

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee (1)
Common stock, par value \$0.001 per share	\$150,000,000	\$13,905

- (1) Calculated pursuant to Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act"), based on the proposed maximum aggregate offering price. Payment of the registration fee at the time of filing of the Registrant's registration statement on Form S-3, filed with the Securities and Exchange Commission on August 13, 2021, was deferred pursuant to Rules 456(b) and 457(r) under the Securities Act and is paid herewith.

PROSPECTUS SUPPLEMENT
(To Prospectus Dated August 13, 2021)



Up to \$150,000,000

Common Stock

We have entered into a sales agreement, or Sales Agreement, with Cantor Fitzgerald & Co., or Cantor Fitzgerald, and Credit Suisse Securities (USA) LLC, or Credit Suisse, dated December 17, 2021, relating to the sale of shares of our common stock, par value \$0.001 per share, offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the Sales Agreement, under this prospectus supplement we may offer and sell shares of our common stock having an aggregate offering price of up to \$150,000,000 from time to time through or to Cantor Fitzgerald and Credit Suisse, acting as our agent or principal.

Our common stock is listed on The Nasdaq Global Select Market under the symbol "ALXO." The last reported sale price of our common stock on December 16, 2021 was \$22.87 per share.

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

The compensation to Cantor Fitzgerald and Credit Suisse for sales of common stock sold pursuant to the Sales Agreement will be an amount up to 3.0% of the 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, Cantor Fitzgerald and Credit Suisse will each be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of Cantor Fitzgerald and Credit Suisse will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Cantor Fitzgerald and Credit Suisse with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Investing in our common stock involves risk. Please read the information contained in and incorporated by reference under the heading "[Risk Factors](#)" beginning on page S-7 of this prospectus supplement, and under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus supplement and accompanying prospectus.

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



The date of this prospectus supplement is December 17, 2021.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus, dated August 13, 2021, are part of a registration statement that we filed with the Securities and Exchange Commission, which we refer to as the “SEC,” utilizing an automatic “shelf” registration process. Under this shelf registration process, we may from time to time offer shares of our common stock having an aggregate offering price of up to \$150,000,000 under this prospectus supplement at prices and on terms to be determined by market conditions at the time of each such offering.

We are providing information to you about this offering of our common stock in two parts. The first part is this prospectus supplement, which provides you with specific information regarding the terms of this offering and our common stock, and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus. The second part is the accompanying prospectus, which provides more general information, some of which does not apply to this offering of our common stock.

Before buying any of the common stock that we are offering, we urge you to carefully read this prospectus supplement and all of the information incorporated by reference herein, as well as the additional information described under the headings “Where You Can Find More Information” and “Incorporation by Reference.” These documents contain important information that you should consider when making your investment decision.

To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in any document incorporated by reference in this prospectus supplement that was filed with the SEC before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. 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 in this prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement.

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 agreement, 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 Cantor Fitzgerald and Credit Suisse have not, authorized anyone to provide you with any information other than that contained or incorporated by reference in this prospectus supplement and in the accompanying prospectus or in any related free writing prospectus that we authorize for use in connection with this offering and 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. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information appearing in this prospectus supplement, the documents incorporated by reference and the accompanying prospectus or free writing prospectus is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

This prospectus supplement does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in this prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful.

Unless the context otherwise indicates, references in this prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein to “ALX Oncology Holdings,” “we,” “our” and “us” refer, collectively, to ALX Oncology Holdings Inc., a Delaware corporation, and its consolidated subsidiaries.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus, and the documents incorporated by reference herein and therein, contain forward-looking statements. All statements other than statements of historical facts contained in this prospectus supplement, the accompanying prospectus, and the documents incorporated by reference herein and therein, including statements regarding our future results of operations and financial position, business strategy, product candidates, planned preclinical studies and clinical trials, results of clinical trials, research and development costs, regulatory approvals, timing and likelihood of success, as well as plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that are in some cases beyond our control and may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “would,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “believe,” “estimate,” “predict,” “potential,” or “continue” or the negative of these terms or other similar expressions. Forward-looking statements contained in this prospectus supplement, the accompanying prospectus, and the documents incorporated by reference herein and therein include, but are not limited to, statements about:

- our financial performance;
- the sufficiency of our existing cash to fund our future operating expenses and capital expenditure requirements;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements, and needs for additional financing;
- our plans relating to commercializing our product candidates, if approved, including the geographic areas of focus and our ability to grow a sales team;
- the implementation of our strategic plans for our business and product candidates;
- our ability to obtain and maintain regulatory approval of our product candidates and the timing or likelihood of regulatory filings and approvals, including our expectation to seek special designations, such as orphan drug designation, for our product candidates for various diseases;
- our reliance on third parties to conduct preclinical research activities, clinical trials, and for the manufacture of our product candidates;
- the beneficial characteristics, safety, efficacy and therapeutic effects of our product candidates;
- the progress and focus of our current and future clinical trials, and the reporting of data from those trials;
- our ability to advance product candidates into and successfully complete clinical trials;
- the ability of our clinical trials to demonstrate the safety and efficacy of our product candidates, and other positive results;
- the success of competing therapies that are or may become available;
- developments relating to our competitors and our industry, including competing product candidates and therapies;
- our plans relating to the further development and manufacturing of our product candidates, including additional indications that we may pursue;
- existing regulations and regulatory developments in the United States and other jurisdictions;
- our potential and ability to successfully manufacture and supply our product candidates for clinical trials and for commercial use, if approved;

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- our continued reliance on third parties to conduct additional clinical trials of our product candidates, and for the manufacture of our product candidates;
- our plans and ability to obtain or protect intellectual property rights, including extensions of existing patent terms where available;
- the scope of protection we are able to establish and maintain for intellectual property rights, including our technology platform and product candidates;
- our ability to retain the continued service of our key personnel and to identify, hire, and then retain additional qualified personnel;
- our expectations regarding the impact of the COVID-19 pandemic on our business;
- our plans for and prospects of our acquisitions and other business development activities, and our ability to successfully capitalize on these opportunities;
- our anticipated use of our existing cash and cash equivalents; and
- our expectations related to the use of proceeds from this offering.

We have based these forward-looking statements largely on our current expectations and projections about our business, the industry in which we operate and financial trends that we believe may affect our business, financial condition, results of operations and prospects, and these forward-looking statements are not guarantees of future performance or development. These forward-looking statements speak only as of the date of this prospectus supplement and are subject to a number of risks, uncertainties and assumptions described in the section titled “Risk Factors” and elsewhere in this prospectus supplement, the accompanying prospectus, and the documents incorporated by reference herein and therein. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein until after we distribute this prospectus supplement, whether as a result of any new information, future events or otherwise.

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

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere in this prospectus supplement, the accompanying 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 supplement and the accompanying prospectus carefully, especially the risks of investing in our common stock discussed under “Risk Factors” beginning on page S-7 of this prospectus supplement, the “Risk Factors” section of our [Annual Report on Form 10-K for the year ended December 31, 2020](#) and the “Risk Factors” section of our Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2021](#), [June 30, 2021](#), and [September 30, 2021](#), along with our consolidated financial statements and notes to those consolidated financial statements and the other information incorporated by reference in this prospectus supplement and the accompanying prospectus and in our filings with the SEC.

ALX Oncology Holdings Inc.

We are a clinical-stage immuno-oncology company focused on helping patients fight cancer by developing therapies that focus on the CD47-SIRP α checkpoint pathway and bridge the innate and adaptive immune system. Cancer cells leverage CD47, a cell surface protein, as a “don’t eat me” signal, to evade detection by the immune system. Our lead program is a next-generation checkpoint inhibitor designed to have a high affinity for CD47 and to avoid the limitations caused by hematologic toxicities inherent in other CD47 blocking approaches. We believe our lead product candidate, evorpacept (formerly known as ALX148), will have a wide therapeutic window to block the “don’t eat me” signal on cancer cells, and to leverage the immune activation of broadly used anti-cancer agents through combination strategies. We have dosed over 170 subjects with evorpacept across a range of hematologic and solid malignancies in combination with a number of leading anti-cancer agents. We intend to continue clinical development for the treatment of a range of solid tumor indications and for the treatment of hematologic malignancies, including myelodysplastic syndromes, or MDS, and acute myeloid leukemia, or AML. We plan to initiate additional studies in combination with leading anti-cancer agents. Based on our clinical results to date in multiple oncology indications showing encouraging anti-tumor activity and tolerability and our clinical development plans, our strategy is to pursue evorpacept as a potentially critical component for future combination treatments in oncology. Our second program combines our company’s SIRP α antibodies with Talloc Therapeutics’ toll-like receptor 9 agonist antibody conjugate to deliver a potent immune activator to myeloid cells in the tumor to promote innate and adaptive anti-cancer immune responses.

Company Information

The Company was formed as a Delaware corporation on April 1, 2020 for the purpose of completing the Company’s initial public offering of its common stock and related transactions in order to carry on the business of ALX Oncology Limited. Subsequently, ALX Oncology Limited became a wholly-owned subsidiary of the Company as a result of the internal reorganization. Our office is located at 323 Allerton Avenue, South San Francisco, California 94080. Our telephone number is 650-466-7125. Our website address is <https://www.alxoncology.com>. Information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus supplement and should not be considered to be part of this prospectus supplement or the accompanying prospectus. We have included our website address in this prospectus supplement and the accompanying prospectus solely as an inactive textual reference.

THE OFFERING

Common stock offered by us	Shares of our common stock having an aggregate offering price of up to \$150,000,000.
Shares of common stock outstanding before this offering	40,486,287 shares
Common stock to be outstanding after this offering	Up to 47,045,097 shares, assuming the sale of \$150,000,000 of shares of our common stock at a price of \$22.87 per share, which was the closing price of our common stock on the Nasdaq Global Select Market on December 16, 2021. The actual number of shares issued will vary depending on the sales price under this offering. In addition, as there is no minimum offering amount required as a condition to close this offering, the actual number of shares that may be sold is not determinable at this time. See “Dilution” beginning on page S-11 of this prospectus supplement.
Plan of Distribution	“At the market offering” that may be made from time to time through, at our option, either of our sales agents, Cantor Fitzgerald and Credit Suisse. See “Plan of Distribution” beginning on page S-12 of this prospectus supplement.
Use of Proceeds	<p>We currently intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, for the clinical and other developmental work associated with advancing evorpacept (formerly known as ALX148) and for working capital and other general corporate purposes.</p> <p>See “Use of Proceeds” beginning on page S-9 of this prospectus supplement for more information.</p>
Risk Factors	You should read the “Risk Factors” section of this prospectus supplement, as well as those risk factors that are incorporated by reference in this prospectus supplement and the accompanying prospectus, for a discussion of factors to consider carefully before deciding to purchase shares of our common stock.
Nasdaq Global Select Market symbol	ALXO

The number of shares of our common stock to be outstanding after this offering is based on 40,486,287 shares of our common stock outstanding as September 30, 2021.

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

- 4,892,109 shares of our common stock issuable upon the exercise of options outstanding as of September 30, 2021, at a weighted-average exercise price of \$20.86 per share;

- 15,075 shares of our common stock issuable pursuant to restricted stock units outstanding as of September 30, 2021;
- 328,000 shares of our common stock issuable upon the exercise of options granted after September 30, 2021, at a weighted-average exercise price of \$63.99 per share;
- 3,739,798 shares of our common stock reserved for issuance pursuant to future awards under our Amended and Restated 2020 Equity Incentive Plan, or the 2020 Plan, as of September 30, 2021, plus any future increases in the number of shares of common stock reserved for issuance under our 2020 Plan pursuant to provisions thereof that automatically increase the share reserve under the plan each year; and
- 796,232 shares of our common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan, or the ESPP, plus any future increases in the number of shares of common stock reserved for issuance under the ESPP pursuant to provisions thereof that automatically increase the share reserve under the plan each year.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before making a decision to invest in our securities, in addition to carefully considering the other information contained in this prospectus supplement, in the accompanying prospectus and incorporated by reference herein or therein, you should carefully consider the risks described under the caption “Risk Factors” contained in the accompanying prospectus, and any related free writing prospectus, and the risks discussed under the caption “Risk Factors” contained in our most recent annual report on Form 10-K and in our most recent quarterly reports on Form 10-Q, as well as any amendments thereto, which are incorporated by reference into this prospectus supplement in their entirety, together with other information in this prospectus supplement, the documents incorporated by reference, and any free writing prospectus that we may authorize for use in connection with a specific offering. See “Where You Can Find More Information” and “Incorporation by Reference.”

Risks Related to this Offering

Investors in this offering will pay a much higher price than the book value of our common stock and therefore you will incur immediate and substantial dilution of your investment.

The public offering price of our common stock in this offering will be substantially higher than the net tangible book value per common share based on the total value of our tangible assets less our total liabilities immediately following this offering. Assuming that an aggregate of 6,558,810 shares of our common stock are sold at a price of \$22.87 per share pursuant to this prospectus supplement, which was the last sale price of our common stock as reported on The Nasdaq Global Select Market on December 16, 2021, for an aggregate offering price of approximately \$150,000,000 in this offering, and after deducting estimated commissions and estimated aggregate offering expenses payable by us, you would experience immediate and substantial dilution of approximately \$11.60 per share, representing the difference between our adjusted net tangible book value per share as of September 30, 2021 after giving effect to this offering and the assumed public offering price. For a further description of the dilution that you will experience immediately after this offering, see the section titled “Dilution.”

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. As of September 30, 2021, we had 40,486,287 shares of our common stock outstanding. If our stockholders sell, or the market perceives that our stockholders intend to sell, substantial amount of our common stock in the public market, the market price of our common stock could decline significantly.

Shares issued upon the exercise of stock options outstanding under our equity incentive plans or pursuant to future awards granted under those plans will become available for sale in the public market to the extent permitted by the provisions of applicable vesting schedules and Rule 144 and Rule 701 under the Securities Act.

On July 17, 2020, we filed a registration statement on Form S-8 to register 3,563,962 shares of our common stock reserved for future issuance under our equity compensation plans. In addition, on March 18, 2021, we filed a registration statement on Form S-8 to register 1,992,226 shares of our common stock reserved for future issuance under our equity compensation plans. As a result, shares registered under these registration statements on Form S-8 will be available for sale in the public market subject to the satisfaction of applicable vesting arrangements and the exercise of such options and, in the case of our affiliates, the restrictions of Rule 144.

Moreover, certain holders of our common stock have rights, subject to 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. Registration of these shares under the Securities Act would result in the shares becoming

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freely tradeable in the public market, subject to the restrictions of Rule 144 in the case of our affiliates. If any of these additional shares are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

Our management team will have broad discretion to use the net proceeds from this offering and its investment of these proceeds may not yield a favorable return.

Our management team will have broad discretion in the application of the net proceeds from this offering and could spend or invest the proceeds in ways with which our stockholders disagree. Accordingly, investors will need to rely on our management team's judgment with respect to the use of these proceeds. We intend to use the proceeds from this offering in the manner described in the section titled "Use of Proceeds." The failure by management to apply these funds effectively could negatively affect our ability to operate and grow our business. We cannot specify with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering. In addition, the amount, allocation and timing of our actual expenditures will depend upon numerous factors, including any milestone payments received from any future strategic partnerships and royalties on sales of any future approved product. Accordingly, we will have broad discretion in using these proceeds. Until the net proceeds are used, they may be placed in investments that do not produce significant income or that may lose.

We do not anticipate paying cash dividends and, accordingly, stockholders must rely on share appreciation for any return on their investment.

We have never paid any dividends on our capital stock. We currently intend to retain our future earnings, if any, to fund the development and growth of our businesses and do not anticipate that we will declare or pay any cash dividends on our capital stock in the foreseeable future. See the section titled "Dividend Policy." In addition, the Loan Agreement restricts our ability to pay dividends or make other distributions. As a result, capital appreciation, if any, of our common stock will be your sole source of gain on your investment for the foreseeable future. Investors seeking cash dividends should not invest in our common stock.

Raising additional capital may cause dilution to our stockholders, including purchasers of our common stock in this offering, restrict our operations or require us to relinquish substantial rights.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these new securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available, may involve fixed payment obligations or agreements that include covenants limiting or restricting our ability to take specific actions such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through partnerships, collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, product candidates or future revenue streams, or grant licenses on terms that are not favorable to us. We cannot assure you that we will be able to obtain additional funding if and when necessary. If we are unable to obtain adequate financing on a timely basis, we could be required to delay, scale back or eliminate one or more of our clinical or discovery programs or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

USE OF PROCEEDS

We may issue and sell shares of our common stock having an aggregate offering price of up to \$150,000,000 from time to time. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time.

We currently intend to use the net proceeds, together with our existing cash and cash equivalents, from this offering for the clinical and other developmental work associated with advancing evorpcept (formerly known as ALX148) and for working capital and other general corporate purposes.

Pending the specific use of net proceeds as described in this prospectus supplement, we intend to invest the net proceeds to us from this offering in short and intermediate-term investment grade instruments, certificates of deposit or guaranteed obligations of the U.S. government in accordance with our investment policy.

Our expected use of proceeds from this offering represents our current intentions based on our present plans and business condition. As of the date of this prospectus supplement, we cannot predict with certainty all of the particular uses for the proceeds to be received upon the completion of this offering or the actual amounts that we will spend on the uses set forth above. We may also use a portion of the proceeds to in-license, acquire or invest in additional businesses, technologies, products or assets. Although we have no specific agreements, commitments or understandings with respect to any in-licensing activity or acquisition, we evaluate these opportunities and engage in related discussions with other companies from time to time.

The net proceeds from this offering, together with our existing cash and cash equivalents, may not be sufficient for us to fund our clinical programs, and we may need to raise additional capital to achieve our business objectives.

Based on current business plans, we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will be sufficient to fund our planned operations through 2024.

The amount and timing of our actual expenditures will depend on numerous factors, including the results of our research and development efforts, the timing and outcome of any ongoing or future preclinical studies and clinical trials the timing and outcome of regulatory submissions and any unforeseen cash needs. As a result, our management will have broad discretion over the use of the proceeds from this offering.

DIVIDEND POLICY

We have never declared or paid cash dividends on our common stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. We do not intend to pay cash dividends to holders of our common stock in the foreseeable future.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately 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 after this offering.

Our historical net tangible book value as of September 30, 2021 was \$385.2 million, or \$9.51 per share of our common stock. Historical net tangible book value per share represents the amount of our total tangible assets less total liabilities, divided by the number of shares of our common stock outstanding. After giving effect to the assumed sale by us of shares of our common stock having an aggregate offering price of \$150,000,000 at an assumed public offering price of \$22.87 per share, which was the last reported sale price of our common stock on The Nasdaq Global Select Market on December 16, 2021 and after deducting estimated commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2021 would have been \$530.4 million, or \$11.27 per share. This represents an immediate increase in net tangible book value per share of \$1.76 to existing stockholders and immediate dilution of \$11.60 in net tangible book value per share to new investors purchasing common stock in this offering. Dilution per share to new investors is determined by subtracting as adjusted net tangible book value per share after this offering from the public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis. The as adjusted information is illustrative only and will adjust based on the actual price to the public, the actual number of shares sold and other terms of the offering determined at the time shares of our common stock are sold pursuant to this prospectus supplement. The shares sold in this offering, if any, will be sold from time to time at various prices.

The following table illustrates this dilution on a per share basis:	
Assumed public offering price per share	\$22.87
Historical net tangible book value per share as of September 30, 2021	\$9.51
Increase in net tangible book value per share attributable to new investors in this offering	\$1.76
As adjusted net tangible book value per share after this offering	<u>\$11.27</u>
Dilution per share to new investors purchasing shares in this offering	<u>\$11.60</u>

The foregoing table and calculations are based on 40,486,287 shares of our common stock outstanding as of September 30, 2021 and exclude as of such date:

- 4,892,109 shares of our common stock issuable upon the exercise of options outstanding as of September 30, 2021, at a weighted-average exercise price of \$20.86 per share;
- 15,075 shares of our common stock issuable pursuant to restricted stock units outstanding as of September 30, 2021;
- 328,000 shares of our common stock issuable upon the exercise of options granted after September 30, 2021, at a weighted-average exercise price of \$63.99 per share;
- 3,739,798 shares of our common stock reserved for issuance pursuant to future awards under our Amended and Restated 2020 Equity Incentive Plan, or the 2020 Plan, as of September 30, 2021, plus any future increases in the number of shares of common stock reserved for issuance under our 2020 Plan pursuant to provisions thereof that automatically increase the share reserve under the plan each year; and
- 796,232 shares of our common stock reserved for future issuance under our 2020 Employee Stock Purchase Plan, or the ESPP, plus any future increases in the number of shares of common stock reserved for issuance under the ESPP pursuant to provisions thereof that automatically increase the share reserve under the plan each year.

PLAN OF DISTRIBUTION

We entered into the Sales Agreement with Cantor Fitzgerald and Credit Suisse, each, a sales agent, under which we may offer and sell shares of our common stock having an aggregate gross sales price of up to \$150,000,000 from time to time through the sales agents acting as sales agent. A copy of the Sales Agreement will be filed as an exhibit to a Current Report on Form 8-K dated December 17, 2021. This summary of the material provisions of the Sales Agreement does not purport to be a complete statement of its terms and conditions.

We will submit orders to only one sales agent relating to the sale of shares of our common stock under the Sales Agreement on any given day. Upon delivery of a placement notice to a sales agent and subject to the terms and conditions of the Sales Agreement, such sales agent may offer and sell shares of our common stock by any method permitted by law deemed to be an “at the market offering,” as defined in Rule 415(a)(4) promulgated under the Securities Act. We may instruct such sales agent not to sell common stock if the sales cannot be effected at or above the price designated by us from time to time. We or the sales agents may suspend the offering of common stock upon notice and subject to other conditions.

We will pay the sales agents’ commissions, in cash, for their services in acting as agent in the sale of our common stock. A sales agent is entitled to compensation at a commission rate of up to 3.0% of the gross sales price per share sold by such sales agent under the Sales Agreement. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. We have also agreed to reimburse Cantor for certain specified expenses, including the fees and disbursements of its legal counsel in an amount not to exceed \$75,000. We estimate that the total expenses for the offering, excluding compensation and reimbursements, if any, payable to Cantor Fitzgerald and Credit Suisse under the terms of the Sales Agreement, will be approximately \$0.3 million.

Settlement for sales of shares of common stock will occur on the second business day following the date on which any sales are made, or on some other date that is agreed upon by us and the applicable sales agent in connection with a particular transaction, in return for payment of the net proceeds to us. Sales of our common stock as contemplated in this prospectus supplement and the accompanying prospectus will be settled through the facilities of The Depository Trust Company or by such other means as we and the applicable sales agents may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

The sales agents will use their commercially reasonable efforts, consistent with their sales and trading practices, to solicit offers to purchase the shares of common stock under the terms and subject to the conditions set forth in the Sales Agreement. In connection with the sale of the shares of common stock on our behalf, the applicable sales agent will be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation of such sales agent will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to each sales agent against certain liabilities, including civil liabilities under the Securities Act.

The offering of shares of our common stock pursuant to the Sales Agreement will terminate upon the termination of the Sales Agreement as permitted therein.

The sales agents and their respective affiliates may in the future provide various investment banking, commercial banking and other financial services for us, our subsidiaries and our affiliates, for which services they may in the future receive customary fees. To the extent required by Regulation M, the sales agents will not engage in any market-making activities involving our common stock while the offering is ongoing under this prospectus supplement.

This prospectus supplement and the accompanying prospectus in electronic format may be made available on a website maintained by Cantor Fitzgerald or Credit Suisse, and each of Cantor Fitzgerald and Credit Suisse may distribute this prospectus supplement and the accompanying prospectus electronically.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California. Cantor Fitzgerald & Co. and Credit Suisse Securities (USA) LLC are being represented in connection with this offering by Cooley LLP, New York, New York.

EXPERTS

The consolidated financial statements of ALX Oncology Holdings Inc. as of December 31, 2020 and 2019, and for each of the years in the three-year period ended December 31, 2020, have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. We also maintain a website at www.alxoncology.com where these materials are available. You may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on or accessible through our website is not a part of this prospectus supplement and is not incorporated by reference herein, and the inclusion of our website address in this prospectus supplement is an inactive textual reference only.

This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Forms of the indenture and other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement. Statements in this prospectus supplement or the accompanying prospectus about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above.

INCORPORATION BY REFERENCE

The SEC's rules allow us to "incorporate by reference" information into this prospectus supplement, 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 deemed to be part of this prospectus supplement, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement modifies or replaces that statement.

This prospectus supplement and the accompanying prospectus incorporate by reference the documents set forth below that have previously been filed with the SEC:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2020, filed with the SEC on March 18, 2021;
- our Quarterly Report on [Form 10-Q](#) for the quarter ended March 31, 2021, filed with the SEC on May 17, 2021; our Quarterly Report on [Form 10-Q](#) for the quarter ended June 30, 2021, filed with the SEC on August 12, 2021; and our Quarterly Report on [Form 10-Q](#) for the quarter ended September 30, 2021, filed with the SEC on November 12, 2021;
- the information specifically incorporated by reference in our Annual Report on Form 10-K for the year ended December 31, 2020, from our [definitive proxy statement](#) relating to our 2021 annual meeting of stockholders, filed with the SEC on April 29, 2021;
- our Current Reports on Form 8-K filed with the SEC on [March 15, 2021](#), [March 25, 2021](#), [May 4, 2021](#), [June 15, 2021](#), [August 27, 2021](#) and [October 7, 2021](#); and
- the description of our common stock set forth in our registration statement on [Form 8-A](#), filed with the SEC on July 13, 2020, including any amendments thereto or reports filed for the purposes of updating this description.

Any documents we file with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement and prior to the termination of the offering of our securities to which this prospectus supplement relates will automatically be deemed to be incorporated by reference into this prospectus supplement and to be part hereof from the date of filing those documents. We are not, however, incorporating by reference any documents or portions thereof that are not deemed "filed" with the SEC, including any information furnished pursuant to Item 2.02 or Item 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K. 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.

You can request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

ALX Oncology Holdings Inc.
Attn: Investor Relations
323 Allerton Avenue
South San Francisco, California 94080
650-466-7125

The information accessible through any website referred to in this prospectus supplement or any document incorporated herein is not, and should not be deemed to be, a part of this prospectus supplement.

PROSPECTUS

ALX Oncology Holdings, Inc.



Common Stock
Preferred Stock
Warrants
Purchase Contracts
Units

We may offer and sell the securities identified above from time to time in one or more offerings. This prospectus provides you with a general description of the securities.

Each time we offer and sell securities, we will provide a supplement to this prospectus that contains specific information about the offering and the amounts, prices and terms of the securities. The supplement may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement, together with any documents we incorporated by reference, before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled "About this Prospectus" and "Plan of Distribution" for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE ["RISK FACTORS"](#) BEGINNING ON PAGE 3 OF THIS PROSPECTUS AND IN ANY SIMILAR SECTION CONTAINED IN OR INCORPORATED BY REFERENCE HEREIN OR IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on the Nasdaq Global Select Market under the symbol "ALXO." On August 12, 2021, the last reported sale price of our common stock on the Nasdaq Global Select Market was \$66.41 per share.

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

The date of this prospectus is August 13, 2021.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission (the “SEC”) as a “well-known seasoned issuer” as defined in Rule 405 under the Securities Act of 1933, as amended, using a “shelf” registration process. By using a shelf registration statement, we may sell securities from time to time and in one or more offerings as described in this prospectus. Each time that we offer and sell securities, we will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering and, to the extent appropriate, any updates to the information about us contained in this prospectus. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement, you should rely on the prospectus supplement. Before purchasing any securities, you should carefully read both this prospectus and the applicable prospectus supplement, together with the additional information described under the headings “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

We have not authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any applicable prospectus supplement or any free writing prospectuses 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. We will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the applicable prospectus supplement to this prospectus is accurate as of the date on its respective cover or as otherwise specified therein 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. This prospectus incorporates by reference, and any prospectus supplement or free writing prospectus may contain and incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. 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. Although we are not aware of any misstatements regarding the market and industry data presented in this prospectus and the documents incorporated herein by reference, these estimates involve risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained or incorporated by reference in this prospectus, the applicable prospectus supplement and any related free writing prospectus and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

When we refer to “ALX Oncology Holdings,” “we,” “our,” “us” and the “Company” in this prospectus, we mean ALX Oncology Holdings Inc., unless the context indicates otherwise or unless otherwise specified. When we refer to “you,” we mean the holders of the applicable series of securities.

THE COMPANY

We are a clinical-stage immuno-oncology company focused on helping patients fight cancer by developing therapies that focus on the CD47-SIRP α checkpoint pathway and bridge the innate and adaptive immune system. Cancer cells leverage CD47, a cell surface protein, as a “don’t eat me” signal, to evade detection by the immune system. Our lead program is a next-generation checkpoint inhibitor designed to have a high affinity for CD47 and to avoid the limitations caused by hematologic toxicities inherent in other CD47 blocking approaches. We believe our lead product candidate, evorpaccept (formerly known as ALX148), will have a wide therapeutic window to block the “don’t eat me” signal on cancer cells, and to leverage the immune activation of broadly used anti-cancer agents through combination strategies. We have dosed over 170 subjects with evorpaccept across a range of hematologic and solid malignancies in combination with a number of leading anti-cancer agents. We intend to continue clinical development for the treatment of a range of solid tumor indications and for the treatment of hematologic malignancies, including myelodysplastic syndromes, or MDS, and acute myeloid leukemia, or AML. We plan to initiate additional studies in combination with leading anti-cancer agents. Based on our clinical results to date in multiple oncology indications showing encouraging anti-tumor activity and tolerability and our clinical development plans, our strategy is to pursue evorpaccept as a potentially critical component for future combination treatments in oncology. Our second program combines our company’s SIRP α antibodies with Tallac Therapeutics’ toll-like receptor 9 agonist antibody conjugate to deliver a potent immune activator to myeloid cells in the tumor to promote innate and adaptive anti-cancer immune responses.

Our office is located at 866 Malcom Road, Suite 100, Burlingame, California 94010. Our telephone number is 650-466-7125. Our website address is <https://www.alxoncology.com>. Information contained on, or that can be accessed through, our website is not incorporated by reference into this prospectus and should not be considered to be part of this prospectus.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before making a decision to invest in our securities, in addition to carefully considering the other information contained in this prospectus, in any accompanying prospectus supplement and incorporated by reference herein or therein, you should carefully consider the risks described under the caption “Risk Factors” contained in the applicable prospectus supplement, and any related free writing prospectus, and the risks discussed under the caption “Risk Factors” contained in our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, as well as any amendments thereto, which are incorporated by reference into this prospectus in their entirety, together with other information in this prospectus, the documents incorporated by reference, and any free writing prospectus that we may authorize for use in connection with a specific offering. See “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement.

DESCRIPTION OF SECURITIES

We may issue from time to time, in one or more offerings, the following securities:

- shares of common stock, par value \$0.001 per share, of the Company;
- shares of preferred stock, par value \$0.001 per share, of the Company;
- warrants to purchase shares of our common stock or preferred stock or other securities from the Company;
- purchase contracts; and
- units representing two or more of the foregoing securities.

We will set forth in the applicable prospectus supplement and/or free writing prospectus a description of any warrants, purchase contracts or units issued by us that may be offered or sold pursuant to this prospectus. The terms of the offering of securities, the initial offering price and the net proceeds to us will be contained in the prospectus supplement, and other offering material, relating to such offer.

DESCRIPTION OF CAPITAL STOCK

The following descriptions of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to our amended and restated certificate of incorporation and the amended and restated bylaws, copies of which are filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part.

General

Our amended and restated certificate of incorporation authorizes preferred stock and common stock. Our authorized capital stock consists of 1,100,000,000 shares, \$0.001 par value per share, of which:

- 1,000,000,000 shares are designated as voting common stock; and
- 100,000,000 shares are designated as preferred stock.

Common Stock

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive ratably those dividends, if any, as may be declared by the board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, the holders of our common stock will be entitled to share ratably in the assets legally available for distribution to stockholders after the payment of or provision for all of our debts and other liabilities, subject to the prior rights of any preferred stock then outstanding. Holders of our common stock have no preemptive rights or other subscription rights and there are no redemption or sinking funds provisions applicable to our common stock. All outstanding shares of our common stock are duly authorized, validly issued, fully paid and nonassessable. The rights, preferences and privileges of holders of our common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our amended and restated certificate of incorporation and amended and restated bylaws do not provide for cumulative voting rights. Because of this, the holders of a plurality 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. With respect to matters other than the election of directors, at any meeting of the stockholders at which a quorum is present or represented, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at such meeting and entitled to vote on the subject matter shall be the act of the stockholders, except as otherwise required by law. The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders.

Dividends

Subject to preferences that may be applicable to any then-outstanding shares of convertible preferred stock, holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution, or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of convertible preferred stock.

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Rights and Preferences

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

Fully Paid and Nonassessable

All of our outstanding shares of common stock are, and the shares of common stock to be issued in this offering, upon payment and delivery in accordance with the underwriting agreement, will be fully paid and nonassessable.

Preferred Stock

Our board of directors has the authority, without further action by the stockholders, to issue up to 100,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges, and restrictions thereof. These rights, preferences, and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking fund terms, and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing change in our control or other corporate action. We have no present plan to issue any shares of preferred stock.

Registration Rights

We are party to that certain Amended and Restated Investors' Rights Agreement dated April 1, 2020, that provides that certain holders of our common stock have certain registration rights as set forth below. The registration of shares of our common stock by the exercise of registration rights described below would enable the holders to sell these shares without restriction under the Securities Act when the applicable registration statement is declared effective. Generally, in an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions, to limit the number of shares such holders may include.

Demand Registration Rights

The holders of an aggregate of 24,429,399 shares of our common stock are entitled to certain demand registration rights. At any time beginning 180 days after the effective date of our initial public offering and before the three-year anniversary of the date of the investors' rights agreement, the holders of at least 50% of the shares in the aggregate may request that we file a registration statement to register all or a portion of their shares. Such request for registration must cover at least 40% of the shares or shares with an anticipated aggregate public offering price, net of underwriting discounts and expenses, of at least \$15.0 million.

S-3 Registration Rights

The holders of an aggregate of 24,429,399 shares of our common stock are entitled to certain Form S-3 registration rights. At any time when we are eligible to file a registration statement on Form S-3, the holders of at least 10% of these shares can make a request that we register their shares on Form S-3 if such request covers shares with an anticipated aggregate public offering price, net of underwriting discounts and expenses, of at least \$1.0 million.

Piggyback Registration Rights

In connection with this offering, the holders of an aggregate of 24,429,399 shares of our common stock were entitled to, and the necessary percentage of holders waived, their rights to notice of this offering and to include

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their shares of registrable securities in this offering. After this offering, in the event that we propose to register any of our securities under the Securities Act, either for our own account or for the account of other security holders, the holders of these shares will be entitled to certain piggyback registration rights allowing the holder to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, the holders of these shares are entitled to notice of the registration and have the right to include their shares in the registration, subject to limitations that the underwriters may impose on the number of shares included in the offering.

Indemnification

Our amended and restated investors' rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

Expenses of Registration

We will pay the registration expenses, other than underwriting discounts and commissions, of the shares registered by the demand, Form S-3 and piggyback registrations described above.

Termination of Registration Rights

The demand, Form S-3 and piggyback registration described above will expire upon the earliest of (1) the fifth anniversary after the closing of our initial public offering, (2) a deemed liquidation event (as defined in our amended and restated certificate of incorporation, in effect prior to the completion of our initial public offering) and (3) such time after the completion of our initial public offering that such stockholder can sell all of its shares entitled to registration rights under Rule 144 of the Securities Act.

Anti-Takeover Effects of Certain Provisions of Delaware Law, Our Amended and Restated Certificate of Incorporation and Our Amended and Restated Bylaws

Certain provisions of Delaware law and certain provisions included in our amended and restated certificate of incorporation and amended and restated bylaws summarized below may be deemed to have an anti-takeover effect and may delay, deter, or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, including attempts that might result in a premium being paid over the market price for the shares held by stockholders.

Preferred Stock

Our amended and restated certificate of incorporation contains provisions that permit our board of directors to issue, without any further vote or action by the stockholders, 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 rights (if any) of the shares of the series and the powers, preferences, or relative, participation, optional, and other special rights, if any, and any qualifications, limitations, or restrictions, of the shares of such series.

Classified Board

Our amended and restated certificate of incorporation provides that our board of directors is divided into three classes, designated Class I, Class II and Class III. The current board of directors consists of seven members, divided into three classes with staggered three-year terms. The term of initial Class I directors terminated on the date of the 2021 annual meeting. At the 2021 annual meeting, Corey Goodman, Ph.D., Jason Lettmann and

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Sophia Randolph, M.D., Ph.D., were nominated and elected to serve as Class I directors for a three-year term until the 2024 annual meeting of stockholders or until their successors are duly elected and qualified. The term of the initial Class II directors shall terminate on the date of the 2022 annual meeting, and the term of the initial Class III directors shall terminate on the date of the 2023 annual meeting. At each subsequent annual meeting of stockholders, successors to the class of directors whose term expires at that annual meeting will be elected for a three-year term.

Removal of Directors

Our amended and restated certificate of incorporation provides that stockholders may only remove a director for cause by a vote of no less than a majority of the shares present in person or by proxy at the meeting and entitled to vote.

Director Vacancies

Our amended and restated certificate of incorporation authorizes only our board of directors to fill vacant directorships.

No Cumulative Voting

Our amended and restated certificate of incorporation provides that stockholders do not have the right to cumulate votes in the election of directors.

Special Meetings of Stockholders

Our amended and restated certificate of incorporation and amended and restated bylaws provide that, except as otherwise required by law, special meetings of the stockholders may be called only by an officer at the request of a majority of our board of directors, by the Chair of our board of directors or by our Chief Executive Officer.

Advance Notice Procedures for Director Nominations

Our amended and restated bylaws provide that stockholders seeking to nominate candidates for election as directors at an annual or special meeting of stockholders must provide timely notice thereof in writing. To be timely, a stockholder's notice generally will have to be delivered to and received at our principal executive offices before notice of the meeting is issued by the secretary of the Company, with such notice being served not less than 90 nor more than 120 days before the meeting. Although the amended and restated bylaws do not give the board of directors the power to approve or disapprove stockholder nominations of candidates to be elected at an annual meeting, the amended and restated bylaws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of the Company.

Action by Written Consent

Our amended and restated certificate of incorporation and amended and restated bylaws provide that any action to be taken by the stockholders must be effected at a duly called annual or special meeting of stockholders and may not be affected by written consent.

Amending our Certificate of Incorporation and Bylaws

Our amended and restated certificate of incorporation may be amended or altered in any manner provided by the DGCL. Our amended and restated bylaws may be adopted, amended, altered, or repealed by stockholders only

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upon approval of at least majority of the voting power of all the then outstanding shares of the common stock, except for any amendment of the above provisions, which would require the approval of a two-thirds majority of our then outstanding common stock. Additionally, our amended and restated certificate of incorporation provides that our bylaws may be amended, altered, or repealed by the board of directors.

Authorized but Unissued Shares

Our authorized but unissued shares of common stock and preferred stock are available for future issuances without stockholder approval, except as required by the listing standards of the Nasdaq, and may be utilized for a variety of corporate purposes, including future offerings to raise additional capital, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock may render more difficult or discourage an attempt to obtain control of the Company by means of a proxy contest, tender offer, merger, or otherwise.

Exclusive Jurisdiction

Our amended and restated bylaws provide that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a claim of breach of fiduciary duty, any action asserting a claim arising pursuant to the DGCL, any action regarding our amended and restated certificate of incorporation or amended and restated bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine. This provision does not apply to suits brought to enforce a duty or liability created by the Exchange Act or any other claim for which the U.S. federal courts have exclusive jurisdiction. Our amended and restated bylaws further provide that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. Any person or entity purchasing or otherwise acquiring any interest in our securities shall be deemed to have notice of and consented to these provisions. Although we believe these provisions benefit us by providing increased consistency in the application of law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against us or our directors and officers.

Business Combinations with Interested Stockholders

We are governed by Section 203 of the DGCL. Subject to certain exceptions, Section 203 of the DGCL prohibits a public Delaware corporation from engaging in a business combination (as defined in such section) with an “interested stockholder” (defined generally as any person who beneficially owns 15% or more of the outstanding voting stock of such corporation or any person affiliated with such person) for a period of three years following the time that such stockholder became an interested stockholder, unless (i) prior to such time the board of directors of such corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder; (ii) upon 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 such corporation at the time the transaction commenced (excluding for purposes of determining the voting stock of such corporation outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (A) by persons who are directors and also officers of such corporation and (B) 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 (iii) at or subsequent to such time the business combination is approved by the board of directors of such corporation and authorized at a meeting of stockholders (and not by written consent) by the affirmative vote of at least 66 2/3% of the outstanding voting stock of such corporation not owned by the interested stockholder.

Limitation of Liability and Indemnification of Officers and Directors

Our amended and restated certificate of incorporation and our amended and restated bylaws provide that we must indemnify our directors and officers to the fullest extent authorized by the DGCL. We are expressly authorized

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to, and do, carry directors' and officers' insurance providing coverage for our directors, officers and certain employees for some liabilities. We believe that these indemnification provisions and insurance are useful to attract and retain qualified directors and executive officers.

The limitation on liability and indemnification provisions in our certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duty. These provisions may also have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit us and our stockholders. Investors may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Listing

Our common stock is listed on the Nasdaq Global Select Market under the trading symbol "ALXO."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent and registrar's address is 250 Royal Street, Canton, Massachusetts 02021.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, direct sales to the public, “at the market” offerings, negotiated transactions, block trades or a combination of these methods. We may sell the offered securities from time to time:

- through underwriters or dealers;
- through agents;
- directly to one or more purchasers; or
- through a combination of any of these methods of sale.

We will identify the specific plan of distribution, including any underwriters, dealers, agents or direct purchasers and their compensation in the applicable prospectus supplement.

LEGAL MATTERS

Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California, will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of ALX Oncology Holdings. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of ALX Oncology Holdings Inc. as of December 31, 2020 and 2019, and for each of the years in the three-year period ended December 31, 2020, have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. We also maintain a website at www.alxoncology.com where these materials are available. You may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on or accessible through our website is not a part of this prospectus and is not incorporated by reference herein, and the inclusion of our website address in this prospectus is an inactive textual reference only. This prospectus and any prospectus supplement are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Forms of the indenture and other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC's rules allow 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 deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2020, filed with the SEC on March 18, 2021;
- our Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2021](#) and [June 30, 2021](#), filed with the SEC on May 13, 2021 and August 12, 2021, respectively;
- the information specifically incorporated by reference in our Annual Report on Form 10-K for the year ended December 31, 2020, from our [definitive proxy statement](#) relating to our 2021 annual meeting of stockholders, filed with the SEC on April 29, 2021;
- our Current Reports on Form 8-K filed with the SEC on [March 15, 2021](#), [March 25, 2021](#), [May 4, 2021](#) and [June 15, 2021](#); and
- the description of our common stock set forth in our registration statement on [Form 8-A](#), filed with the SEC on July 13, 2020, including any amendments thereto or reports filed for the purposes of updating this description.

Any documents we file with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus and prior to the termination of the offering of our securities to which this prospectus relates will automatically be deemed to be incorporated by reference into this prospectus and to be part hereof from the date of filing those documents. We are not, however, incorporating by reference any documents or portions thereof that are not deemed "filed" with the SEC, including any information furnished pursuant to Item 2.02 or Item 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K. 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.

You can request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

ALX Oncology Holdings Inc.
Attn: Investor Relations
866 Malcolm Road, Suite 100
Burlingame, California 94010
650-466-7125

The information accessible through any website referred to in this prospectus or any document incorporated herein is not, and should not be deemed to be, a part of this prospectus.



Up to \$150,000,000

Common Stock

PROSPECTUS SUPPLEMENT



December 17, 2021
