As filed with the Securities and Exchange Commission on November 1, 2023

Registration No. 333-265873

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
POST-EFFECTIVE AMENDMENT NO. 1
TO
FORM S-1
ON
FORM S-3

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

SENTI BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**2836**	**86-2437900**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification No.)**

2 Corporate Drive, First Floor
South San Francisco, CA 94080
(650) 239-2030
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Timothy Lu, M.D., Ph.D
Chief Executive Officer
Senti Biosciences, Inc.
2 Corporate Drive, First Floor
South San Francisco, CA 94080
Telephone: (650) 239-2030
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Jocelyn M. Arel
Maggie Wong
Michael R. Patrone
Goodwin Procter LLP
620 Eighth Avenue
New York, NY 10018
(212) 813-8800

Approximate date of commencement of proposed sale to the public: From time to time after this Registration Statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box: o

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box: x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. o

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	x	Smaller reporting company	x
		Emerging growth company	x

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. x

The registrant (the "Registrant") hereby amends this registration statement (this "Registration Statement") on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until this Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

On June 28, 2022, the registrant filed a Registration Statement on Form S-1 (Registration No. 333-265873), as amended on July 29, 2022, which was declared effective by the Securities and Exchange Commission, or the SEC, on August 8, 2022.

This Post-Effective Amendment No. 1 to Form S-1 on Form S-3, or the Post-Effective Amendment, is being filed by the registrant to convert the Registration Statement on Form S-1 into a Registration Statement on Form S-3.

No additional securities are being registered under this Post-Effective Amendment. All applicable registration fees were paid at the time of the original filing of the Registration Statement.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be issued or sold until the registration statement filed with the U.S. Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and does not constitute the solicitation of an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED NOVEMBER 1, 2023

PRELIMINARY PROSPECTUS

SENTI BIOSCIENCES, INC.

35,444,908 Shares of Common Stock

This prospectus relates to the issuance by us of up to 2,000,000 shares of our common stock, par value $0.0001 per share ("Senti Common Shares") that may be issued as Contingency Consideration from time to time upon achievement of certain stock price thresholds (the "Earn-out Shares").

In addition, this prospectus relates to the offer and sale from time to time by the selling securityholders named in this prospectus (collectively, the "Selling Securityholders"), or their permitted transferees, of up to (i) 15,168,616 Senti Common Shares originally issued to certain of our affiliates as consideration in connection with the Business Combination at a per share value of $10.00 per share, (ii) up to 6,233,292 Senti Common Shares issuable upon the exercise of stock options at exercise prices ranging from $2.66 to $9.92 per share, issued to certain of our affiliates upon the conversion of stock options in Senti Sub I, Inc. (formerly Senti Biosciences, Inc.) in connection with the Business Combination, (iii) 4,878,972 Senti Common Shares distributed by Dynamics Sponsor LLC ("Sponsor") to certain of its members who were affiliates of our predecessor, Dynamics Special Purpose Corp. ("DYNS") prior to the completion of the Business Combination, which shares were originally issued to Sponsor at a price per share of $0.004, (iv) 715,500 Senti Common Shares distributed by Sponsor to certain of its members who were affiliates of DYNS prior to the completion of the Business Combination, which shares were originally issued to Sponsor at a price per share of $10.00 in a private placement transaction completed concurrently with the initial public offering of DYNS, (v) 871,028 Senti Common Shares issued to certain of the Selling Securityholders (the "Anchor Investors") in consideration for their agreement not to redeem their shares of Class A Common Stock of DYNS in connection with the Business Combination, (vi) 5,060,000 Senti Common Shares originally purchased at a purchase price of $10.00 per share at the closing of the Business Combination by a number of subscribers pursuant to separate PIPE subscription agreements (the "PIPE Shares"), and (vii) 517,500 Senti Common Shares issued to Bayer Healthcare LLC at an effective exchange price of $10.00 per share at the closing of the Business Combination upon the cancellation and exchange of the Convertible Note. Sales of any of the foregoing Senti Common Shares, which comprise a significant portion of our public float, by the Selling Securityholders, or the perception that such sales may occur, could have a significant negative impact on the trading price of Senti Common Stock.

This prospectus provides you with a general description of such securities and the general manner in which the Selling Securityholders may offer or sell the securities. More specific terms of any securities that the Selling Securityholders may offer or sell may be provided in a prospectus supplement that describes, among other things, the specific amounts and prices of the securities being offered and the terms of the offering. The prospectus supplement may also add, update or change information contained in this prospectus.

We will not receive any proceeds from the sale of Senti Common Shares by the Selling Securityholders pursuant to this prospectus. However, we will pay the expenses, other than any underwriting discounts and commissions, associated with the sale of securities pursuant to this prospectus. We are registering certain of the securities for resale pursuant to the Selling Securityholders' registration rights under certain agreements between us and the Selling Securityholders. Our registration of the securities covered by this prospectus does not mean that either we or the Selling Securityholders will issue, offer or sell, as applicable, any of the securities. The Selling Securityholders may offer and sell the securities covered by this prospectus in a number of different ways and at varying prices. We provide more information about how the Selling Securityholders may sell the shares in the section entitled "Plan of Distribution."

You should read this prospectus and any prospectus supplement or amendment carefully before you invest in our securities.

Our common stock is listed on The Nasdaq Global Market ("Nasdaq") under the symbol "SNTI". On October 25, 2023 the last quoted sale price for the Senti Common Shares as reported on Nasdaq was $0.30 per share.

We are an "emerging growth company" under applicable federal securities laws and will be subject to reduced public company reporting requirements.

Investing in our securities involves a high degree of risk. Before buying any securities, you should carefully read the discussion of the risks of investing in our securities in "Risk Factors" beginning on page 8 of this prospectus and any other risk factors contained in any applicable prospectus supplement and in the documents incorporated by reference herein and therein.

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

The date of this prospectus is , 2023.

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SELECTED DEFINITIONS

As used in this prospectus, unless otherwise noted or the context otherwise requires, references to the following capitalized terms have the meanings set forth below:

"Business Combination" means the transactions contemplated by the Business Combination Agreement, including the merger between Merger Sub and Senti.

"Business Combination Agreement" means the Business Combination Agreement, dated as of December 19, 2021, as amended or modified from time to time, including as amended by Amendment No. 1 to Business Combination Agreement, dated as of February 12, 2022 and Amendment No. 2, dated as of May 19, 2022, in each case, by and among DYNS, Merger Sub and Senti.

"Board" means the board of directors of Senti.

"Bylaws" means the Amended and Restated Bylaws of Senti.

"Contingency Consideration" means the aggregate of 2,000,000 Senti Common Shares that certain of the Selling Securityholders may be eligible to receive based on the share price of Senti Common Shares following the Business Combination or, in some circumstances, upon a change of control of Senti, as described in the Business Combination Agreement.

"Convertible Note" means the unsecured convertible promissory note in the principal amount of $5,175,000 issued by Senti Sub I, Inc. (formerly Senti Biosciences, Inc.), to Bayer Healthcare LLC on May 19, 2022.

"Certificate of Incorporation" or "Charter" means the Second Amended and Restated Certificate of Incorporation of Senti.

"DGCL" means the Delaware General Corporation Law, as may be amended from time to time.

"DYNS" means Dynamics Special Purpose Corp., a Delaware corporation.

"Exchange Act" means the Securities Exchange Act of 1934, as amended.

"JOBS Act" means the Jumpstart Our Business Startups Act of 2012.

"Merger Sub" means Explore Merger Sub, Inc., a Delaware corporation and wholly-owned subsidiary of DYNS.

"SEC" means the U.S. Securities and Exchange Commission.

"Securities Act" means the Securities Act of 1933, as amended.

"Senti" means Senti Biosciences, Inc., a Delaware corporation (which, prior to the consummation of the Business Combination, was known as DYNS).

"Senti Common Shares" means the common stock, par value $0.0001 per share, of Senti.

"Sponsor" means Dynamics Sponsor LLC, a Delaware limited liability company.

FORWARD-LOOKING STATEMENTS

This prospectus and some of the information incorporated by reference, includes forward-looking statements regarding, among other things, the plans, strategies, and prospects, both business and financial, of Senti. These statements are based on the beliefs and assumptions of the management of Senti. Although Senti believes that their respective plans, intentions, and expectations reflected in or suggested by these forward-looking statements are reasonable, it cannot assure you that it will achieve or realize these plans, intentions, or expectations. Forward-looking statements are inherently subject to risks, uncertainties, and assumptions. Generally, statements that are not historical facts, including statements concerning possible or assumed future actions, business strategies, events or results of operations, and any statements that refer to projections, forecasts, or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. These statements may be preceded by, followed by or include the words “believes”, “estimates”, “expects”, “projects”, “forecasts”, “may”, “might”, “will”, “should”, “seeks”, “plans”, “scheduled”, “possible”, “anticipates”, “intends”, “aims”, “works”, “focuses”, “aspires”, “strives” or “sets out” or similar expressions. Forward-looking statements are not guarantees of performance. You should not put undue reliance on these statements which speak only as of the date hereof. Forward-looking statements contained in this prospectus include, for example, statements about:

- our ability to realize the benefits expected from the Business Combination and from the Framework Agreement, dated August 7, 2023, by and among Senti, GeneFab, LLC and Valere Bio, Inc. and the transactions contemplated thereunder;
- the projected financial information, anticipated growth rate, and market opportunities of Senti;
- our ability to maintain the listing of Senti Common Shares on Nasdaq, and the potential liquidity and trading of such securities;
- the accuracy of our estimates and projections of financial information, including expenses, capital requirements, cash utilization, need for additional financing and market opportunities;
- our ability to execute and realize potential benefits from our strategic plans, including our plan to focus internal resources on SENTI-202, SENTI-401, and with potential partners, to develop gene circuits for other programs, as announced in January 2023;
- our ability to file and obtain clearance for any investigational new drug application, or IND, for SENTI-202 and any other product candidates we may identify, and to initiate and successfully complete our planned Phase 1 clinical trial for SENTI-202 and any other product candidates;
- our ability to grow and effectively manage the growth of our operations;
- our ability to raise financing to fund our operations, if and when needed;
- our success in retaining or recruiting, or adapting to changes in, our officers, key employees, or directors;
- the initiation, cost, timing, progress and results of research and development activities, preclinical studies or clinical trials with respect to our current and potential future product candidates;
- our ability to develop and advance our gene circuit platform technologies;
- our ability to identify product candidates using our gene circuit platform technologies;
- our ability to develop and commercialize product candidates that we identify;
- our ability to advance our current and potential future product candidates into, and successfully complete, preclinical studies and clinical trials;
- our ability to obtain and maintain regulatory approval of our current and potential future product candidates, and any related restrictions, limitations and/or warnings in the label of an approved product candidate;

- our ability to obtain and maintain intellectual property protection for our technologies and any of our product candidates;
- our ability to successfully commercialize our current and any potential future product candidates;
- the rate and degree of market acceptance of our current and any potential future product candidates;
- regulatory developments in the United States and international jurisdictions;
- potential liability lawsuits and penalties related to our technologies, product candidates and current and future relationships with third parties;
- our ability to attract and retain key scientific and management personnel;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately under those arrangements;
- our ability to compete effectively with existing competitors and new market entrants;
- our future financial performance and capital requirements;
- our ability to implement and maintain effective internal controls;
- the impact of supply chain disruptions;
- the impact of the COVID-19 pandemic on our business, including our preclinical studies and potential future clinical trials;
- unfavorable global economic conditions, including inflationary pressures, market volatility, acts of war and civil and political unrest; and
- our ability to implement remediation plans to address the material weaknesses that are described in our Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2023.

These and other factors that could cause actual results to differ from those implied by the forward-looking statements in this prospectus described under the heading "*Risk Factors*" and elsewhere in this prospectus. The risks described under the heading "*Risk Factors*" are not exhaustive. New risk factors emerge from time to time and it is not possible to predict all such risk factors, nor can we assess the impact of all such risk factors on the business of Senti or the extent to which any factor or combination of factors may cause actual results to differ materially from those contained in any forward-looking statements. All forward-looking statements attributable to Senti or to persons acting on our behalf are expressly qualified in their entirety by the foregoing cautionary statements. We undertake no obligations to update or revise publicly any forward-looking statements, whether as a result of new information, future events, or otherwise, except as required by law.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC using the "shelf" registration process. Under this shelf registration process, the Selling Securityholders may, from time to time, sell up to 35,444,908 shares of common stock in one or more offerings through any means described in the section entitled "*Plan of Distribution*." We will not receive any proceeds from the sale by such Selling Securityholders of the securities offered by them described in this prospectus.

A prospectus supplement may add, update or change information included in this prospectus. Any statement contained in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in such prospectus supplement modifies or supersedes such statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so superseded will be deemed not to constitute a part of this prospectus. You should rely only on the information contained in, or incorporated by reference into, this prospectus, and any applicable prospectus supplement. You should read both this prospectus and any applicable prospectus supplement or post-effective amendment to the registration statement together with the additional information to which we refer you in the sections of this prospectus entitled "*Where You Can Find More Information*."

Neither we nor the Selling Securityholders have authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus or any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. Neither we nor the Selling Securityholders take responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you.

This prospectus is an offer to sell only the securities offered hereby and only under circumstances and in jurisdictions where it is lawful to do so. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus. This prospectus is not an offer to sell securities, and it is not soliciting an offer to buy securities, in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus or any prospectus supplement is accurate only as of the date on the front of those documents and any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any applicable prospectus supplement, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

For investors outside the United States: neither we nor the Selling Securityholders have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of our securities and the distribution of this prospectus outside the United States.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under "*Where You Can Find More Information*."

This prospectus contains references to trademarks, trade names and service marks belonging to other entities. Solely for convenience, trademarks, trade names and service marks referred to in this prospectus may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that the applicable licensor will not assert, to the fullest extent under applicable law, its rights to these trademarks and trade names. We do not intend our use or display of other companies' trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

PROSPECTUS SUMMARY

The following summary highlights information contained elsewhere in this prospectus. It does not contain all the information you should consider before investing in the Senti Common Shares. You should read this entire prospectus carefully, including the sections titled "Risk Factors," "Business," "Management's Discussion and Analysis of Financial Condition and Results of Operations," "Where You Can Find More Information," "Unaudited Pro Forma Condensed Combined Financial Information," and our consolidated financial statements and related notes included elsewhere or incorporated by reference in this prospectus, before making an investment decision. In this prospectus, unless the context requires otherwise, all references to "we," "our," "us," "Senti," the "Registrant," and the "Company" refer to Senti Biosciences, Inc. and its consolidated subsidiaries following the Business Combination.

Overview

We are a preclinical biotechnology company developing next-generation cell and gene therapies engineered with our gene circuit platform technologies to fight challenging diseases. Our mission is to create a new generation of smarter medicines that outmaneuver complex diseases using novel and unprecedented approaches. To accomplish this mission, we have built a synthetic biology platform that we believe may enable us to program next-generation cell and gene therapies with what we refer to as "gene circuits." These gene circuits, which we created from novel and proprietary combinations of genetic parts, are designed to reprogram cells with biological logic to sense inputs, compute decisions and respond to their respective cellular environments. We aim to design and optimize gene circuits and to improve the "intelligence" of cell and gene therapies in order to enhance their therapeutic effectiveness against a broad range of diseases that conventional medicines are unable to address. Our gene circuit platform technologies are designed to be applied in a modality-agnostic manner, with applicability to natural killer (NK) cells, T cells, tumor infiltrating lymphocytes (TILs), stem cells including induced Pluripotent Stem Cells (iPSCs) Hematopoietic Stem Cells (HSCs), *in vivo* gene therapy, such as adeno associated virus (AAV), and messenger ribonucleic acid (mRNA).

Our internal pipeline is focused on using these gene circuits we engineer onto off-the-shelf healthy adult donor derived NK cells to create chimeric antigen receptor (CAR) NK cells to potentially address the high unmet need in multiple oncology indications. All of our current product candidates are in preclinical development. We expect to file an investigational new drug application, or IND, for our lead product candidate SENTI-202 in the second half of 2023.

Going Concern

We have incurred recurring losses and negative cash flows from operations, and have an accumulated deficit that raises substantial doubt about its ability to continue as a going concern. Similarly, our independent registered public accounting firm included an explanatory paragraph in its report on our consolidated financial statements as of and for the year ended December 31, 2022 with respect to this uncertainty.

Company Information

We were incorporated under the laws of the State of Delaware on June 9, 2016. Our principal executive offices are located at 2 Corporate Drive, First Floor, South San Francisco, CA 94080 and our telephone number is (650) 239-2030. Senti Common Stock is listed on the Nasdaq Capital Market under the symbol "SNTI".

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains an Internet website at www.sec.gov that contains reports, proxy and information statements and other information about issuers, like us, that file electronically with the SEC. We also maintain a website at https://sentibio.com. We make available, free of charge, on our investor relations website at https://investors.sentibio.com, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to these reports as soon as reasonably practicable after electronically filing or furnishing those reports to the SEC. Information contained on our website is not a part of or incorporated by reference into this prospectus and the inclusion of our website and investor relations website addresses in this prospectus is an inactive textual reference only.

Implications of Being an Emerging Growth Company

We are an "emerging growth company" as defined in the JOBS Act. As such, we may take advantage of reduced disclosure and other requirements otherwise generally applicable to public companies, including:

- exemption from the requirement to have our registered independent public accounting firm attest to management's assessment of our internal control over financial reporting;
- exemption from compliance with the requirement of the Public Company Accounting Oversight Board, or PCAOB, regarding the communication of critical audit matters in the auditor's report on the financial statements;
- reduced disclosure about our executive compensation arrangements; and exemption from the requirement to hold non-binding advisory votes on executive compensation or golden parachute arrangements.

We will remain an emerging growth company until the earliest to occur of: (1) the last day of the fiscal year in which we have at least $1.235 billion in annual revenue; (2) the date we qualify as a "large accelerated filer," with at least $700.0 million of equity securities held by non-affiliates and our net sales for the year exceed $100 million; (3) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period; and (4) December 31, 2026, the last day of the fiscal year ending after the fifth anniversary of the initial public offering of DYNS.

As a result of this status, we have taken advantage of reduced reporting requirements in this prospectus and may elect to take advantage of other reduced reporting requirements in our future filings with the SEC. In particular, in this prospectus and our other SEC filings incorporated by reference herein, we have not included all of the executive compensation-related information that would be required if we were not an emerging growth company.

THE OFFERING

Issuance of Senti Common Shares

Senti Common Shares to be issued upon issuance of all Earn-out Shares	Up to 2,000,000 Senti Common Shares.
Senti Common Shares outstanding prior to the issuance of the Earn-out Shares (as of October 25, 2023)	44,545,186 Senti Common Shares.
Use of Proceeds	We do not expect to receive any proceeds from the issuance of the Earn-out Shares or the resale of the Earn-out Shares by the Selling Securityholders.

Resale of Senti Common Shares by Selling Securityholders

Senti Common Shares offered by the Selling Securityholder	33,444,908 Senti Common Shares.
Use of proceeds	We will not receive any proceeds from the sale of the Senti Common Shares to be offered by the Selling Securityholders.
Lock-up Agreements	The securities that are owned by certain of the Selling Securityholders, including the parties to the Registration Rights Agreement and some of the parties to the PIPE subscription agreements, are subject to lock-up provisions and/or Lock-up Agreements, which provide for certain restrictions on transfer until the termination of applicable lock-up periods.
Trading Symbol	“SNTI”.
Risk Factors	Any investment in the securities offered hereby is speculative and involves a high degree of risk. You should carefully consider the information set forth under “Risk Factors” and elsewhere in this prospectus.

RISK FACTORS

Investing in the Senti Common Shares involves a high degree of risk. You should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K, any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in any applicable prospectus supplement before making an investment decision. The risks described in these documents are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be materially adversely affected. This could cause the trading price of our securities to decline, resulting in a loss of all or part of your investment. Please also carefully read the section titled "Cautionary Note Regarding Forward-Looking Statements."

USE OF PROCEEDS

All of the Senti Common Shares offered by the Selling Securityholders pursuant to this prospectus will be sold by the Selling Securityholders for their respective accounts. We will not receive any of the proceeds from the sale of the Senti Common Shares hereunder.

With respect to the registration of all Senti Common Shares offered by the Selling Securityholders pursuant to this prospectus, the Selling Securityholders will pay any underwriting discounts and commissions and expenses incurred by them for brokerage, accounting, tax or legal services or any other expenses incurred by them in disposing of the Securities. We will bear the costs, fees and expenses incurred in effecting the registration of the securities covered by this prospectus, including all registration and filing fees and fees and expenses of our counsel and our independent registered public accounting firm.

DETERMINATION OF OFFERING PRICE

We cannot currently determine the price or prices at which the Senti Common Shares may be sold by the Selling Securityholders under this prospectus. Senti Common Shares are listed on Nasdaq under the symbol “SNTI.”

SELLING SECURITYHOLDERS

This prospectus relates to our issuance of up to 2,000,000 Senti Common Shares from time to time upon the achievement of certain stock price thresholds and the possible offer and resale by the Selling Securityholders of up to 33,444,908 Senti Common Shares, consisting of up to (i) 15,168,616 Senti Common Shares originally issued to certain of our affiliates as consideration in connection with the Business Combination at a per share value of $10.00 per share, (ii) up to 6,233,292 Senti Common Shares issuable upon the exercise of stock options at exercise prices ranging from $2.66 to $9.92 per share, issued to certain of our affiliates upon the conversion of stock options in Senti Sub I, Inc. (formerly Senti Biosciences, Inc.) in connection with the Business Combination, (iii) 4,878,972 Senti Common Shares distributed by Sponsor to certain of its members who were affiliates of DYNS prior to the completion of the Business Combination, which shares were originally issued to Sponsor at a price per share of $0.004, (iv) 715,500 Senti Common Shares distributed by Sponsor to certain of its members who were affiliates of DYNS prior to the completion of the Business Combination, which shares were originally issued to Sponsor at a price per share of $10.00 in a private placement transaction completed concurrently with the initial public offering of DYNS, (v) 871,028 Senti Common Shares issued to the Anchor Investors in consideration for their agreement not to redeem their shares of Class A Common Stock of DYNS in connection with the Business Combination, (vi) 5,060,000 PIPE Shares originally purchased at a purchase price of $10.00 per share at the closing of the Business Combination and (vii) 517,500 Senti Common Shares issued to Bayer Healthcare LLC at an effective exchange price of $10.00 per share at the closing of the Business Combination upon the cancellation and exchange of the Convertible Note. Sales of the foregoing Senti Common Shares, which comprise a significant portion of our public float, by the Selling Securityholders, or the perception that such sales may occur, could have a significant negative impact on the trading price of Senti Common Stock.

The Selling Securityholders may from time to time offer and sell any or all of the Senti Common Shares set forth below pursuant to this prospectus. When we refer to the *"Selling Securityholders"* in this prospectus, we mean the persons listed in the table below, and the pledgees, donees, transferees, assignees, successors and others who later come to hold any of the Selling Securityholders' interest in the Senti Common Shares after the date of this prospectus such that registration rights shall apply to those securities.

The following table is prepared based on information provided to us by the Selling Securityholders. It sets forth the name and address of the Selling Securityholders, the aggregate number of Senti Common Shares beneficially owned as of the date of the initial prospectus, the aggregate number of Senti Common Shares that the Selling Securityholders may offer pursuant to this prospectus, and the number of Senti Common Shares beneficially owned by the Selling Securityholders after the sale of the securities offered hereby. We have based percentage ownership after this offering on 44,545,186 shares of common stock outstanding as of October 25, 2023.

We cannot advise you as to whether the Selling Securityholders will in fact sell any or all of such Senti Common Shares. In addition, the Selling Securityholders may sell, transfer or otherwise dispose of, at any time and from time to time, the Senti Common Shares in transactions exempt from the registration requirements of the Securities Act after the date of this prospectus. For purposes of this table, we have assumed that the Selling Securityholders will have sold all of the securities covered by this prospectus upon the completion of the offering. Any changed or new information given to us by the Selling Securityholders, including regarding the identity of, and the securities held by, each Selling Securityholder, will be set forth in a prospectus supplement or amendments to the registration statement of which this prospectus is a part, if and when necessary.

Please see the section entitled "*Plan of Distribution*" for further information regarding the Selling Securityholders' method of distributing these securities. For information regarding transactions between us and the Selling Securityholders, see the section entitled "*Certain Relationships and Related Person Transactions*."

Unless otherwise indicated below, the address of each Selling Securityholder listed in the tables below is c/o Senti Biosciences, Inc., 2 Corporate Drive, First Floor, South San Francisco, CA 94080.

Name of Selling Securityholder	Common Stock Beneficially Owned Prior to this Offering	Common Stock to be Sold in this Offering	Common Stock Owned After this Offering	Percent
Entities Affiliated with 8VC[1]	2,537,558	2,537,558	—	—
Alexandria Venture Investments, LLC[2]	338,263	100,000	238,263	*
Amgen Ventures LLC[3]	923,032	500,000	423,032	*
Mark Afrasiabi[4]	998,672	998,672	—	—
Bayer Healthcare LLC[5]	5,878,488	5,878,488	—	—
Susan Berland[6]	17,613	17,613	—	—
Caspian Capital LLC[7]	100,000	100,000	—	—
Rowan Chapman[8]	256,238	256,238	—	—
James J. Collins[9]	179,652	179,652		
Brenda Cooperstone[10]	31,438	31,438	—	—
Dynamics Group LLC[11]	1,947,403	1,947,403	—	—
David Epstein	123,252	123,252	—	—
Jay Flatley[12]	123,252	123,252	—	—
GPK Group, Inc.[13]	300,000	300,000	—	—
Green Sands Fund Z, LLC[14]	100,000	100,000	—	—
Curt A. Herberts IIII[15]	1,747,070	1,747,070	—	—
Invus Public Equities, L.P.[16]	1,055,555	555,555	500,000	1.12 %
KB Securities Co., Ltd.[17]	40,000	40,000	—	—
Deborah Knobelman[18]	1,094,483	1,094,483	—	—
Robert Langer[19]	75,000	75,000	—	—
Philip J. Lee[20]	2,087,924	2,087,924	—	—
LifeSci Venture Partners II, LP[21]	293,327	50,000	243,327	*
Timothy Lu[22]	4,574,128	4,574,128	—	—
Lux Ventures IV, L.P.[23]	828,454	10,000	818,454	1.84 %
Matrix Partners China VI Hong Kong Limited[24]	1,251,329	1,251,329	—	—
Entities Affiliated with Morgan Stanley Investment Management[25]	1,183,941	349,858	834,083	1.87 %
Entities Affiliated with NEA[26]	4,429,725	4,429,725	—	—
Dipchand (Deep) Nishar[27]	123,252	123,252	—	—
OCF 2014 Trust[28]	250,000	250,000	—	—
Parker Institute for Cancer Immunotherapy[29]	250,000	250,000	—	—
Mostafa Ronaghi[30]	2,197,403	2,197,403	—	—
Accounts Advised or Sub Advised by T. Rowe Price Associates[31]	3,916,551	922,144	2,994,407	6.72 %
ARK Genomic Revolution ETF[32]	2,410,394	243,471	2,166,923	4.86 %

* Indicates beneficial ownership less than 1%.

(1) Consists of (i) 2,498,277 shares of common stock held by 8VC Fund I, L.P. (“8VC”) and (ii) 39,281 shares of common stock held by 8VC Entrepreneurs Fund I, L.P. (“8VC Entrepreneurs” and, collectively with 8VC, the “8VC Entities”). 8VC GP I, LLC (“8VC GP I”), as general partner of each of the 8VC Entities, has sole voting and dispositive power with respect to the securities held by the 8VC Entities. Joe Lonsdale, in his capacity as the managing member of 8VC GP I, has sole voting and dispositive power with respect to the shares held by

the 8VC Entities. Mr. Lonsdale and 8VC GP I disclaim beneficial ownership of the shares held by the 8VC Entities. The address of each of the 8VC Entities is 907 South Congress Avenue, Austin, Texas 78704.

(2) The address for this entity is 26 North Euclid Avenue, Pasadena, CA 91101.

(3) Amgen Ventures LLC is a wholly-owned subsidiary of Amgen Inc. The address for these entities is One Amgen Center Drive, Thousand Oaks, CA 91320.

(4) The address for this individual is 711 El Medio Avenue, Pacific Palisades, CA 90272.

(5) Consists of 5,878,488 shares of common stock held by Bayer HealthCare LLC ("Bayer"). Bayer is an indirect wholly-owned subsidiary of Bayer AG, which may be deemed to be an indirect beneficial owner of the shares owned directly by Bayer. Kelly Gast, President of Bayer, and Brian Branca, Treasurer of Bayer, share voting and dispositive power over the shares held by Bayer. The address of Bayer is 100 Bayer Boulevard, Whippany, New Jersey 07981.

(6) Consists of 17,613 shares of common stock issuable upon the exercise of stock options.

(7) Jeffrey Huber and Angel Vossough Modarres exercise voting and dispositive power over these shares. The address for these individuals and this entity is 930 Tahoe Boulevard, Suite 802, #812, Incline Village, NV 89451.

(8) The address for this individual is 2875 El Camino Real, Redwood City, CA 94061.

(9) Consists of 176,130 shares of common stock held directly and 3,522 shares of common stock issuable upon the exercise of stock options.

(10) Consists of 31,438 shares of common stock issuable upon the exercise of stock options.

(11) Omid Farokhzad exercises voting and dispositive power over these shares. The address for this individual and this entity is 125 Yarmouth Road, Chestnut Hill, MA 02467.

(12) The address for this individual is 6725 Calle Ponte Bella, Rancho Santa Fe, CA 92091.

(13) S. Peter Lee exercises voting and dispositive power over these shares. The address for this individual and this entity is 17900 Ridgeway Road, Granada Hills, CA 91344.

(14) Reema Khan exercises voting and dispositive power over these shares. The address for this individual and this entity is 548 Palmer Lange, Menlo Park, CA 94025.

(15) Consists of 454,208 shares of common stock held by the C. and E. Herberts Revocable Trust dated July 17, 2013, over which Curt A. Herberts III and his spouse share voting and investment power as trustee, and 1,292,862 shares of common stock issuable upon the exercise of stock options.

(16) Invus Public Equities, L.P. ("Invus PE") directly holds 1,055,555 shares of common stock. Invus Public Equities Advisors, LLC ("Invus PE Advisors") controls Invus PE, as its general partner and accordingly, may be deemed to beneficially own the shares held by Invus PE. The Geneva branch of Artal International S.C.A. ("Artal International") controls Invus PE Advisors, as its managing member and accordingly, may be deemed to beneficially own the shares held by Invus PE. Artal International Management S.A. ("Artal International Management") as the managing partner of Artal International, controls Artal International and accordingly, may be deemed to beneficially own shares that Artal International may be deemed to beneficially own. Artal Group S.A., as the sole stockholder of Artal International Management, controls Artal International Management and accordingly, may be deemed to beneficially own the Shares that Artal International Management may be deemed to beneficially own. Westend S.A. ("Westend"), as the parent company of Artal Group S.A.("Artal Group") controls Artal Group and accordingly, may be deemed to beneficially own the shares that Artal Group may be deemed to beneficially own. Stichting Administratiekantoor Westend (the "Stichting"), as majority shareholder of Westend controls Westend and accordingly, may be deemed to beneficially own the shares that Westend may be deemed to beneficially own. As of June 8, 2022 , Mr. Amaury Wittouck, as the sole member of the board of the Stichting, controls the Stichting and accordingly, may be deemed to beneficially own the shares that the Stichting may be deemed to beneficially own. The address for Invus PE and Invus PE Advisors is 750 Lexington Avenue, 30th Floor, New York, NY 10022. The address for Artal International, Artal International Management, Artal Group, Stichting and Mr. Amaury Wittouck is Valley Park, 44, Rue de la Vallée, L-2661, Luxembourg.

(17) Consists of (i) 20,000 shares of common stock held by KB Securities Co., Ltd. not in its corporate capacity but solely in its capacity as trustee on behalf of Smilegate Bamboo Fund 2 and (ii) 20,000 shares of common stock held by KB Securities Co., Ltd. not in its corporate capacity but solely in its capacity as trustee on behalf of Smilegate Bamboo Shoot Fund. The address for these entities is 50, Yeouinaru-ro, Yeongdeungpo-gu, Seoul 07328, Korea.

(18) Consists of 1,094,483 shares of common stock issuable upon the exercise of stock options.

(19) The address for this individual is 98 Montvale Road, Newton, MA 02459.

(20) Consists of 936,424 shares of common stock held directly and 1,151,500 shares of common stock issuable upon the exercise of stock options.

(21) Paul Yook, as managing member of LifeSci Venture Partners II, LP exercises voting and dispositive power over the shares. The address for this entity and individual is 250 West 55th Street, Suite 3401, New York, NY 10019.

(22) Consists of (i) 559,496 shares of common stock held directly, (ii) 528,390 shares of common stock held by the individual's spouse, (iii) 528,390 shares of common stock held by Luminen Services, LLC, as trustee of the Luminen Trust, of which Timothy Lu is the settlor (and over which Dr. Lu disclaims beneficial ownership of, except to the extent of his pecuniary interest therein), and (iv) 2,957,852 shares of common stock issuable upon the exercise of stock options.

(23) Lux Venture Partners IV, LLC ("LVP4") is the general partner of Lux Ventures IV, L.P. ("LV4") and exercises voting and dispositive power over the shares held by LV4. Peter James Hebert ("PH") and Joshua Howard Wolfe ("JW") are the sole managing members of LVP4 and may be deemed to share voting and dispositive power over the shares held by LV4. PH and JW disclaim beneficial ownership of the shares held by LV4 except to the extent of their pecuniary interests therein. The address for these entities and individuals is 920 Broadway, 11th Floor, New York, NY, 10010.

(24) Matrix Partners China VI Hong Kong Limited is owned by Matrix Partners China VI, L.P. ("MPCVI") and Matrix Partners China VI-A, L.P. ("MPCVI-A"). The general partner of MPCVI and MPCVI-A is Matrix China Management VI, L.P. ("MCM"). The general partner of MCM is Matrix China VI GP GP, Ltd. ("MCVI"). Timothy A. Barrows, David Ying Zhang, David Su and Harry Ho Kee Man are directors of MCVI and are deemed to have shared investment voting power over the shares held by MPCVI and MPCVI-A. The address of these entities is Flat 2807, 28/F, AIA Central, No.1 Connaught Road, Central, Hong Kong. The address of Timothy A. Barrows is 101 Main St., 17th Floor, Cambridge, MA 02142. The address of David Ying Zhang, Harry Ho Kee Man and David Su is c/o Matrix China Advisors, Suite 2601, Taikang Financial Tower, No. 38, East 3rd Ring Road North, Chaoyang District, Beijing, 100026, China.

(25) Consists of (i) 697,602 shares of common stock held by Morgan Stanley Institutional Fund, Inc. — Inception Portfolio, (ii) 329,210 shares of common stock held by Inception Trust, (iii) 1,414 shares of common stock held by Morgan Stanley Institutional Fund, Inc. — Counterpoint Global Portfolio, (iv) 744 shares of common stock held by Morgan Stanley Investment Fund — Counterpoint Global Fund and (v) 154,971 shares of common stock held by EQ Advisors Trust — EQ/Morgan Stanley. The address for these entities is 522 Fifth Avenue, New York, NY 10036.

(26) Consists of (i) 4,426,151 shares of common stock held by New Enterprise Associates 15, L.P. ("NEA 15") and (ii) 3,574 shares of common stock held by NEA Ventures 2018, L.P. ("Ven 2018"). The securities directly held by NEA 15 are indirectly held by NEA Partners 15, L.P. ("NEA Partners 15"), which is the sole general partner of NEA 15, NEA 15 GP, LLC ("NEA 15 LLC"), which is the sole general partner of NEA Partners 15, and each of the individual managers of NEA 15 LLC. The individual managers of NEA 15 LLC (collectively the "NEA 15 Managers") are Forest Baskett, Anthony A. Florence, Mohamad Makhzoumi, Scott D. Sandell and Peter Sonsini. NEA 15, NEA Partners 15, NEA 15 LLC and the NEA 15 Managers share voting and dispositive power with regard to the shares directly held by NEA 15. The securities directly held by Ven 2018 are indirectly held by Karen P. Welsh, the general partner of Ven 2018. Mr. Edward Mathers, a member of the board of directors of the Combined Company, is a partner at New Enterprise Associates, Inc., which is affiliated with NEA 15 and Ven 2018, but does not have voting or investment power over the shares held by NEA 15 or Ven 2018. All indirect holders of the above referenced shares disclaim beneficial ownership of all applicable shares of Common Stock. The address for these entities and individuals is 1954 Greenspring Drive, Suite 600, Timonium, Maryland 21093.

(27) The address for this individual is c/o ICONIQ Capital, 394 Pacific Avenue, 2nd Floor, San Francisco, CA 94111.

(28) Leela Ghaffari is the investment advisor with respect to these shares of common stock, with an address of 15 Central Park West #37A, New York, NY 10023. The address of OCF 2014 Trust is 500 Stanton Christiana Road, Newark, DE 19713.

(29) The address for this entity is 1 Letterman Drive, D3500, San Francisco, CA 94129.

(30) Consists of 1,947,403 shares of common stock held by Mostafa Ronaghi and 250,000 shares held by Ronaghi Revocable Trust. The address for these stockholders is 95 Stern Lange, Atherton, CA 94027.

(31) Consists of (i) 1,688,908 shares of common stock held by T. Rowe Price Health Sciences Fund, Inc., (ii) 75,977 shares of common stock held by T. Rowe Price Health Sciences Portfolio, (iii) 1,626,003 shares held by T. Rowe Price New Horizons Fund, Inc., (iv) 200,916 shares held by T. Rowe Price New Horizons Fund Trust, (v) 9,952 shares held by T. Rowe Price U.S. Equities Trust, (vi) 144,636 shares of common stock held by TD Mutual Funds—TD Health Sciences Fund, (vii) 1,761 shares of common stock held by Saint-Gobain Corporation, (viii) 38,709 shares of common stock held by New York City Deferred Compensation Plan, (ix) 16,675 shares of common stock held by Dow Retirement Group Trust, (x) 5,739 shares of common stock held by Master Trust Agreement Between Pfizer Inc. & The Northern Trust Company, (xi) 6,130 shares of common stock held by Bank of America Pension Plan, (xii) 6,069 shares of common stock held by MassMutual Select Funds — MassMutual Select T. Rowe Price Small and Mid Cap Blend Fund, (xiii) 31,062 shares of common stock held by Johnson & Johnson Pension and Savings Plans Master Trust, (xiv) 13,193 shares of common stock held by EQ Advisors Trust — EQ/T. Rowe Health Sciences Portfolio, (xv) 2,934 shares of common stock held by Swarthmore College, (xvi) 18,789 shares of common stock held by John Hancock Variable Insurance Trust — Health Sciences Trust, (xvii) 26,772 shares of common stock held by John Hancock Funds II — Health Sciences Fund, and (xviii) 2,326 shares of common stock held by Johnson and Johnson Pension and Savings Plan Master Trust. T. Rowe Price Associates, Inc. ("TRPA") serves as investment adviser or subadviser with power to direct investments and/or sole power to vote the securities. For purposes of reporting requirements of the Securities Exchange Act of 1934, TRPA may be deemed to be the beneficial owner of all of these shares; however, TRPA expressly disclaims that it is, in fact, the beneficial owner of such securities. TRPA is the wholly owned subsidiary of T. Rowe Price Group, Inc., which is a publicly traded financial services holding company. The address of each of these entities is 100 East Pratt Street, Baltimore, MD 21202.

(32) The address of this entity is 200 Central Avenue, Suite 1850, Saint Petersburg, FL 33701.

DESCRIPTION OF SECURITIES

The following description summarizes certain important terms of our capital stock as of the date of this prospectus as specified in our Charter and Bylaws. Because the following description is only a summary, it does not contain all the information that may be important to you. For a complete description of the matters set forth in this section titled "Description of Securities," you should refer to the Charter, the Bylaws and the Registration Rights Agreement, which are included as exhibits to the registration statement of which this prospectus is a part, and to the applicable provisions of Delaware law.

Authorized and Outstanding Stock

The Charter authorizes the issuance of 510,000,000 shares, consisting of 500,000,000 shares of common stock, $0.0001 par value per share, and 10,000,000 shares of preferred stock, $0.0001 par value. As of October 25, 2023, there were 44,545,186 shares of common stock outstanding. No shares of preferred stock are currently outstanding.

Common Stock

The Charter provides the following with respect to the rights, powers, preferences and privileges of the Senti Common Shares.

Voting Power

Except as otherwise required by law or as otherwise provided in any certificate of designation for any series of preferred stock, the holders of Senti Common Shares possess all voting power for the election of the directors and all other matters requiring stockholder action. Holders of Senti Common Shares are entitled to one vote per share on matters to be voted on by stockholders.

Dividends

Holders of Senti Common Shares will be entitled to receive such dividends, if any, as may be declared from time to time by our board of directors in its discretion out of funds legally available therefor. We have not historically paid any cash dividends on Senti Common Stock to date and do not intend to pay cash dividends in the foreseeable future. Any payment of cash dividends in the future will be dependent upon our revenues and earnings, if any, capital requirements and general financial conditions. In no event will any stock dividends or stock splits or combinations of stock be declared or made on Senti Common Shares unless the Senti Common Shares at the time outstanding are treated equally and identically.

Liquidation, Dissolution and Winding Up

In the event of our voluntary or involuntary liquidation, dissolution or winding-up, the net assets of Senti will be distributed pro rata to the holders of Senti Common Shares, subject to the rights of the holders of the preferred stock, if any.

Preemptive or Other Rights

There are no sinking fund provisions applicable to the Senti Common Shares.

Preferred Stock

The Charter provides that shares of preferred stock may be issued from time to time in one or more series. Our board of directors will be authorized to fix designations, powers, including voting powers, full or limited, or no voting powers, preferences and the relative, participating, optional or other special rights of the shares of each series of preferred stock and any qualifications, limitations and restrictions thereof. Our board of directors will be able to, without stockholder approval, issue preferred stock with voting and other rights that could adversely affect the voting power and other rights of the holders of the Senti Common Shares and could have anti-takeover effects. The ability of our board of directors to issue preferred stock without stockholder approval could have the effect of

delaying, deferring or preventing a change of control of Senti or the removal of existing management. We have no preferred stock currently outstanding.

Registration Rights

We, DYNS, and certain of our stockholders entered into the Investor Rights and Lock-Up Agreement, dated June 8, 2022, pursuant to which, among other things, such stockholders were granted certain registration rights with respect to certain shares of securities held by them. A copy of the Investor Rights and Lock-Up Agreement is attached as an exhibit hereto and incorporated herein by reference.

We and Chardan Capital Markets LLC ("Chardan") entered into a Registration Rights Agreement, dated August 31, 2022, pursuant to which, among other things, we agreed to file a registration statement registering the resale by Chardan of shares of Senti Common Stock issued to it by us pursuant to the Common Stock Purchase Agreement, dated August 31, 2022, by and between us and Chardan and to maintain the effectiveness of such resale registration statement. A copy of the Registration Rights Agreement is attached as an exhibit hereto and incorporated herein by reference.

We and GeneFab, LLC ("GeneFab") entered into a letter agreement (the "Option Agreement"), pursuant to which GeneFab has the right to invest up to approximately $20 million to purchase up to 19,633,444 shares of Senti Common Stock, subject to approval by our stockholders to the extent required pursuant to applicable Nasdaq rules, at a price of $1.01867 per share in private placements in up to ten installments. Pursuant to the Option Agreement, we also agreed to register all of the shares of common stock purchased by GeneFab under the Option Agreement for resale by filing up to four registration statements, subject to certain conditions and restrictions contained in the Option Agreement, is attached as an exhibit hereto and incorporated herein by reference.

Anti-Takeover Provisions

Charter and Bylaws

Among other things, the Charter and Bylaws (as amended from time to time):

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate, including the right to approve an acquisition or other change of control;
- provide that our number of directors may be changed only by resolution of our board of directors;
- provide that, subject to the rights of any series of preferred stock to elect directors, directors may be removed only with cause by the holders of at least 75% of all of our then-outstanding shares of the capital stock entitled to vote generally at an election of directors;
- provide that all vacancies, subject to the rights of any series of preferred stock, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide advance notice in writing, and also specify requirements as to the form and content of a stockholder's notice;
- provide that special meetings of our stockholders may be called by our board of directors pursuant to a resolution adopted by a majority of the board;
- provide that our board of directors will be divided into three classes of directors, with the directors serving three-year terms, therefore making it more difficult for stockholders to change the composition of the board of directors; and

- not provide for cumulative voting rights, therefore allowing the holders of a majority of the Senti Common Shares entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose.

The combination of these provisions make it more difficult for the existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Because our board of directors will have the power to retain and discharge its officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock will make it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change the control of Senti.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and 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 our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of the our stock.

Certain Anti-Takeover Provisions of Delaware Law

We are subject to the provisions of Section 203 of the DGCL. This statute prevents certain Delaware corporations, under certain circumstances, from engaging in a "business combination" with:

- a stockholder who owns 15% or more of our outstanding voting stock (otherwise known as an "interested stockholder");
- an affiliate of an interested stockholder; or
- an associate of an interested stockholder, for three years following the date that the stockholder became an interested stockholder.

A "business combination" includes a merger or sale of more than 10% of a corporation's assets. However, the above provisions of Section 203 would not apply if:

- the relevant board of directors approves the transaction that made the stockholder an "interested stockholder," prior to the date of the transaction;
- after the completion of the transaction that resulted in the stockholder becoming an interested stockholder, that stockholder owned at least 85% of the corporation's voting stock outstanding at the time the transaction commenced, other than statutorily excluded shares of common stock; or
- on or subsequent to the date of the transaction, the initial business combination is approved by the board of directors and authorized at a meeting of the corporation's stockholders, and not by written consent, by an affirmative vote of at least two-thirds of the outstanding voting stock not owned by the interested stockholder.

These provisions may have the effect of delaying, deferring, or preventing changes in control of Senti.

Transfer Agent

Continental Stock Transfer & Trust Company is the transfer agent for the Senti Common Shares.

Trading Symbol and Market

Senti Common Shares are listed on Nasdaq under the symbol "SNTI".

PLAN OF DISTRIBUTION

We are registering the issuance by us of 2,000,000 Senti Common Shares that may be issued from time to time upon achievement of certain stock price thresholds (the "Earn-Out Shares"). We are also registering the resale by the Selling Securityholders of up to 33,444,908 additional Senti Common Shares.

Once issued and upon effectiveness of the registration statement of which this prospectus forms a part, the securities beneficially owned by the Selling Securityholders covered by this prospectus may be offered and sold from time to time by the Selling Securityholders. The term "Selling Securityholders" includes donees, pledgees, transferees or other successors in interest selling securities received after the date of this prospectus from a Selling Securityholder as a gift, pledge, partnership distribution or other transfer. The Selling Securityholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. Such sales may be made on one or more exchanges or in the over-the-counter market or otherwise, at prices and under terms then prevailing or at prices related to the then current market price or in negotiated transactions. Each Selling Securityholder reserves the right to accept and, together with its respective agents, to reject, any proposed purchase of securities to be made directly or through agents. The Selling Securityholders and any of their permitted transferees may sell their securities offered by this prospectus on any stock exchange, market or trading facility on which the securities are traded or in private transactions.

Subject to any limitations set forth in any applicable agreement that provides for registration rights, the Selling Securityholders may use any one or more of the following methods when selling the securities offered by this prospectus:

- purchases by a broker-dealer as principal and resale by such broker-dealer for its own account pursuant to this prospectus;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- one or more underwritten offerings;
- block trades in which the broker-dealer so engaged will attempt to sell the securities as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- an exchange distribution in accordance with the rules of the applicable exchange;
- in market transactions, including transactions on a national securities exchange or quotations service or over-the-counter market;
- distributions to their members, partners or stockholders;
- settlement of short sales entered into after the date of the registration statement of which this prospectus is a part is declared effective by the SEC;
- agreements with broker-dealers to sell a specified number of the securities at a stipulated price per share;
- in "at the market" offerings, as defined in Rule 415 under the Securities Act, at negotiated prices, at prices prevailing at the time of sale or at prices related to such prevailing market prices, including sales made directly on a national securities exchange or sales made through a market maker other than on an exchange or other similar offerings through sales agents;
- directly to purchasers, including through a specific bidding, auction or other process or in privately negotiated transactions;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- through a combination of any of the above methods of sale; or

- any other method permitted pursuant to applicable law.

In addition, a Selling Securityholder that is an entity may elect to make an in-kind distribution of securities to its members, partners, stockholders or other equityholders pursuant to the registration statement of which this prospectus is a part by delivering a prospectus. Such members, partners, stockholders or other equityholders that are not affiliates of ours would thereby receive freely tradeable securities pursuant to the distribution through a registration statement. To the extent a distributee is an affiliate of ours (or to the extent otherwise required by law), we may file a prospectus supplement in order to permit the distributees to use the prospectus to resell the securities acquired in the distribution.

The Selling Securityholders also may transfer the securities in other circumstances, in which case the transferees, pledgees or other successors-in-interest will be the selling beneficial owners for purposes of this prospectus. Upon being notified by a Selling Securityholder that a donee, pledgee, transferee, other successor-in-interest intends to sell our securities, we will, to the extent required, promptly file a supplement to this prospectus to name specifically such person as a Selling Securityholder.

To the extent required, the Senti Common Shares to be sold, the names of the Selling Securityholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

The Selling Securityholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the Senti Common Shares in the course of hedging the positions they assume. The Selling Securityholders may also sell the Senti Common Shares short and deliver these securities to close out their short positions, or loan or pledge the Senti Common Shares to broker-dealers that in turn may sell these shares. The Selling Securityholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The Selling Securityholders also may in the future resell a portion or all of the Senti Common Shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule, or pursuant to other available exemptions from the registration requirements of the Securities Act.

Selling Securityholders may use this prospectus in connection with resales of the Senti Common Shares. This prospectus and any accompanying prospectus supplement will identify the Selling Securityholders, the terms of the Senti Common Shares and any material relationships between us and the Selling Securityholders. In offering the securities covered by this prospectus, the Selling Securityholders and any underwriters, broker-dealers or agents who execute sales for the Selling Securityholders may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. Any discounts, commissions, concessions or profit they earn on any resale of those securities may be underwriting discounts and commissions under the Securities Act. Unless otherwise set forth in a prospectus supplement, the Selling Securityholders will receive all the net proceeds from the resale of the Senti Common Shares. If any Selling Securityholder is an “underwriter” within the meaning of Section 2(11) of the Securities Act, then the Selling Securityholder will be subject to the prospectus delivery requirements of the Securities Act. Underwriters and their controlling persons, dealers and agents may be entitled, under agreements entered into with us and the Selling Securityholder, to indemnification against and contribution toward specific civil liabilities, including liabilities under the Securities Act.

In order to comply with the securities laws of certain states, if applicable, the securities must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

We have advised the Selling Securityholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the Selling Securityholders and their affiliates. In addition, to the extent applicable we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the Selling Securityholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The Selling Securityholders may indemnify any broker-dealer that participates in transactions involving the sale of the Senti Common Shares against certain liabilities, including liabilities arising under the Securities Act.

We are required to pay all fees and expenses incident to the registration of shares of the Senti Common Shares to be offered and sold pursuant to this prospectus.

LEGAL MATTERS

Goodwin Procter LLP has passed upon the validity of the Senti Common Shares offered by this prospectus and certain other legal matters related to this prospectus.

EXPERTS

The consolidated financial statements of Senti Biosciences, Inc. and its subsidiaries as of December 31, 2022 and 2021, and for each of the years in the two-year period ended December 31, 2022, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2022 consolidated financial statements contains an explanatory paragraph that states that Senti Biosciences, Inc. and its subsidiaries' have incurred recurring losses and negative cash flows from operations and has an accumulated deficit that raises substantial doubt about the entity's ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of that uncertainty.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth or incorporated by reference in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document. You may obtain copies of the registration statement and its exhibits via the SEC's EDGAR database. We have also filed a registration statement on Form S-1, including exhibits, under the Securities Act, with respect to the common stock offered by this prospectus.

In addition, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public on a website maintained by the SEC located at *www.sec.gov.* We also maintain a website at *https://sentibio.com/.* Through our website, we make available, free of charge, annual, quarterly and current reports, proxy statements and other information as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained on, or that may be accessed through, our website is not part of, and is not incorporated into, this prospectus. Information contained on our website is not a part of or incorporated by reference into this prospectus and the inclusion of our website and investor relations website addresses in this prospectus is an inactive textual reference only.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

This registration statement incorporates by reference important business and financial information about us that is not included in or delivered with this document. The information incorporated by reference is considered to be part of this prospectus, and the SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus. Any statement contained in this prospectus or a document incorporated or deemed to be incorporated by reference herein or therein shall be deemed to be modified or superseded for the purposes of this prospectus to the extent that a statement contained herein or in any subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes that prior statement. The modifying or superseding statement need not state that it has modified or superseded a prior statement or include any other information set forth in the document that it modifies or supersedes. The making of a modifying or superseding statement shall not be deemed an admission for any purposes that the modified or superseded statement, when made, constituted a misrepresentation, an untrue statement of a material fact or an omission to state a material fact that is required to be stated or that is necessary to make a statement not misleading in light of the circumstances in which it was made. Any statement so modified or superseded shall not be considered in its unmodified or superseded form to constitute a part of this prospectus, except as so modified or superseded.

We hereby incorporate by reference into this prospectus the following documents that we have filed with the SEC under the Exchange Act:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on March 22, 2023;
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2022, from our definitive proxy statement on Schedule 14A (other than information furnished rather than filed), which was filed with the SEC on May 1, 2023;
- Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023 and June 30, 2023, filed with the SEC on May 9, 2023 and August 11, 2023, respectively;
- Current Reports on Form 8-K filed with the SEC on January 9, 2023, January 27, 2023, March 22, 2023, April 28, 2023, May 9, 2023, June 23, 2023, August 10, 2023, August 11, 2023 and August 11, 2023 (excluding information furnished pursuant to Items 2.02 or 7.01, or corresponding information furnished under Item 9.01 or included as an exhibit); and
- The description of our securities contained in our Annual Report on Form 10-K filed with the SEC on March 22, 2023, including any amendments or reports filed for the purpose of updating such description.

All documents that we file pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act (other than any such documents or portions thereof that are deemed to have been furnished and not filed in accordance with the rules of the SEC), after the date hereof and prior to the termination of an offering of securities under this prospectus shall be deemed to be incorporated by reference into this prospectus and will automatically update and supersede the information in this prospectus, the applicable prospectus supplement and any previously filed documents.

We will furnish without charge to each person, including any beneficial owner, to whom a prospectus is delivered, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. Any such request may be made by writing or calling us at the following address or phone number:

Senti Biosciences, Inc.
2 Corporate Drive, First Floor
South San Francisco, CA 94080
Telephone: (650) 239-2030
Attention: Investor Relations

35,444,908 Shares of Common Stock

PROSPECTUS

, 2023

You should rely only on the information contained in this prospectus or any supplement or amendment hereto. We have not authorized anyone to provide you with different information. You should not assume that the information contained in this prospectus or any supplement or amendment hereto is accurate as of any date other than the date of this prospectus or any such supplement or amendment. Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated expenses to be borne by the registrant in connection with the securities being registered hereby. In addition, we may incur additional expenses in the future in connection with the offering of our securities pursuant to this prospectus. If required, any such additional expenses will be disclosed in a prospectus supplement.

Expense	Estimated Amount
Securities and Exchange Commission registration fee	$ 7,360.07
Accounting fees and expenses	*
Legal fees and expenses	*
Financial printing and miscellaneous expenses	*
Total	$ *

* These fees are calculated based on the securities offered and the number of issuances and accordingly cannot be defined at this time.

We will pay the expenses, other than underwriting discounts and commissions and certain expenses incurred by the Selling Securityholders in disposing of the securities, associated with the sale of securities pursuant to this prospectus. The Selling Securityholders will bear all underwriting commissions and discounts, if any, attributable to their sale of the securities.

Item 15. Indemnification of Directors and Officers

Our amended and restated certificate of incorporation provides that all of our directors, officers, employees and agents shall be entitled to be indemnified by us to the fullest extent permitted by Section 145 of the DGCL. Section 145 of the DGCL concerning indemnification of officers, directors, employees and agents is set forth below.

Section 145. Indemnification of officers, directors, employees and agents; insurance.

(a) A corporation shall have power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that the person's conduct was unlawful.

(b) A corporation shall have power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement

of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

(c) To the extent that a present or former director or officer of a corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in subsections (a) and (b) of this section, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

(d) Any indemnification under subsections (a) and (b) of this section (unless ordered by a court) shall be made by the corporation only as authorized in the specific case upon a determination that indemnification of the present or former director, officer, employee or agent is proper in the circumstances because the person has met the applicable standard of conduct set forth in subsections (a) and (b) of this section. Such determination shall be made, with respect to a person who is a director or officer at the time of such determination, (1) by a majority vote of the directors who are not parties to such action, suit or proceeding, even though less than a quorum, or (2) by a committee of such directors designated by majority vote of such directors, even though less than a quorum, or (3) if there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion, or (4) by the stockholders.

(e) Expenses (including attorneys' fees) incurred by an officer or director in defending any civil, criminal, administrative or investigative action, suit or proceeding may be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount if it shall ultimately be determined that such person is not entitled to be indemnified by the corporation as authorized in this section. Such expenses (including attorneys' fees) incurred by former officers and directors or other employees and agents may be so paid upon such terms and conditions, if any, as the corporation deems appropriate.

(f) The indemnification and advancement of expenses provided by, or granted pursuant to, the other subsections of this section shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office. A right to indemnification or to advancement of expenses arising under a provision of the certificate of incorporation or a bylaw shall not be eliminated or impaired by an amendment to such provision after the occurrence of the act or omission that is the subject of the civil, criminal, administrative or investigative action, suit or proceeding for which indemnification or advancement of expenses is sought, unless the provision in effect at the time of such act or omission explicitly authorizes such elimination or impairment after such action or omission has occurred.

(g) A corporation shall have power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under this section.

(h) For purposes of this section, references to "the corporation" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such

constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under this section with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued.

(i) For purposes of this section, references to "other enterprises" shall include employee benefit plans; references to "fines" shall include any excise taxes assessed on a person with respect to any employee benefit plan; and references to "serving at the request of the corporation" shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the corporation" as referred to in this section.

(j) The indemnification and advancement of expenses provided by, or granted pursuant to, this section shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

(k) The Court of Chancery is hereby vested with exclusive jurisdiction to hear and determine all actions for advancement of expenses or indemnification brought under this section or under any by law, agreement, vote of stockholders or disinterested directors, or otherwise. The Court of Chancery may summarily determine a corporation's obligation to advance expenses (including attorneys' fees).

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons pursuant to the foregoing provisions, or otherwise, 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. In the event that a claim for indemnification against such liabilities (other than the payment of expenses incurred or paid by a director, officer or controlling person in a successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, we will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to the court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

In accordance with Section 102(b)(7) of the DGCL, our amended and restated certificate of incorporation provides that no director shall be personally liable to us or any of our stockholders for monetary damages resulting from breaches of their fiduciary duty as directors, except to the extent such limitation on or exemption from liability is not permitted under the DGCL. The effect of this provision of our amended and restated certificate of incorporation is to eliminate our rights and those of our stockholders (through stockholders' derivative suits on our behalf) to recover monetary damages against a director for breach of the fiduciary duty of care as a director, including breaches resulting from negligent or grossly negligent behavior, except, as restricted by Section 102(b)(7) of the DGCL. However, this provision does not limit or eliminate our rights or the rights of any stockholder to seek non-monetary relief, such as an injunction or rescission, in the event of a breach of a director's duty of care.

If the DGCL is amended to authorize corporate action further eliminating or limiting the liability of directors, then, in accordance with our amended and restated certificate of incorporation, the liability of our directors to us or our stockholders will be eliminated or limited to the fullest extent authorized by the DGCL, as so amended. Any repeal or amendment of provisions of our amended and restated certificate of incorporation limiting or eliminating the liability of directors, whether by our stockholders or by changes in law, or the adoption of any other provisions inconsistent therewith, will (unless otherwise required by law) be prospective only, except to the extent such amendment or change in law permits us to further limit or eliminate the liability of directors on a retroactive basis.

Our amended and restated certificate of incorporation also provides that we will, to the fullest extent authorized or permitted by applicable law, indemnify our current and former officers and directors, as well as those persons who, while directors or officers of our corporation, are or were serving as directors, officers, employees or agents of

another entity, trust or other enterprise, including service with respect to an employee benefit plan, in connection with any threatened, pending or completed proceeding, whether civil, criminal, administrative or investigative, against all expense, liability and loss (including, without limitation, attorney's fees, judgments, fines, ERISA excise taxes and penalties and amounts paid in settlement) reasonably incurred or suffered by any such person in connection with any such proceeding.

Notwithstanding the foregoing, a person eligible for indemnification pursuant to our amended and restated certificate of incorporation will be indemnified by us in connection with a proceeding initiated by such person only if such proceeding was authorized by our board of directors, except for proceedings to enforce rights to indemnification.

The right to indemnification which is conferred by our amended and restated certificate of incorporation is a contract right that includes the right to be paid by us the expenses incurred in defending or otherwise participating in any proceeding referenced above in advance of its final disposition, provided, however, that if the DGCL requires, an advancement of expenses incurred by our officer or director (solely in the capacity as an officer or director of our corporation) will be made only upon delivery to us of an undertaking, by or on behalf of such officer or director, to repay all amounts so advanced if it is ultimately determined that such person is not entitled to be indemnified for such expenses under our amended and restated certificate of incorporation or otherwise.

The rights to indemnification and advancement of expenses will not be deemed exclusive of any other rights which any person covered by our amended and restated certificate of incorporation may have or hereafter acquire under law, our amended and restated certificate of incorporation, our bylaws, an agreement, vote of stockholders or disinterested directors, or otherwise.

Any repeal or amendment of provisions of our amended and restated certificate of incorporation affecting indemnification rights, whether by our stockholders or by changes in law, or the adoption of any other provisions inconsistent therewith, will (unless otherwise required by law) be prospective only, except to the extent such amendment or change in law permits us to provide broader indemnification rights on a retroactive basis, and will not in any way diminish or adversely affect any right or protection existing at the time of such repeal or amendment or adoption of such inconsistent provision with respect to any act or omission occurring prior to such repeal or amendment or adoption of such inconsistent provision. Our amended and restated certificate of incorporation will also permit us, to the extent and in the manner authorized or permitted by law, to indemnify and to advance expenses to persons other that those specifically covered by our amended and restated certificate of incorporation.

Our bylaws include the provisions relating to advancement of expenses and indemnification rights consistent with those which are set forth in our amended and restated certificate of incorporation. In addition, our bylaws provide for a right of indemnity to bring a suit in the event a claim for indemnification or advancement of expenses is not paid in full by us within a specified period of time. Our bylaws also permit us to purchase and maintain insurance, at our expense, to protect us and/or any director, officer, employee or agent of our corporation or another entity, trust or other enterprise against any expense, liability or loss, whether or not we would have the power to indemnify such person against such expense, liability or loss under the DGCL.

Any repeal or amendment of provisions of our bylaws affecting indemnification rights, whether by our board of directors, stockholders or by changes in applicable law, or the adoption of any other provisions inconsistent therewith, will (unless otherwise required by law) be prospective only, except to the extent such amendment or change in law permits us to provide broader indemnification rights on a retroactive basis, and will not in any way diminish or adversely affect any right or protection existing thereunder with respect to any act or omission occurring prior to such repeal or amendment or adoption of such inconsistent provision.

We have entered into indemnification agreements with each of our officers and directors, a form of which is filed as Exhibit 10.5 to our Registration Statement on Form S-4 that was declared effective by the SEC on May 13, 2022. These agreements require us to indemnify these individuals to the fullest extent permitted under Delaware law against liabilities that may arise by reason of their service to us, and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

Pursuant to the Business Combination Agreement, we agreed to continue to indemnify DYNS' directors and officers and have agreed to the continuation of director and officer liability insurance covering such directors and officers.

Item 16. Exhibits and Financial Statements Schedules

(a) Exhibits.

Exhibit Number	Description	Incorporated by Reference			
		Schedule/Form	File No.	Exhibit	Filing Date
2.1*^	Business Combination Agreement, dated as of December 19, 2021, by and among Dynamics Special Purpose Corp., Explore Merger Sub, Inc. and Senti Biosciences, Inc.	S-4/A	333-262707	2.1	May 10, 2022
2.2*^	Amendment No. 1 to Business Combination Agreement, dated as of February 12, 2022, by and among Dynamics Special Purpose Corp., Explore Merger Sub, Inc. and Senti Biosciences, Inc.	S-4/A	333-262707	2.2	May 10, 2022
2.3*^	Amendment No. 2 to Business Combination Agreement, dated as of May 19, 2022, by and among Dynamics Special Purpose Corp., Explore Merger Sub, Inc. and Senti Biosciences, Inc.	8-K	001-40440	2.1	May 24, 2022
3.1*	Amended and Restated Certificate of Incorporation of Senti Biosciences, Inc.	8-K	001-40440	3.1	June 15, 2022
3.2*	Amended and Restated Bylaws of Senti Biosciences, Inc.	8-K	001-40440	3.2	June 15, 2022
4.1*	Specimen Common Stock Certificate	8-K	001-40440	4.1	June 15, 2022
5.1*	Opinion of Goodwin Procter LLP	S-1	333-265873	5.1	June 28, 2022
10.1*	Note Subscription Agreement by and among Senti Biosciences, Inc., Dynamics Special Purpose Corp. and Bayer HealthCare LLC, dated as of May 19, 2022	8-K	001-40440	10.1	May 24, 2022
10.2*	Investor Rights and Lock-up Agreement.	8-K	001-40440	10.4	June 15, 2022
10.3*	Form of Subscription Agreement	S/4-A	333-262707	10.20	May 10, 2022
10.4*	Form Sponsor Support Agreement (included in Exhibit 2.1).	S-4	333-262707	10.21	February 14, 2022
10.5*	Form of Company Stockholder Support Agreement (included in Exhibit 2.1).	S-4	333-262707	10.22	February 14, 2022
10.6*	Form of Amendment to Company Stockholder Support Agreement entered into on February 12, 2022 by certain stockholders of Senti Biosciences, Inc.	S-4	333-262707	10.24	February 14, 2022
10.7*	Registration Rights Agreement dated as of August 31, 2022, by and between Senti Biosciences, Inc. and Chardan Capital Markets LLC	8-K	001-404400	10.2	September 1, 2022
10.8**	Option Agreement by and between the Company and GeneFab, LLC, dated August 7, 2023				
16.1*	Letter from Marcum LLC to the SEC	8-K	001-40440	16.1	June 15, 2022
23.1**	Consent of KPMG LLP				
23.2*	Consent of Goodwin Procter LLP (Included in Exhibit 5.1 hereto)	S-1	333-265873	23.3	June 28, 2022
107*	Filing Fee Table	S-1	333-265873	107	June 28, 2022

* Previously filed

** Filed herewith.

^ Certain exhibits and schedules to this Exhibit have been omitted in accordance with Regulation S-K Item 601(b)(2). The Company agrees to furnish supplementally a copy of all omitted exhibits and schedules to the Securities and Exchange Commission upon its request.

† Portions of this exhibit (indicated by asterisks) have been omitted because the registrant has determined that the information is both not material and is the type that the registration treats as private or confidential.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement.

Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) (§ 230.424(b) of this chapter) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, however, that:

provided, *however*, that paragraphs (a)(1)(i), (ii), and (iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or

prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has 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. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this Post-Effective Amendment No. 1 to the Registration Statement to Form S-1 on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized in the City of South San Francisco, CA on the 1st day of November, 2023.

SENTI BIOSCIENCES, INC.

By: /s/ Timothy Lu
Name: Timothy Lu, M.D., Ph.D.
Title: Chief Executive Officer and President

Pursuant to the requirements of the Securities Act of 1933, as amended, this Post-Effective Amendment No. 1 to the Registration Statement to Form S-1 on Form S-3 has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Timothy Lu Timothy Lu, M.D., Ph.D.	Chief Executive Officer, President and Director (Principal Executive Officer)	November 1, 2023
/s/ Deborah Knobelman Deborah Knobelman, Ph.D.	Chief Financial Officer & Head of Corporate Development (Principal Financial Officer and Principal Accounting Officer)	November 1, 2023
/s/ Susan Berland Susan Berland	Director	November 1, 2023
/s/ Brenda Cooperstone Brenda Cooperstone	Director	November 1, 2023
/s/ Edward Mathers Edward Mathers	Director	November 1, 2023
/s/ James J. Collins James J. (Jim) Collins, Ph.D.	Director	November 1, 2023
/s/ Omid Farokhzad Omid Farokhzad, M.D.	Director	November 1, 2023

Exhibit 10.8
Execution Version

Certain identified information has been excluded from this exhibit because it is both not material and is the type that the registrant treats as private or confidential. Information that was omitted has been noted in this document with a placeholder identified by the mark "[***]".

Senti Biosciences, Inc.
2 Corporate Drive, First Floor
South San Francisco, CA 94080

August 7, 2023

GeneFab, LLC
1101 Marina Village Parkway
Suite 201
Alameda, CA 94501

Re: Option to Purchase Shares of Common Stock

Ladies and Gentlemen:

This letter agreement (this "Agreement") confirms our mutual agreement that, pursuant to that certain Framework Agreement, dated August 7, 2023 (the "Framework Agreement"), by and among Valere Bio, Inc. ("TopCo"), a Delaware corporation, GeneFab, LLC, a Delaware limited liability company and a wholly-owned subsidiary of TopCo (the "Holder"), and Senti Biosciences, Inc. (the "Company"), the Company hereby grants to the Holder the right and option, but not the obligation, to purchase shares of Common Stock from the Company on the following terms and conditions:

1. Purchase Option. At any time during the period (a) beginning on the date on which the Company and the Holder enter into the License Agreement as contemplated under Section 6.5 of the Framework Agreement and (b) ending on the earlier of (i) the Termination Date (as defined below) or (ii) August 7, 2026 (the "Option Period"), the Holder shall be entitled to purchase, at the Holder's election and in its sole discretion (the "Purchase Option"), up to an aggregate of 19,633,444 shares of Common Stock (the "Shares"), at a purchase price of $1.01867 per share (subject to the adjustments as set forth herein, the "Purchase Price"). The Purchase Option may be exercised by the Holder in up to ten installments as further set forth below, by delivering written notice of such exercise to the Company in accordance with the notice provisions set forth in Section 10.1 of the Framework Agreement that sets forth the number of the Shares to be purchased pursuant to such exercise (the "Exercise Notice") and by paying the aggregate Purchase Price therefor. The closing of each exercise of the Purchase Option shall take place within two (2) Business Days of the Holder's delivery of the Exercise Notice to the Company.

2. Adjustment of Purchase Price. The Purchase Price shall be adjusted from time to time as set forth in this Section 2.

(a) Subdivisions, Combinations and Other Issuances. During the Option Period, in the event that the outstanding shares of Common Stock are subdivided (by stock split, issuance of additional shares as a stock dividend or otherwise) into a greater number of shares, the Purchase Price shall be proportionately decreased, or proportionately increased in the event the outstanding shares of Common Stock are combined (by reclassification, reverse stock split or otherwise) into a lesser number of shares. Any adjustment under this Section 2(a) shall become effective (i) in the case of any subdivision or combination, at the close of business on the date the subdivision or combination becomes effective, or (ii) in the case of an issuance of additional shares of Common Stock as a stock dividend, as of the record date of such dividend, or in the event that no record date is fixed, upon the making of such dividend. Appropriate adjustments shall also be made to the Purchase Price payable per share for the remaining Shares subject to the then-unexercised portion of the Purchase Option.

(b) Adjustments for Dividends and Distributions. In case that the Company shall make or issue, or shall fix a record date for the determination of eligible holders entitled to receive a dividend or other distribution payable with respect to the Common Stock that is payable in (i) securities of the Company or (ii) evidence of indebtedness, rights, warrants, cash or other assets which dividend or distribution is actually made (other than in the case of each of clause (i) and clause (ii), issuances with respect to which adjustment is made under Sections 2(a) or 2(c)) (each a "Dividend Event"), then, and in each such case, the Purchase Price in effect prior to such record date shall be reduced immediately thereafter to the price determined by [***]. In the event that such distribution is not so made, the Purchase Price then in effect shall be readjusted, effective as of the date when the Company's board of directors (the "Board") determines not to distribute such securities, evidences of indebtedness, rights, warrants, cash or other assets, as the case may be, to the Purchase Price that would then be in effect if such record date had not been fixed.

(c) Fundamental Transactions.

(i) During the Option Period, in the event that the Company enters into a definitive agreement to effect, or solicits stockholder approval for, a Fundamental Transaction, then, except if such notice shall constitute material, non-public information, the Company shall send a notice to the Holder of such transaction prior to the applicable record or effective date on which a stockholder would need to hold shares of Common Stock in order to participate in or vote with respect to such transaction (the "Fundamental Transaction Notice"); provided, however, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice. The Holder may, at its own discretion, exercise the Purchase Option with respect to any remaining shares purchasable under this Agreement by delivering an Exercise Notice to the Company (which exercise may be made contingent and effective upon the consummation of the Fundamental Transaction if so specified in the notice) by the time as set forth in such Fundamental Transaction Notice, but in no event prior to a date that is at least [***]. To the extent that Stockholder Approval is required to issue the remaining Shares to the Holder pursuant to Nasdaq rules, the Company shall include a proposal to obtain such Stockholder Approval in the proxy statement related to the Fundamental Transaction.

(ii) During the Option Period, the Company shall not enter into a binding agreement relating to or consummate a Fundamental Transaction (x) unless the Successor Entity assumes all of the obligations of the Company under this Agreement in accordance with the provisions of this Section 2(c); provided, however, (y) if the Successor Entity does not agree to assume all of the obligations of the Company under this Agreement in accordance with Section 2(c)(ii)(x), the Company shall provide the Holder with the Fundamental Transaction Notice in accordance with Section 2(c)(i) and the Holder's right thereunder shall not be affected; provided further that, should the Holder fail to exercise any portion of remaining then unexercised Purchase Option in accordance with Section 2(c)(i), this Agreement, including the Purchase Option, shall terminate and cease to be of any further force and effect upon consummation of such Fundamental Transaction.

(iii) In the case of Section 2(c)(ii)(x), (1) it shall be a required condition to the consummation of any Fundamental Transaction that any Successor Entity shall succeed to the rights and obligations of the Company under this Agreement and (2) upon consummation of the Fundamental Transaction in which the Company is not the Successor Entity, the Company or the Successor Entity, as applicable, shall deliver to the Holder confirmation that there shall be issued upon exercise of this Purchase Option at any time after the consummation of the Fundamental Transaction, shares of capital stock of the Successor Entity (the "Successor Capital Stock") or, in lieu of the Successor Capital Stock, such shares of stock, securities, cash, assets or any other property whatsoever, if any, that the Holder would have been entitled to receive upon the happening of such Fundamental Transaction, had this Purchase Option been exercised for the maximum number of then available Shares immediately prior to the consummation of such Fundamental Transaction, as adjusted in accordance with the provisions of this Agreement. Notwithstanding the foregoing, in the case of Section 2(c)(ii)(x) above, if holders of Common Stock are given any choice as to the securities, cash or other assets to be received in a Fundamental Transaction, then the Holder shall be given the same choice as the consideration it receives upon any exercise of the Purchase Option following a Corporate Event. In the case of Section 2(c)(ii)(x) above, in addition to and not in substitution for any other rights hereunder, prior to the consummation of any Fundamental Transaction pursuant to which holders of Common Stock are entitled to receive securities, cash, assets or other property with respect to or in exchange for Common Stock (a "Corporate Event"), the Company shall make appropriate provision to ensure that, and any applicable Successor Entity shall ensure that, the Holder will thereafter have the right to receive upon exercise of the Purchase Option at any time after the consummation of the Corporate Event, Successor Capital Stock or, if so elected by the Holder, in lieu of the Successor Capital Stock purchasable upon the exercise of the Purchase Option prior to such Corporate Event, such shares of stock, securities, cash, assets or any other property whatsoever which the Holder would have been entitled to receive upon the consummation of such Corporate Event, had the Purchase Option been exercised for the maximum number of then available Shares immediately prior to such Corporate Event.

(iv) In the case of Section 2(c)(ii)(y), if (x) the consideration payable to the Company or its stockholders in the Fundamental Transaction consists solely of cash and (y) Purchase Option is "in the money" based on the per share price of the consideration of the Fundamental Transaction (that is, the per share price of the consideration of the Fundamental Transaction exceeds $1.01867 (subject to the adjustment as set forth in Sections 2(a) and 2(b)), then all remaining then unexercised portions of the Purchase Option will be deemed

automatically exercised for the remaining shares subject to the Purchase Option on a [***] effective upon the consummation of the Fundamental Transaction without the Holder paying any additional cash consideration. If the consideration payable to the Company or its stockholders in the Fundamental Transaction includes consideration other than cash, and/or the Purchase Option is not "in the money" based on the per share price of the consideration of the Fundamental Transaction (that is, the per share price of the consideration of the Fundamental Transaction is less than $1.01867 (subject to the adjustment as set forth in Sections 2(a) and 2(b)), then notwithstanding the last two sentences of Section 1, the Holder shall deliver the aggregate Purchase Price to the Company's designated bank account for such Exercise Notice prior to or upon the consummation of the Fundamental Transaction.

3. Common Stock Cap. During the Option Period, (a) prior to the receipt of Stockholder Approval (as defined below), the Holder may exercise the Purchase Option in installments of up to [***] shares of Common Stock (the "Common Stock Cap"), which equals 19.9% of the Company's outstanding shares of Common Stock as of the date hereof, with an initial installment of at least [***] shares of Common Stock (the "Initial Installment"), and (b) following the receipt of Stockholder Approval, the Holder may exercise the Purchase Option in additional installments and up to the remaining number of Shares not previously purchased pursuant to clause (a) above. For purposes of the foregoing, "Stockholder Approval" shall mean the requisite approval of the Company's stockholders under applicable rules of the Nasdaq Global Market or such other national exchange on which the Common Stock may then be listed (the "Principal Exchange") to permit the Company's issuance of shares of Common Stock in excess of the Common Stock Cap to the Holder. The Common Stock Cap shall be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction affecting the Common Stock. The Company shall not be required or permitted to issue, and the Holder shall not be required or permitted to purchase, any shares of Common Stock under this Agreement if such issuance would breach the Company's obligations under the rules or regulations of the Principal Exchange. Subject to Section 2(c) herein, to the extent that Stockholder Approval is required pursuant to Nasdaq rules to issue any Shares to the Holder pursuant to an Exercise Notice, the Company shall promptly prepare and deliver a proxy statement that includes a proposal to obtain such Stockholder Approval.

4. Registration Rights.

(a) Shelf Registration. At the Holder's written request, the Company shall use commercially reasonable efforts to prepare and file with the Commission up to four Registration Statements covering the resale of the Shares for an offering to be made on a continuous basis pursuant to Rule 415. The Holder may make such requests to file a Registration Statement at any time when the Holder holds at least [***] purchased by the Holder under this Agreement that are not then registered on an effective Registration Statement on the date of such request; provided that, such minimum ownership requirement shall not apply whenever the Holder is an Affiliate of the Company; provided further that, [***]. Each Registration Statement shall cover the resale of the Shares that have been purchased by the Holder under this Agreement and are not then registered on an effective Registration Statement as of the trading day immediately preceding the applicable filing date of such requested Registration Statement. The Company shall use commercially reasonable efforts to cause such Registration Statements to become effective as soon as reasonably practicable following the filing thereof. Each Registration Statement

filed hereunder shall be on Form S-3 (except if the Company is not then eligible to register for resale the Shares on Form S-3, in which case such registration shall be on another appropriate form in accordance herewith; provided, however, that the Holder shall not be required to be named as an "underwriter" without Holder's express prior written consent). Subject to the terms of this Agreement, the Company shall use its commercially reasonable efforts to cause a Registration Statement filed under this Agreement to be declared effective under the Securities Act as promptly as possible after the filing thereof, and shall use its reasonable best efforts to maintain such Registration Statement and keep such Registration Statement continuously effective, available for use and in compliance with the provisions of the Securities Act, including by preparation and filing with the SEC such amendments and supplements as many be necessary, until the earlier of the date that all Shares covered by such Registration Statement (i) have been sold, thereunder or pursuant to Rule 144, or (ii) may be sold without volume or manner-of-sale restrictions pursuant to Rule 144 and without the requirement for the Company to be in compliance with the current public information requirement under Rule 144, as determined by the counsel to the Company pursuant to a written opinion letter to such effect, addressed and acceptable to the transfer agent and the affected Holders. Notwithstanding anything to the contrary herein, to the extent there is an active Registration under this Section 4(a) covering the Shares, and the Holder wishes to request an underwritten offering from such Registration Statement (an "Underwritten Offering"), the Company shall use commercially reasonable efforts to participate in a standard due diligence process (including making senior management and auditors available and providing for a standard data room), provide for standard legal opinions and negative assurances letters from outside counsel and arrange for a market standard comfort letter.

(b) Piggyback Rights. In the event the Company decides to register any Common Stock in connection with which an opportunity to register shares is given to any holder of Common Stock, the Company shall also deliver prompt written notice of the Company's intent to register such Common Stock to the Holder, and the Holder shall have the opportunity to register (or cause to be registered) the number of Shares as the Holder may request, in accordance with the procedures applicable to the holders of such Common Stock who are eligible to register such Common Stock. The Holder shall be permitted to withdraw all or part of the Shares at any time at least two (2) Business Days prior to the effective date of such registration.

(c) Underwriter Cutback. In connection with any registration of Shares, including any Underwritten Offering, the underwriter may determine that marketing factors (including an adverse effect on the per share offering price) require a limitation of the number of shares to be underwritten. Notwithstanding any contrary provision of this Section 4 and subject to the terms of this Section 4, the underwriter may limit the number of Shares which would otherwise be included in such registration or Underwritten Offering by excluding any or all Shares from such registration or Underwritten Offering.

(d) Expenses. All expenses incurred in connection with any registration pursuant to this Section 4, including without limitation all registration, filing and qualification fees, printer's and accounting fees, fees and disbursements of counsel for the Company, and reasonable fees and disbursements of one legal counsel selected by the Holder [***] shall be borne by [***] provided that fees and disbursements for such [***].

(e) Cooperation. The Company shall use reasonable best efforts to maintain the on-going effectiveness and availability of any registration undertaken pursuant to this Section 4 until all of the Holder's securities registered thereunder have been sold pursuant to such registration. In connection with any registration undertakes pursuant to this Section 4 that is an underwritten offering, the Company shall reasonably cooperate with the Holder and the underwriters selected by the Holder in order to facilitate such underwritten offering. Such cooperation will include making the books and records of the Company available to facilitate a standard "due diligence" review of the Company, making officers and the independent auditor firm of the Company available to participate in standard due diligence calls, arranging for a standard "comfort letter" and making the Company's outside counsel available to provide a standard opinion and negative assurance letter.

(f) Listing. The Company shall use its reasonable best efforts to ensure the Company remains listed as a public company on, and for Common Stock to be listed on, the Principal Exchange.

5. Noncircumvention. The Company hereby covenants and agrees that the Company will not, by amendment of its governing documents, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issue or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Agreement, and will at all times in good faith carry out all of the provisions of this Agreement and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid Shares upon the exercise of this Purchase Option.

6. Securities Law Matters.

(a) Investment Purpose. The Holder is entering into this Agreement and acquiring the Shares, for its own account for investment only and not with a view towards, or for resale in connection with, the public sale or distribution thereof; provided however, by making the representations herein, the Holder does not agree to hold any of the Shares for any minimum or other specific term.

(b) Accredited Investor; Access to Information. The Holder is an "accredited investor" as defined in Regulation D under the Securities Act, and is knowledgeable, sophisticated and experienced in making, and is qualified to make decisions with respect to investments in shares presenting an investment decision like that involved in the purchase of the Shares. The Holder has been furnished with materials relating to the offer and sale of the Shares that have been requested by the Holder, including all reports, schedules, forms, statements and other documents (including exhibits and all other information incorporated therein), and any required amendments to any of the foregoing, filed with the U.S. Securities and Exchange Commission in accordance with the Securities Act and the Exchange Act, and the Holder has been afforded the opportunity to ask questions of the Company.

(c) Reliance on Exemptions. The Holder understands that the Company intends for the Shares to be offered and sold to it in reliance upon specific exemptions from the

registration requirements of United States federal and state securities laws and that the Company is relying upon the truth and accuracy of, and the Holder's compliance with, the representations, warranties, agreements, acknowledgments and understandings of the Holder set forth herein in order to determine the availability of such exemptions and the eligibility of the Holder to acquire the Shares.

(d) Restricted Securities. The Holder understands that the Shares will be characterized as "restricted securities" under the U.S. federal securities laws inasmuch as they are being acquired from the Company in a private placement under Section 4(a)(2) of the Securities Act and that under such laws and applicable regulations such Shares may be resold without registration under the Securities Act only in certain limited circumstances.

(e) No Governmental Review. The Holder understands that no United States federal or state agency or any other government or governmental agency has passed on or made any recommendation or endorsement of the Shares or the fairness or suitability of the investment in the Shares nor have such authorities passed upon or endorsed the merits of the offering of the Shares.

7. Termination. In the event that Holder fails to make any payment [***] to the Company when such payment becomes due and payable on the date that occurs [***] the Company shall have the right, but not the obligation, to terminate this Agreement (which shall then be deemed the "Termination Date"), including the Purchase Option.

8. Certain Definitions. For purposes of this Agreement, the following terms shall have the following meanings:

(a) "**Affiliate**" means, with respect to any Person, any other Person that directly, or indirectly through one or more intermediaries controls, is controlled by, or is under common control with, such Person; provided that, in the case of the Holder, "**Affiliate**" shall also include (to the extent applicable) Persons controlled or managed by the Holder or any of its Affiliates.

(b) "**Business Day**" shall mean any day other than a Saturday, a Sunday or a day on which banks in San Francisco, California and Hong Kong Special Administrative Region are authorized or obligated by applicable laws to close.

(c) "**Common Stock**" means (i) the Company's Common Stock, par value $0.0001 per share, and (ii) any share capital into which such Common Stock shall have been changed or any share capital resulting from a reclassification of such Common Stock.

(d) "**Designated Expert**" means an impartial and disinterested appraisal or valuation firm of national reputation as may be mutually and reasonably agreed upon in a timely manner by the Company and the Holder at the Company's expense; provided, however, that if the Company and the Holder shall fail to agree to the identity of such firm within [***] then the Company and the Holder shall each select an independent valuation expert within [***], and such valuation experts shall mutually agree upon the determinations then the subject of appraisal (including, if applicable, the Fair Market Value). If within [***] after appointment of the two appraisers they are unable to agree upon the amount in question, a third independent appraiser

shall be chosen within [***] thereafter by the mutual consent of such first two appraisers, or, if such two first appraisers fail to agree upon the appointment of a third appraiser, such appointment shall be made by the American Arbitration Association, or any organization successor thereto, from a panel of arbitrators having experience in appraisal of the subject matter to be appraised. The decision of the third appraiser so appointed and chosen shall be given within [***] after the selection of such third appraiser. If three appraisers shall be appointed and the determination of one appraiser is disparate from the middle determination by [***] the amount by which the other determination is disparate from the middle determination, then the determination of such appraiser shall be excluded, the remaining two determinations shall be averaged and such average shall be binding and conclusive upon the Company and the Holder; otherwise, the average of all three determinations shall be binding upon the Company and the Holder. The costs of conducting any appraisal procedure shall be borne by [***]. The Company and the Holder acknowledge, covenant and agree that the Option Period shall be extended automatically during the pendency of such valuation exercise and, if necessary, for [***] following the conclusion thereof to complete the exercise of the Purchase Option. During the pendency of such valuation exercise, the parties will (i) cooperate with the Designated Expert, (ii) have the opportunity to make presentations and provide supporting material to the Designated Expert in support of their positions and (iii) subject to customary confidentiality agreements, provide the Designated Expert with access to the Company's books and records, personnel, and representatives, and such other information as the Designated Expert may require in order to render its determination.

(e) "**Exchange Act**" means the Securities Exchange Act of 1934, as amended.

(f) "**Fair Market Value**" of one share of Common Stock shall mean the average of the closing or last reported sale prices of such share of Common Stock on the Principal Exchange as published in *The Wall Street Journal*, over the ten (10) consecutive trading days immediately preceding the date of determination of fair market value. "**Fair Market Value**" of any securities, evidences of indebtedness, assets, rights or warrants to be so distributed in respect of the Common Stock shall mean the fair market value as determined by the Board in good faith or, if the Holder objects to the Board's determination of fair market value within ten (10) days of receipt of notice thereof, such fair market value as determined by the Designated Expert.

(g) "**Fundamental Transaction**" means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Person, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its "significant subsidiaries" (as defined in Rule 1-02 of Regulation S-X under the Exchange Act) to one or more Persons, or (iii) reorganize, recapitalize or reclassify its Common Stock; or (B) that any Person individually or Persons in the aggregate, directly or indirectly (including through the Company, its subsidiaries, Affiliates or otherwise), in one or more related transactions, becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act) of at least 50% of the aggregate ordinary voting power represented by issued and outstanding Common Stock.

(h) "**Person**" means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(i) "**Securities Act**" means the Securities Act of 1933, as amended.

(j) "**Successor Entity**" means one or more Person or Persons formed by, resulting from or surviving any Fundamental Transaction or one or more Person or Persons with which such Fundamental Transaction shall have been entered into.

9. Miscellaneous.

(a) Assignment. The Holder may transfer or assign the Purchase Option to its Affiliates at any time without the consent of the Company.

(b) Remedies and Injunctive Relief. The remedies provided in this Agreement shall be cumulative and in addition to all other remedies available under this Agreement at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Agreement. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

(c) Severability. If at any time any provision or part-provision of this Agreement is or becomes invalid, illegal or unenforceable in any respect, it shall be deemed modified to the minimum extent necessary to make it valid, legal and enforceable. If such modification is not possible, the relevant provision or part-provision shall be deemed deleted. Any modification to or deletion of a provision or part-provision under this Agreement shall not affect the validity and enforceability of the rest of this Agreement. If any provision or part-provision of this Agreement is invalid, illegal or unenforceable, the parties shall negotiate in good faith to amend such provision so that, as amended, it is legal, valid and enforceable, and, to the greatest extent possible, achieves the intended commercial result of the original provision.

(d) Governing Law and Dispute Resolution. This Agreement, including all issues and questions concerning the application, construction, validity, interpretation, and enforceability of this Agreement, shall be governed by and construed in accordance with the internal laws of the State of Delaware, without regard to its conflict of laws provisions. The parties agree that any dispute, controversy, difference, or claim arising out of, relating to, or in connection with this Agreement, including any question regarding its existence, validity, or termination or any dispute regarding non-contractual obligations arising out of or relating to this Agreement, shall be resolved in accordance with Section 10.9 of the Framework Agreement, which is hereby incorporated by reference and shall apply *mutatis mutandis* as if set forth herein.

(e) Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one

instrument. Counterparts may be delivered via electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

Please acknowledge your agreement to the foregoing terms by countersigning below.

Sincerely,

Senti Biosciences, Inc.

/s/ Timothy Lu
Timothy Lu, M.D., Ph.D.
Chief Executive Officer & President

Acknowledged and agreed:

GeneFab, LLC

By its sole member:

Valere Bio, Inc.

/s/ Donald Tang
Name: Donald Tang
Title: President

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the use of our report dated March 22, 2023, with respect to the consolidated financial statements of Senti Biosciences, Inc. and its subsidiaries, incorporated herein by reference and to the reference to our firm under the heading “Experts” in the prospectus.

/s/ KPMG LLP

San Francisco, California
November 1, 2023