of the trademarks, service marks and trade names referred to in this prospectus are listed without the ® and ™ symbols, but we will assert, to the fullest extent under applicable law, our rights to our trademarks, service marks and trade names.

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## MARKET, INDUSTRY AND OTHER DATA

This prospectus and the information incorporated by reference herein contains estimates, projections and other information concerning our industry, our business and the markets for certain drugs, including data regarding the estimated size of those markets. Information that is based on estimates, forecasts, projections 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 third parties, industry, medical and general publications, government data and similar sources. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In some cases, we do not expressly refer to the sources from which this data is derived. In that regard, when we refer to one or more sources of this type of data in any paragraph, you should assume that other data of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires.

## PROSPECTUS SUMMARY

This summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our common stock. For a more complete understanding of our company and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus, including the information incorporated by reference in this prospectus and the information included in any free writing prospectus that we have authorized for use in connection with this offering, including the information under the heading “Risk Factors” in this prospectus on page 6 of this prospectus and in the documents incorporated by reference into this prospectus.

### Company Overview

We are a clinical-stage oncology-focused cell therapy company developing adoptive TCR engineered T-cell therapies, or TCR-T, designed to treat multiple solid tumor types in large cancer patient populations with unmet clinical needs. We are leveraging our novel cancer mutation hotspot TCR library and our proprietary, non-viral *Sleeping Beauty* genetic engineering technology to design and manufacture patient-specific cell therapies that target neoantigens arising from common tumor-related mutations in key oncogenic genes, including *KRAS*, *TP53* and *EGFR*. In collaboration with The University of Texas MD Anderson Cancer Center, or MD Anderson, we are currently enrolling patients for a Phase 1/2 clinical trial evaluating ten TCRs reactive to mutated *KRAS*, *TP53* and *EGFR* from our TCR library for the investigational treatment of non-small cell lung, colorectal, endometrial, pancreatic, ovarian and bile duct cancers, which we refer to as our TCR-T Library Phase 1/2 Trial. We announced the dosing of the first patient in this trial in May 2022 and expect to report interim data in the third quarter of 2022.

In the United States, solid tumors represent approximately 90% of new cancer diagnoses. Approximately 1.9 million people are expected to be diagnosed with cancer in the United States in 2022 and approximately 609,000 people are expected to die from cancer in the United States in 2022. Some of the cancers we are targeting in our TCR-T Library Phase 1/2 Trial are expected to be among the most prevalent cancers diagnosed in the United States in 2022. In 2022, it is estimated that 236,740 people will be diagnosed with lung and bronchus cancer, 151,030 will be diagnosed with colorectal cancer, 65,950 people will be diagnosed with endometrial cancer, 62,210 people will be diagnosed with pancreatic cancer, 19,880 people will be diagnosed with ovarian cancer and approximately 7,400 people will be diagnosed with bile duct cancer. Mutations of the *KRAS*, *TP53* and *EGFR* genes are commonly expressed across a wide variety of cancers.

The table below sets forth our multiple solid tumor pipeline programs.

PROGRAM	TARGETS	INDICATION	DISCOVERY	PRECLINICAL	IND-ENABLING	PHASE 1
Library TCR-T cell Therapy <small>(Company Sponsored at MD Anderson)</small>	<i>KRAS</i> , <i>TP53</i> & <i>EGFR</i> Hotspot Mutations	Lung	█	█	█	█
		Colon/rectum	█	█	█	█
		Endometrium	█	█	█	█
		Pancreas	█	█	█	█
		Ovary	█	█	█	█
		Bile Duct	█	█	█	█
mbIL-15 TCR-T cell Therapy	<i>KRAS</i> & <i>TP53</i> Hotspot Mutations	Solid Tumors	█	█	█	█
Undisclosed Targets & Modalities <small>(hunTR™)</small>	Cancer-specific Somatic Mutations	Cancers with Hotspot Mutations	█			

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Our TCR-T program targeting solid tumors consists of:

- *TCR Library*: We have built a TCR library that targets shared hotspot mutations known to be one of the key causes of cancer. These are non-inherited mutations. We have in-licensed from the National Cancer Institute, or the NCI, multiple TCRs derived from third parties that are reactive to mutated *KRAS*, *TP53* and *EGFR*. Our TCR library currently consists of ten TCRs targeting six solid tumor indications.
- *Sleeping Beauty Genetic Engineering Technology*: Our proprietary non-viral genetic engineering technology utilizes a particular enzyme referred to as a transposase to cut and paste donor DNA referred to as a transposon into chromosomes of a T cell using a process called transposition.
- *hunTR™ (human neoantigen T cell Receptor) Discovery Engine*: Our robust and innovative TCR discovery engine enables us to rapidly identify new TCRs to add to our ever-expanding TCR library. Using our *hunTR* discovery engine, we are able to analyze thousands of single T cells simultaneously using state-of-the-art bioinformatics and next generation sequencing. We aim to maximize the breadth of our TCR library by evaluating both helper and killer T cells. The ability to continue discovering new TCRs has the potential to expand the applicable patient population for our ongoing and future clinical trials.

We believe our TCR-T program has several potential advantages over other cell therapy approaches for solid tumors, including CAR-T and tumor-infiltrating lymphocytes, or TIL. As compared to CAR-T, these potential advantages include that our TCR-T program targets intracellular and extracellular neoantigens whereas CAR-T only targets extracellular antigens. As compared to TIL, these potential advantages include that our TCR-T program has defined target specificity from the genetic engineering employed in manufacturing whereas in TIL there is no further genetic engineering employed.

### Corporate Information

We originally incorporated in Colorado in September 1998 (under the name Net Escapes, Inc.) and later changed our name to “EasyWeb, Inc.” in February 1999. We re-incorporated in Delaware on May 16, 2005 under the same name. On September 13, 2005, we completed a “reverse” acquisition of privately held Ziopharm, Inc., a Delaware corporation. To effect this transaction, we caused ZIO Acquisition Corp., our wholly-owned subsidiary, to merge with and into Ziopharm, Inc., with Ziopharm, Inc. surviving as our wholly owned subsidiary. Following the merger, we caused Ziopharm, Inc. to merge with and into us and we changed our name to “ZIOPHARM Oncology, Inc.” As a result, Ziopharm, Inc. became the registrant with the SEC and the historical financial statements of Ziopharm, Inc. became our historical financial statements. On January 25, 2022, we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation, or (as amended) our certificate of incorporation, with the Delaware Secretary of State to change our name to Alaunos Therapeutics, Inc.

### Office Location

Our principal executive offices are located at 8030 El Rio Street, Houston, Texas 77054, and our telephone number is (346) 355-4099. Our internet site is [www.alaunos.com](http://www.alaunos.com). Information found on, or accessible through, our website is not a part of, and is not incorporated into, this prospectus, and you should not consider it part of this prospectus.

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## THE OFFERING

Common Stock Offered By Us	Shares of our common stock having an aggregate offering price of up to \$50,000,000.
Common Stock Outstanding After This Offering	Up to 233,415,921 shares, assuming the sale of up to 17,241,379 shares of our common stock at a price of \$2.90 per share, which was the closing price of our common stock on the Nasdaq Global Select Market on September 2, 2022. The actual number of shares issued will vary depending on the sales price under this offering.
Plan of Distribution	“At the market” offering that may be made from time to time through our agent, Piper Sandler. See “ <i>Plan of Distribution</i> ” on page 18 of this prospectus.
Use of Proceeds	We currently intend to use the net proceeds from the sale of the securities offered hereby to fund the continued development of the product candidates in our pipeline, and for working capital, capital expenditures and general corporate purposes. See “ <i>Use of Proceeds</i> ” on page 10 of this prospectus.
Risk Factors	Investing in our common stock involves significant risks. See “ <i>Risk Factors</i> ” on page 6 of this prospectus, and under similar headings in other documents incorporated by reference into this prospectus.
Symbol on the Nasdaq Global Select Market	“TCRT”

The number of shares of common stock to be outstanding after this offering is based on 216,174,542 shares of common stock outstanding as of June 30, 2022 and excludes in each case as of June 30, 2022:

- 10,086,635 shares of common stock issuable upon the exercise of outstanding stock options having a weighted-average exercise price of approximately \$1.97 per share;
- 22,922,342 shares of common stock issuable upon the exercise of outstanding warrants with a weighted-average exercise price of \$5.62 per share; and
- 15,780,200 shares of common stock reserved for issuance pursuant to future awards under our 2020 Equity Incentive Plan.

In addition, unless we specifically state otherwise, all information in this prospectus assumes no exercise of outstanding stock options subsequent to June 30, 2022.

## RISK FACTORS

*Investing in our securities involves a high degree of risk. You should carefully review the risks and uncertainties described below and under the section titled “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2021 and in our most recent Quarterly Report on Form 10-Q for the period ended June 30, 2022, as updated by our annual, quarterly and other reports and documents that are incorporated by reference into this prospectus, before deciding whether to purchase any of the securities being registered pursuant to the registration statement of which this prospectus is a part. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities, and the occurrence of any of these risks might cause you to lose all or part of your investment. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations. Please also read carefully the section below titled “Special Note Regarding Forward-Looking Statements.”*

### **ADDITIONAL RISKS RELATED TO THIS OFFERING**

#### ***You may experience dilution.***

The offering price per share in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that an aggregate of 17,241,379 shares of our common stock are sold at a price of \$2.90 per share, the last reported sale price of our common stock on the Nasdaq Global Select Market on September 2, 2022, for aggregate gross proceeds of \$50 million, and after deducting commissions and estimated offering expenses payable by us, you would experience immediate dilution of \$2.52 per share, representing the difference between our as adjusted net tangible book value per share as of June 30, 2022 after giving effect to this offering and the assumed offering price. The exercise of outstanding stock options would result in further dilution of your investment. See the section entitled “Dilution” below for a more detailed illustration of the dilution you would incur if you participate in this offering. Because the sales of the shares offered hereby will be made directly into the market or in negotiated transactions, the prices at which we sell these shares will vary and these variations may be significant. Purchasers of the shares we sell, as well as our existing shareholders, will experience significant dilution if we sell shares at prices significantly below the price at which they invested.

#### ***You may experience future dilution as a result of future equity offerings.***

In order to raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater 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 other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering.

#### ***Our management might apply the net proceeds from this offering in ways with which you do not agree and in ways that may impair the value of your investment.***

We currently intend to use the net proceeds from this offering primarily to fund the continued development of the product candidates in our pipeline, and for working capital, capital expenditures and general corporate purposes. Pending these uses, we expect to invest the net proceeds in short-term U.S. treasury money market mutual funds. Our management has broad discretion as to the use of these proceeds and you will be relying on the judgment of our management regarding the application of these proceeds. We might apply these proceeds in ways with which you do not agree, or in ways that do not yield a favorable return. If our management applies these proceeds in a manner that does not yield a



significant return, if any, on our investment of these net proceeds, it could compromise our ability to pursue our growth strategy and adversely affect the market price of our common stock.

***It is not possible to predict the actual number of shares we will sell under the Equity Distribution Agreement or the gross proceeds resulting from those sales.***

Subject to certain limitations in the Equity Distribution Agreement and compliance with applicable law, we have the discretion to deliver instruction to Piper Sandler to sell shares of our common stock at any time throughout the term of the Equity Distribution Agreement. The number of shares that are sold through Piper Sandler after our instruction will fluctuate based on a number of factors, including the market price of our common stock during the sales period, the limits we set with Piper Sandler in any instruction to sell shares, and the demand for our common stock during the sales period.

Because the price per share of each share sold will fluctuate during this offering, it is not currently possible to predict the number of shares that will be sold or the gross proceeds to be raised in connection with those sales.

***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 levels of dilution and different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold in this offering. In addition, subject to the final determination by our board of directors, there is no minimum or maximum sales price for shares to be sold in this offering. Investors may experience a decline in the value of the shares they purchase in this offering as a result of sales made at prices lower than the prices they paid.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are all statements contained in, or incorporate by reference, herein that are not historical fact, and in some cases can be identified by terms such as: “anticipate,” “believe,” “estimate,” “expect,” “forecast,” “intend,” “may,” “plan,” “project,” “target,” “will” and other words and terms of similar meaning.

These statements are based on management’s current beliefs and assumptions and on information currently available to management. These statements involve risks, uncertainties and other factors that may cause actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. Although we believe that the expectations reflected in such forward-looking statements are reasonable, we caution you that these statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. Forward-looking statements in this prospectus and the documents incorporated by reference herein include, but are not limited to, statements about:

- our ability to raise substantial additional capital to fund our planned operations and repay our existing indebtedness;
- estimates regarding our expenses, use of cash, timing of future cash needs and anticipated capital requirements;
- the development of our product candidates, including statements regarding the initiation, timing, progress and results of our preclinical studies, clinical trials and research and development programs;
- our ability to advance our product candidates through various stages of development, especially through pivotal safety and efficacy trials;
- the risk that final trial data may not support interim analysis of the viability of our product candidates;
- our expectation regarding the safety and efficacy of our product candidates;
- the timing, scope or likelihood of regulatory filings and approvals from the U.S. Food and Drug Administration, or FDA, or equivalent foreign regulatory agencies for our product candidates and for which indications;
- our ability to license additional intellectual property relating to our product candidates from third parties and to comply with our existing license agreements;
- our ability to enter into partnerships or strategic collaboration agreements and our ability to achieve the results and potential benefits contemplated from relationships with collaborators;
- our ability to maintain and establish collaborations and licenses;
- our expectation of developments and projections relating to competition from other pharmaceutical and biotechnology companies or our industry;
- our estimates regarding the potential market opportunity for our product candidates;
- the anticipated rate and degree of commercial scope and potential, as well as market acceptance of our product candidates for any indication, if approved;
- the anticipated amount, timing and accounting of contract liability, milestones and other payments under licensing, collaboration or acquisition agreements, research and development costs and other expenses;

- our intellectual property position, including the strength and enforceability of our intellectual property rights;
- our ability to attract and retain qualified employees and key personnel;
- our expectations regarding the impact of the COVID-19 pandemic, including the expected duration of disruption to key clinical trial activities, limitations on travel, quarantine and social distancing protocols, diversion of healthcare resources away from the conduct of or clinical trials, and other immediate and long-term impact and effect on our business and operations.

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 described the section titled “*Risk Factors*.” 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.

You should refer to the “*Risk Factors*” section contained in this prospectus, any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus, for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Given these risks, uncertainties and other factors, many of which are beyond our control, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate, and you should not place undue reliance on these forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus, even if new information becomes available in the future.

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## USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate sales proceeds of up to \$50 million from time to time. Because there is no minimum offering price for the shares that we may offer from time to time, the actual total public offering amount, commissions to Piper Sandler and proceeds to us, if any, are not determinable at this time. There can be no assurance that we will sell any shares under or fully utilize the Equity Distribution Agreement with Piper Sandler as a source of financing.

We currently intend to use the net proceeds from the sale of the securities offered hereby to fund the continued development of the product candidates in our pipeline, and for working capital, capital expenditures and general corporate purposes. Pending these uses, we expect to invest the net proceeds in short-term U.S. treasury money market mutual funds.

The amounts and timing of our actual expenditures will depend on numerous factors, including the progress of our clinical trials and other development efforts and other factors described under “*Risk Factors*” in this prospectus and the documents incorporated by reference herein, as well as the amount of cash used in our operations. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds.

## DILUTION

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

Our net tangible book value as of June 30, 2022 was approximately \$40,180,000 or \$0.19 per share. Net tangible book value per share is determined by dividing our total tangible assets (including our right-of-use lease assets), less total liabilities, by the number of shares of our common stock outstanding as of June 30, 2022. Dilution with respect to net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the sale of 17,241,379 shares of our common stock in this offering at an assumed offering price of \$2.90 per share, the last reported sale price of our common stock on the Nasdaq Global Select Market on September 2, 2022, for aggregate gross proceeds of \$50 million, and after deducting commissions and offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2022 would have been approximately \$88,330,000, or \$0.38 per share. This represents an immediate increase in net tangible book value of \$0.19 per share to existing stockholders and immediate dilution of \$2.52 per share to investors purchasing our common stock in this offering at the assumed public offering price. The following table illustrates this dilution on a per share basis:

Assumed public offering price per share	\$2.90
Net tangible book value per share of as of June 30, 2022	\$0.19
Increase in net tangible book value per share attributable to this offering	\$0.19
As adjusted net tangible book value per share as of June 30, 2022, after giving effect to this offering	\$0.38
Dilution per share to investors purchasing our common stock in this offering	\$2.52

The above discussion and table are based on 216,174,542 shares of common stock outstanding as of June 30, 2022 and exclude in each case as of June 30, 2022:

- 10,086,635 shares of common stock issuable upon the exercise of outstanding stock options having a weighted-average exercise price of approximately \$1.97 per share;
- 22,922,342 shares of common stock issuable upon the exercise of outstanding warrants with a weighted-average exercise price of \$5.62 per share; and
- 15,780,200 shares of common stock reserved for issuance pursuant to future awards under our 2020 Equity Incentive Plan.

In addition, unless we specifically state otherwise, all information in this prospectus assumes no exercise of outstanding stock options subsequent to June 30, 2022.

The table above assumes for illustrative purposes that an aggregate of 17,241,379 shares of our common stock are offered during the term of the Equity Distribution Agreement with Piper Sandler at a price of \$2.90 per share, the last reported sale price of our common stock on the Nasdaq Global Select Market on September 2, 2022, for aggregate gross proceeds of \$50 million. The shares subject to the Equity Distribution Agreement with Piper Sandler are being sold from time to time at various prices. An increase of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$2.90 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$50 million during the term of the Equity Distribution Agreement with Piper Sandler is sold at that price,

would increase our as adjusted net tangible book value per share after the offering to \$0.39 per share and would increase the dilution in net tangible book value per share to new investors in this offering to \$3.51 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$2.90 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$50 million during the term of the Equity Distribution Agreement with Piper Sandler is sold at that price, would decrease our as adjusted net tangible book value per share after the offering to \$0.36 per share and would decrease the dilution in net tangible book value per share to new investors in this offering to \$1.54 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

To the extent that outstanding stock options outstanding as of June 30, 2022 have been or may be exercised or other shares issued, investors purchasing our common stock in this offering may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity, convertible debt securities or other securities exchangeable for common stock, the issuance of these securities could result in further dilution to our stockholders.

## DESCRIPTION OF CAPITAL STOCK

*The following description of our capital stock and provisions of our certificate of incorporation, and amended and restated bylaws, or bylaws, are summaries. You should also refer to our certificate of incorporation and the bylaws, which are filed as exhibits to the registration statement of which this prospectus is part.*

### General

As of the date of this prospectus, our authorized capital stock consists of 450,000,000 shares, comprised of 420,000,000 shares of common stock, par value \$0.001 per share, and 30,000,000 shares of preferred stock, par value \$0.001 per share. As of September 2, 2022, there were 216,182,042 shares of common stock and no shares of preferred stock issued and outstanding. Our common stock is traded on the Nasdaq Global Select Market under the symbol “TCRT”.

### Common Stock

*Voting Rights.* The holders of our common stock are entitled to one vote for each outstanding share of common stock owned by such stockholder on every matter properly submitted to the stockholders for their vote. Stockholders are not entitled to vote cumulatively for the election of directors. Because of this, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose. At any meeting of the stockholders, a quorum as to any matter shall consist of the holders of a majority of the votes entitled to be cast on the matter, except where a larger quorum is required by law, by our certificate of incorporation or by our bylaws.

*Dividend Rights.* Holders of our common stock are entitled to receive ratably dividends and other distributions of cash or any other right or property as may be declared by our board of directors out of our assets or funds legally available for such dividends or distributions. The dividend rights of holders of common stock are subject to the dividend rights of the holders of any series of preferred stock that may be issued and outstanding from time to time.

*Liquidation Rights.* In the event of any voluntary or involuntary liquidation, dissolution or winding up of our affairs, holders of our common stock would be entitled to share ratably in our assets that are legally available for distribution to stockholders after payment of liabilities. If we have any preferred stock outstanding at such time, the holders of such preferred stock may be entitled to distribution and/or liquidation preferences that require us to pay the applicable distribution to the holders of preferred stock before paying distributions to the holders of common stock.

*Rights and Preferences.* Holders of our common stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company.

See “*Certain Provisions of Delaware Law, the Certificate of Incorporation and Bylaws*” for a description of provisions in our certificate of incorporation and bylaws which may have the effect of delaying, deferring or preventing changes in control.

## Preferred Stock

Pursuant to our certificate of incorporation, our board of directors has the authority, without stockholder approval, subject to limitations prescribed by law, to provide for the issuance of up to 30,000,000 shares of preferred stock in one or more series, and by filing a certificate pursuant to the applicable law of the State of Delaware, to establish from time to time the number of shares to be included in each such series, and to fix the designation, powers, preferences and rights of the shares of each series and any qualifications, limitations or restrictions thereof, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding. We have designated 250,000 shares of our preferred stock as our Series 1 Preferred Stock, none of which are outstanding.

We will fix the designations, voting powers, preferences and rights of the preferred stock of each series, as well as the qualifications, limitations or restrictions thereof, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. This description will include:

- the title and stated value;
- the number of shares offered;
- the liquidation preference per share;
- the purchase price per share;
- the dividend rate(s), period(s) and/or payment date(s) or method(s) of calculation for dividends;
- whether dividends are cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- our right, if any, to defer payment of dividends and the maximum length of any such deferral period;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provision for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- the terms and conditions, if applicable, upon which the preferred stock will be convertible into common stock, including the conversion price (or manner of calculation) and conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material and/or special U.S. federal income tax considerations applicable to the preferred stock;



- the relative ranking and preferences of the preferred stock as to dividend rights and rights upon the liquidation, dissolution or winding up of our affairs;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the class or series of preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of our affairs; and
- any other specific terms, preferences, rights, limitations or restrictions of the preferred stock.

Our board of directors could authorize the issuance of shares of preferred stock with terms and conditions that could have the effect of discouraging a takeover or other transaction that might involve a premium price for holders of the shares or which holders might believe to be in their best interests. The issuance of preferred stock could adversely affect the voting power, conversion or other rights of holders of common stock and reduce the likelihood that common stockholders will receive dividend payments and payments upon liquidation.

The laws of the state of Delaware, the state of our incorporation, provide that the holders of preferred stock will have the right to vote separately as a class on any proposal involving fundamental changes in the rights of holders of such preferred stock. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

**CERTAIN PROVISIONS OF DELAWARE LAW,  
THE CERTIFICATE OF INCORPORATION AND BYLAWS**

**Limitations on Directors' Liability**

Our certificate of incorporation and our bylaws contain provisions indemnifying our directors and officers to the fullest extent permitted by law. In addition, as permitted by Delaware law, our certificate of incorporation provides that no director will be liable to us or our stockholders for monetary damages for breach of certain fiduciary duties as a director. The effect of this provision is to restrict our rights and the rights of our stockholders in derivative suits to recover monetary damages against a director for breach of certain fiduciary duties as a director, except that a director will be personally liable for:

- the benefits to be derived from relationships with our collaborators;
- any breach of his or her duty of loyalty to the registrant or its stockholders;
- acts or omissions not in good faith which involve intentional misconduct or a knowing violation of law;
- the payment of dividends or the redemption or purchase of stock in violation of Delaware law; or
- any transaction from which the director derived an improper personal benefit.

This provision does not affect a director's liability under the federal securities laws.

To the extent that our directors, officers and controlling persons are indemnified under the provisions contained in our certificate of incorporation, Delaware law or contractual arrangements against liabilities arising under the Securities Act, we have been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act, and is therefore unenforceable.

**Provisions that May Have an Anti-Takeover Effect**

Certain provisions set forth in our certificate of incorporation, bylaws and in Delaware law, which are summarized below, are intended to enhance the likelihood of continuity and stability in the composition of our board of directors and in the policies formulated by our board of directors and to discourage certain types of transactions that may involve an actual or threatened change of control. In that regard, these provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for shares of our common stock and, as a consequence, they also may inhibit fluctuations in the market price of our common stock that could result from actual or rumored takeover attempts. Such provisions also may have the effect of preventing changes in our management.

*Blank Check Preferred Stock.* Our certificate of incorporation contains provisions that permit our board of directors to issue, without any further vote or action by the stockholders, up to 30,000,000 shares of preferred stock in one or more series and, with respect to each such series, to fix the number of shares constituting the series and the designation of the series, the voting powers (if any) of the shares of the series, and the preferences and relative, participating, optional and other special rights, if any, and any qualifications, limitations or restrictions, of the shares of such series. As a result, our board of directors could authorize the issuance of shares of preferred stock with terms and conditions that could have the effect of delaying, deferring or preventing a transaction or a change in control that might involve a premium price for holders of our common stock or otherwise be in their best interest.

*Special Meetings of Stockholders.* Our bylaws provide that special meetings of stockholders may be called only by the board of directors. Stockholders are not permitted to call a special meeting of stockholders or to require that the board of directors call such a special meeting.

*Delaware Takeover Statute.*

We are subject to Section 203 of the Delaware General Corporation Law, or DGCL, which regulates acquisitions of some Delaware corporations. In general, Section 203 prohibits, with some exceptions, a Delaware corporation that is a public company from engaging in any “business combination” with any “interested stockholder” for a period of three years following the date that such stockholder became an interested stockholder, unless:

- prior to such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- on consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned (x) by persons who are directors and also officers and (y) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 of the DGCL defines “business combination” to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an “interested shareholder” as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with such entity or person.

## PLAN OF DISTRIBUTION

We have entered into the Equity Distribution Agreement with Piper Sandler, as our sales agent, pursuant to which we may issue and sell from time to time shares of our common stock having an aggregate offering price of up to \$50,000,000 through Piper Sandler.

This prospectus only relates to up to \$50,000,000 of shares of our common stock that we may issue and sell from time to time under the Equity Distribution Agreement. We will be required to file another prospectus or prospectus supplement in the event we want to offer more than \$50,000,000 in shares of our common stock in accordance with the terms of the Equity Distribution Agreement.

Piper Sandler will use commercially reasonable efforts to sell on our behalf all shares of our common stock requested to be sold by us, consistent with its normal trading and sales practices, under the terms and subject to the conditions set forth in the Equity Distribution Agreement. We may instruct Piper Sandler not to sell our common stock if the sales cannot be effected at or above the price designated by us in any instruction. We or Piper Sandler may suspend the offering of our common stock upon proper notice and subject to other conditions, as further described in the Equity Distribution Agreement.

Upon delivery of a placement notice, and subject to our instructions in that notice and the terms and conditions of the Equity Distribution Agreement generally, Piper Sandler may sell our common stock by any method permitted by law that is deemed to be an "at the market offering" as defined in Rule 415(a)(4) promulgated under the Securities Act, including sales made directly on or through the Nasdaq Global Select Market or on any other existing trading market for our common stock. Piper Sandler will provide written confirmation to us no later than the opening of trading on the Nasdaq Global Select Market on the day following each day in which our common stock is sold under the Equity Distribution Agreement. Each such confirmation will include the number of shares of our common stock sold on such day, the volume-weighted average price of the shares sold, the net proceeds to us and the compensation payable by us to Piper Sandler in connection with such sales.

We will pay Piper Sandler commissions for its services in acting as sales agent in the sale of our common stock. Piper Sandler will be entitled to compensation in an amount equal to 3.0% of the gross sales price of all common stock sold through it as sales agent under the Equity Distribution Agreement. We have also agreed to reimburse Piper Sandler for the out-of-pocket reasonable fees and disbursements of its legal counsel, in an amount not to exceed \$75,000, in connection with the establishment of this at-the-market offering program. In accordance with Financial Industry Regulatory Authority, Inc. Rule 5110, these reimbursed fees and expenses are deemed sales compensation in connection with this offering. We estimate that the total expenses for this offering, excluding compensation and reimbursements payable to Piper Sandler under the terms of the Equity Distribution Agreement, will be approximately \$350,000.

Settlement for sales of our common stock will occur on the second business day following the date on which any such sales are made, or on some other date that is agreed upon by us and Piper Sandler in connection with a particular transaction, 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.

We will report at least quarterly the number of shares of our common stock sold through Piper Sandler, as sales agent, under the Equity Distribution Agreement, and the net proceeds to us in connection with such sales.

Piper Sandler and its affiliates may in the future provide various investment banking, commercial banking, fiduciary and advisory services for us for which they may receive, customary fees and expenses. Piper Sandler and its affiliates may from time to time engage in other transactions with and perform services for us in the ordinary course of their business.

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In connection with the sale of our common stock on our behalf, Piper Sandler will be deemed to be an underwriter within the meaning of the Securities Act, and the compensation paid by us to Piper Sandler will be deemed to be underwriting commissions or discounts. We have agreed to indemnify Piper Sandler against specified liabilities, including liabilities under the Securities Act, or to contribute to payments that Piper Sandler may be required to make because of such liabilities.

The offering of our common stock pursuant to the Equity Distribution Agreement will terminate upon the termination of the Equity Distribution Agreement. The Equity Distribution Agreement may be terminated by Piper Sandler or us at any time upon specified prior written notice.

Any summary of provisions of the Equity Distribution Agreement above does not purport to be a complete statement of the Equity Distribution Agreement terms and conditions. A copy of the Equity Distribution Agreement is filed as an exhibit to the registration statement of which this prospectus forms a part.

## LEGAL MATTERS

The validity of the common stock offered by this prospectus will be passed upon by Covington & Burling LLP, New York, New York. Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., New York, New York, is counsel for Piper Sandler in connection with this offering.

## EXPERTS

The financial statements of Alaunos Therapeutics, Inc. as of December 31, 2021 and 2020 and the years then ended incorporated in this prospectus by reference from the Alaunos Therapeutics, Inc. Annual Report on Form 10-K for the year ended December 31, 2021 have been audited by RSM US LLP, an independent registered public accounting firm, as stated in their report thereon, incorporated herein by reference, and have been incorporated in this prospectus and the registration statement in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities we are offering under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. You should rely only on the information contained in this prospectus or incorporated by reference herein. We have not authorized anyone else to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of the securities offered by this prospectus.

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>.

Copies of certain information filed by us with the SEC are also available on our website at [www.alaunos.com](http://www.alaunos.com). Information contained in or accessible through our website does not constitute a part of this prospectus and is not incorporated by reference in this prospectus.

## INCORPORATION OF CERTAIN INFORMATION 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 SEC file number for the documents incorporated by reference in this prospectus is No. 001-33038. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this document:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2021, filed with the SEC on March 30, 2022;
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended [March 31, 2022](#) and [June 30, 2022](#), filed with the SEC on May 16, 2022 and August 15, 2022, respectively;
- our Current Reports on Form 8-K filed with the SEC on [January 4, 2022](#), [January 26, 2022](#), [March 17, 2022](#), [March 18, 2022](#), [May 2, 2022](#) (first filed only), [June 17, 2022](#), [June 27, 2022](#), [July 13, 2022](#) and [September 6, 2022](#) to the extent the information in such reports is filed and not furnished; and

- the description of our common stock set forth in [Exhibit 4.7](#) to our Annual Report on Form 10-K for the year ended December 31, 2021, which was filed with the SEC on March 30, 2022, including any amendments or reports filed for the purpose of updating such description.

All reports and other documents we subsequently file pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including all such reports and documents filed with the SEC after the date of the initial filing of the registration statement of which this prospectus forms a part and prior to the effectiveness of such registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents. 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 the prospectus, including exhibits that are specifically incorporated by reference into such documents. You may request a copy of such documents at no cost, by writing or telephoning us at the following address or telephone number:

Alaunos Therapeutics, Inc.  
8030 El Rio St.  
Houston, TX 77054  
Attention: Senior Vice President, Legal  
(346) 355-4099

Any statement contained in this prospectus or contained in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded to the extent that a statement contained in this prospectus or any subsequently filed supplement to this prospectus, or document deemed to be incorporated by reference into this prospectus, modifies or supersedes such statement.

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**Up to \$50,000,000**

**Common Stock**

**ALAUNOS THERAPEUTICS, INC.**



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**PROSPECTUS**

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**Piper Sandler**

September 7, 2022