

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

**FORM S-1
REGISTRATION STATEMENT**

*UNDER
THE SECURITIES ACT OF 1933*

Frequency Therapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2834
(Primary Standard Industrial
Classification Code Number)

47-2324450
(I.R.S. Employer
Identification Number)

19 Presidential Way, 2nd Floor
Woburn, MA 01801
(866) 389-1970

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

David L. Lucchino
President and Chief Executive Officer
Frequency Therapeutics, Inc.
19 Presidential Way, 2nd Floor
Woburn, MA 01801
(866) 389-1970

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

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 check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) 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.

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.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) 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.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to Be Registered	Amount to be Registered (1)(2)	Proposed Maximum Offering Price Per Share (3)	Proposed Maximum Aggregate Offering Price (3)	Amount of Registration Fee (3)
Common stock, par value \$0.001 per share	2,350,108	\$19.85	\$46,649,643.80	\$6,055.13

- (1) The shares will be offered for resale by selling stockholders.
- (2) Pursuant to Rule 416 under the Securities Act of 1933, as amended, this registration statement also covers any additional number of shares of common stock issuable upon stock splits, stock dividends or other distribution, recapitalization or similar events with respect to the shares of common stock being registered pursuant to this registration statement.
- (3) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933, as amended, and based on the average of the high and low sales price per share of the registrant's common stock on the Nasdaq Global Market on August 27, 2020.

The Registrant hereby amends 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 the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. The selling stockholders named in this prospectus may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and the selling stockholders named in this prospectus are not soliciting offers to buy these securities in any state or other jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED AUGUST 28, 2020

2,350,108 Shares



Common Stock

This prospectus relates to the resale, from time to time, of up to 2,350,108 shares of our common stock by the selling stockholders (which term, as used in this prospectus, includes pledgees, donees, transferees or other successors-in-interest) identified in this prospectus. The selling stockholders acquired the shares of our common stock in a private placement of shares of our common stock that closed in July 2020, or the private placement.

We are not selling any securities under this prospectus and we will not receive any proceeds from the sale of the shares.

We have agreed to bear all of the expenses incurred in connection with the registration of these shares. The selling stockholders will pay or assume discounts, commissions, fees of underwriters, selling brokers or dealer managers and similar expenses, if any, incurred for the sale of the shares.

The selling stockholders may offer the shares from time to time through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. For additional information on the methods of sale that may be used by the selling stockholders, see the section entitled "Plan of Distribution" on page 14. For a list of the selling stockholders, see the section entitled "Selling Stockholders" on page 12.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision.

Our common stock is listed on the Nasdaq Global Select Market, or Nasdaq, under the symbol "FREQ." On August 27, 2020, the closing sale price of our common stock as reported on Nasdaq was \$19.99.

We are an "emerging growth company" and a "smaller reporting company" under applicable Securities and Exchange Commission rules and, as such, have elected to comply with certain reduced public company disclosure requirements for this prospectus and future filings. See "Prospectus Summary—Implications of Being an Emerging Growth Company and a Smaller Reporting Company."

Our business and investment in our common stock involve significant risks. These risks are described in the section titled "[Risk Factors](#)," beginning on page 4 of this prospectus.

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

The date of this prospectus is _____, 2020

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We have not, and the selling stockholders have not, authorized anyone to provide any information to you other than the information contained in this prospectus and the documents incorporated by reference herein. We and the selling stockholders take no 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 shares of common stock offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus or incorporated by reference herein is current only as of its date, regardless of its time of delivery or any sale of shares of our common stock. Our business, financial condition, results of operations, and prospects may have changed since that date.

PROSPECTUS SUMMARY

This summary highlights, and is qualified in its entirety by, the more detailed information included elsewhere in this prospectus or incorporated by reference herein. This summary does not contain all of the information that may be important to you. You should read and carefully consider the entire prospectus, especially the “Risk Factors” section of this prospectus, before deciding to invest in our common stock. Unless the context otherwise requires, we use the terms “company,” “we,” “us” and “our” in this prospectus to refer to Frequency Therapeutics, Inc. and our subsidiary.

Overview

We are a clinical-stage biotechnology company focused on harnessing the body’s innate biology to repair or reverse damage caused by a broad range of degenerative diseases and an industry leader in the science and development of medicines for inner-ear cellular regeneration and hearing restoration. Our initial focus is on advancing our lead product candidate, FX-322, through clinical studies with the goal of developing and commercializing a medicine to help millions of patients with the most common form of hearing loss and build upon the potential of regenerative therapeutics for hearing.

Our initial therapeutic focus is sensorineural hearing loss, or SNHL, which is the most prevalent type of hearing loss. We are developing FX-322 to treat the underlying cause of SNHL, which is the loss of hair cells. FX-322 is designed to regenerate hair cells through the activation of progenitor cells already present in the ear. In our Phase 1/2 clinical trial evaluating FX-322 in 23 patients with stable SNHL, we observed a statistically significant and clinically meaningful improvement in key measures of hearing loss, including word recognition and clarity of sounds, and FX-322 was observed to be well-tolerated. We commenced dosing of a Phase 2a clinical trial of FX-322 in patients with SNHL in October 2019. Although a number of clinical trial sites temporarily halted patient enrollment during the first quarter and into the second quarter of 2020 in response to the COVID-19 pandemic, nearly all clinical trial sites resumed enrolling patients in the second quarter of 2020 and enrollment activity for our Phase 2a clinical trial has since been steady. Based on our projections, we expect to achieve target enrollment in the Phase 2a clinical trial by early in the fourth quarter of 2020 and to report a data readout from the Phase 2a clinical trial in the second quarter of 2021.

Private Placement

On July 20, 2020, we issued and sold 2,350,108 shares of our common stock to the selling stockholders at a price of \$18.00 per share for gross proceeds of approximately \$42.3 million in a private placement. In connection with the private placement, we entered into a registration rights agreement with the selling stockholders pursuant to which, we agreed to prepare and file a registration statement with the Securities and Exchange Commission, or the SEC, within 60 days after the closing of the private placement for purposes of registering the resale of the shares of common stock purchased by the selling stockholders. We are filing the registration statement of which this prospectus forms a part to fulfill this obligation.

For a detailed description of the transactions contemplated by the private placement, see the section captioned “Selling Stockholders” in this prospectus.

Our Corporate Information

We were incorporated under the laws of the state of Delaware in November 2014. Our principal executive offices are located at 19 Presidential Way, Woburn, Massachusetts 01801 and our telephone number is (866) 389-1970. Our corporate website address is www.frequencytx.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. An “emerging growth company” may take advantage of reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- the option to present only two years of audited financial statements and only two years of related “Management’s discussion and analysis of financial condition and results of operations” in this prospectus;
- not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act of 2002, as amended;
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We may take advantage of these provisions until December 31, 2024. However, if any of the following events occur prior to such date, we will cease to be an emerging growth company: (i) our annual gross revenue exceeds \$1.07 billion, (ii) we issue more than \$1.0 billion of non-convertible debt in any three-year period or (iii) we become a “large accelerated filer” (as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, or the Exchange Act) and we do not qualify as a smaller reporting company under the revenue test for smaller reporting companies. We will be deemed to be a “large accelerated filer” at such time that we (a) have an aggregate worldwide market value of common equity securities held by non-affiliates of \$700.0 million or more as of the last business day of our most recently completed second fiscal quarter, (b) have been required to file annual and quarterly reports under the Exchange Act, for a period of at least 12 months and (c) have filed at least one annual report pursuant to the Exchange Act.

Even after we no longer qualify as an emerging growth company, we may still qualify as a “smaller reporting company,” which would allow us to take advantage of many of the same exemptions from disclosure requirements including reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements.

We have elected to take advantage of certain of the reduced disclosure obligations in the registration statement of which this prospectus is a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. We have elected to use the extended transition period for complying with new or revised accounting standards; and as a result of this election, our financial statements may not be comparable to companies that comply with public company effective dates.

THE OFFERING

Common stock offered by selling stockholders	2,350,108 shares
Use of proceeds	We will not receive any proceeds from the sale of shares in this offering.
Risk factors	You should read the “Risk Factors” section included or incorporated by reference in this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.
Nasdaq Global Select Market symbol	“FREQ”

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you decide to invest in our common stock, you should carefully consider the risks described in the section captioned “Risk Factors” in our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q and other filings we make with the SEC from time to time, which are incorporated by reference herein, together with the other information in this prospectus and documents incorporated by reference in this prospectus. The risks described in our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q and the other filings incorporated by reference herein are not the only ones facing our company. Additional risks and uncertainties may also impair our business operations. If any of the risks described in our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q and the other filings incorporated by reference herein occurs, our business, financial condition, results of operations and future growth prospects could be harmed. In these circumstances, the market price of our common stock could decline, and you may lose all or part of your investment.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This prospectus contains forward-looking statements. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Exchange Act. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy, product candidates, clinical development plans and expectations, patient enrollment expectations, prospective products, product approvals, research and development costs, timing and likelihood of success, and plans and objectives of management for future operations and results, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of important factors that could cause actual results to differ materially from those in the forward-looking statements, including the risks, uncertainties and assumptions described under the sections in this prospectus titled “Risk Factors.” These forward-looking statements are subject to numerous risks, including, without limitation, the following:

- the impact of the novel coronavirus, COVID-19, on our ongoing and planned clinical trials, our research development and manufacturing activities, the relocation of our offices and laboratory facilities and our business and financial markets;
- the initiation, timing, progress and results of our preclinical and clinical trials and research and development programs, including our ongoing Phase 2a clinical trial and any planned additional clinical trials for FX-322 and our program to develop a product candidate for the treatment of multiple sclerosis, or MS;
- our ability to continue to develop our progenitor cell activation, or PCA, platform and identify additional product candidates;
- our ability to successfully complete clinical trials of any product candidate and obtain regulatory approval for it;
- the timing or likelihood of regulatory filings and approvals, including our planned filing of an investigational new drug application for our MS product candidate;
- the commercialization, marketing and manufacture of any product candidate, if approved;
- the pricing and reimbursement of any product candidate, if approved;
- the rate and degree of market acceptance and clinical utility of any products for which we receive regulatory approval;
- the implementation of our strategic plans for our business, product candidates, and technology;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates, PCA platform, and technology;
- estimates of our expenses, future revenues, capital requirements, and our need for additional financing;
- our ability to maintain and establish collaborations, including our License and Collaboration Agreement with Astellas Pharma Inc.;

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- our financial performance and the sufficiency of our financial resources; and
- developments relating to our competitors and our industry, including the impact of government regulation.

Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur, and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. As a result of these factors, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances, or otherwise.

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

USE OF PROCEEDS

We are filing the registration statement of which this prospectus is a part to permit holders of the shares of our common stock described in the section entitled "Selling Stockholders" to resell such shares. We are not selling any securities under this prospectus and we will not receive any proceeds from the sale of shares by the selling stockholders.

The selling stockholders will pay any discounts, commissions, fees of underwriters, selling brokers or dealer managers and expenses incurred by the selling stockholders for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholders in disposing of the shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration and filing fees, printing fees, Nasdaq listing fees and fees and expenses of our counsel and our accountants.

DESCRIPTION OF CAPITAL STOCK

General

The following description summarizes some of the terms of our restated certificate of incorporation and amended and restated bylaws and of the General Corporation Law of the State of Delaware. This description is summarized from, and qualified in its entirety by reference to, our amended and restated certificate of incorporation and amended and restated bylaws, each of which has been publicly filed with the SEC, as well as the relevant provisions of the General Corporation Law of the State of Delaware.

Capital stock

Our authorized capital stock consists of 200,000,000 shares of common stock, par value \$0.001 per share, and 10,000,000 shares of preferred stock, par value \$0.001 per share. As of July 31, 2020, there were 33,645,901 shares of our common stock and no shares of our preferred stock outstanding.

Common stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Subject to the supermajority votes for some matters, other matters shall be decided by the affirmative vote of our stockholders having a majority in voting power of the votes cast by the stockholders present or represented and voting on such matters. Our restated certificate of incorporation and amended and restated bylaws also provide that our directors may be removed only for cause and only by the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of capital stock entitled to vote thereon. In addition, the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of capital stock entitled to vote thereon is required to amend or repeal, or to adopt any provision inconsistent with, several of the provisions of our restated certificate of incorporation. See below under “—Anti-takeover effects of Delaware law and our certificate of incorporation and bylaws—Amendment of charter provisions.” Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of any series of preferred stock that we may designate and issue in the future.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred stock

Under the terms of our restated certificate of incorporation, our board of directors is authorized to direct us to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock.

Anti-takeover effects of Delaware law and our certificate of incorporation and bylaws

Some provisions of Delaware law, our restated certificate of incorporation and our amended and restated bylaws could make the following transactions more difficult: an acquisition of us by means of a tender offer; an acquisition of us by means of a proxy contest or otherwise; or the removal of our incumbent officers and directors. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in our best interests, including transactions which provide for payment of a premium over the market price for our shares.

These provisions, summarized below, are intended to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

Undesignated preferred stock

The ability of our board of directors, without action by the stockholders, to issue up to 10,000,000 shares of undesignated preferred stock with voting or other rights or preferences as designated by our board of directors could impede the success of any attempt to change control of us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.

Stockholder meetings

Our amended and restated bylaws provide that a special meeting of stockholders may be called only by our chairman of the board, chief executive officer or president (in the absence of a chief executive officer), or by a resolution adopted by a majority of our board of directors.

Requirements for advance notification of stockholder nominations and proposals

Our amended and restated bylaws establish advance notice procedures with respect to stockholder proposals to be brought before a stockholder meeting and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors or a committee of the board of directors.

Elimination of stockholder action by written consent

Our restated certificate of incorporation eliminates the right of stockholders to act by written consent without a meeting.

Staggered board

Our board of directors is divided into three classes. The directors in each class serve for a three-year term, one class being elected each year by our stockholders. This system of electing and removing directors may tend to discourage a third-party from making a tender offer or otherwise attempting to obtain control of us, because it generally makes it more difficult for stockholders to replace a majority of the directors.

Removal of directors

Our restated certificate of incorporation provides that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of the holders of at least two-thirds in voting power of the outstanding shares of stock entitled to vote in the election of directors.

Stockholders not entitled to cumulative voting

Our restated certificate of incorporation does not permit stockholders to cumulate their votes in the election of directors. Accordingly, the holders of a majority of the outstanding shares of our common stock entitled to vote

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in any election of directors can elect all of the directors standing for election, if they choose, other than any directors that holders of our preferred stock may be entitled to elect.

Delaware anti-takeover statute

We are subject to Section 203 of the General Corporation Law of the State of Delaware, which prohibits persons deemed to be “interested stockholders” from engaging in a “business combination” with a publicly held Delaware corporation for three years following the date these persons become interested stockholders unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. Generally, an “interested stockholder” is a person who, together with affiliates and associates, owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of a corporation’s voting stock. Generally, a “business combination” includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. The existence of this provision may have an anti-takeover effect with respect to transactions not approved in advance by the board of directors.

Choice of forum

Our restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will, to the fullest extent permitted by applicable law, be the sole and exclusive forum for: (1) any derivative action or proceeding brought on our behalf; (2) any action asserting a claim of breach of a fiduciary duty or other wrongdoing by any of our directors, officers, employees or agents to us or our stockholders; (3) any action asserting a claim against us arising pursuant to any provision of the General Corporation Law of the State of Delaware or our certificate of incorporation or bylaws; (4) any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws; or (5) any action asserting a claim governed by the internal affairs doctrine. Under our restated certificate of incorporation, this exclusive forum provision does not apply to claims which are vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery of the State of Delaware, or for which the Court of Chancery of the State of Delaware does not have subject matter jurisdiction. For instance, the provision would not apply to actions arising under federal securities laws, including suits brought to enforce any liability or duty created by the Exchange Act or the rules and regulations thereunder. Our restated certificate of incorporation also provides that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of and to have consented to this choice of forum provision. Our restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. It is possible that a court of law could rule that the choice of forum provision contained in our restated certificate of incorporation is inapplicable or unenforceable if it is challenged in a proceeding or otherwise.

Amendment of charter provisions

The amendment of any of the above provisions, except for the provision making it possible for our board of directors to issue preferred stock and the provision prohibiting cumulative voting, would require approval by holders of at least two-thirds in voting power of the outstanding shares of stock entitled to vote thereon. The provisions of Delaware law, our restated certificate of incorporation and our amended and restated bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in the composition of our board and management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

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Nasdaq Global Select Market

Our common stock is listed on the Nasdaq Global Select Market under the symbol “FREQ.”

SELLING STOCKHOLDERS

On July 17, 2020, we entered into a securities purchase agreement, or the Purchase Agreement, with the selling stockholders, pursuant to which we issued and sold 2,350,108 shares of our common stock at a price of \$18.00 per share for gross proceeds of approximately \$42.3 million, or the Private Placement. The Private Placement closed on July 20, 2020.

In connection with the Private Placement, we entered into a registration rights agreement with the selling stockholders, dated as of July 17, 2020, or the Registration Rights Agreement, pursuant to which we agreed to file a registration statement with the SEC covering the resale of the shares of common stock sold in the Private Placement. We agreed to file such registration statement within 60 days after the date of the Registration Rights Agreement. The Registration Rights Agreement includes customary indemnification rights in connection with the registration statement. The registration statement of which this prospectus is a part is being filed in accordance with the Registration Rights Agreement.

The table below sets forth, to our knowledge, information concerning the beneficial ownership of shares of our common stock held by the selling stockholders as of July 31, 2020. The information in the table below with respect to the selling stockholders has been obtained from the selling stockholders. The selling stockholders may sell all, some or none of the shares of common stock subject to this prospectus. See “Plan of Distribution.”

The number of shares of common stock beneficially owned prior to the offering for each selling stockholder includes all shares of common stock held by such selling stockholder as of July 31, 2020, including the shares of common stock purchased by such selling stockholder in the Private Placement. The percentages of shares of common stock beneficially owned prior to and after the offering are based on 33,645,901 shares of common stock outstanding as of July 31, 2020, which includes the shares of common stock offered by this prospectus.

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to shares of our common stock. Unless otherwise indicated below, to our knowledge, all selling stockholders named in the table have sole voting and investment power with respect to their shares of common stock. The inclusion of any shares in this table does not constitute an admission of beneficial ownership for the selling stockholders named below.

Except as disclosed herein, none of the selling stockholders has held any position or office, or has otherwise had a material relationship, with us or our subsidiary within the past three years, other than as described below.

Name of Selling Stockholder	Shares of Common Stock Beneficially Owned Prior to Offering		Number of Shares of Common Stock Being Offered	Shares of Common Stock to be Beneficially Owned After Offering (1)	
	Number	Percentage		Number	Percentage
Entities associated with Wasatch Funds Trust (2)	2,682,081	8.0%	939,000	1,743,081	5.2%
Federated Funds (3)	388,888	1.2%	388,888	—	*
RTW Funds (4)	2,461,486	7.3%	300,000	2,161,486	6.4%
Perceptive Life Sciences Master Fund LTD (5)	3,256,518	9.7%	222,222	3,034,296	9.2%
G & E Dubin Family Foundation (6)	111,111	*	111,111	—	*
Driehaus Life Sciences Master Fund, L.P. (7)	131,111	*	111,111	20,000	*
Maven Investment Partners US Ltd—New York Branch (8)	111,111	*	111,111	—	*
Alexandria Venture Investments, LLC (9)	1,011,730	3.0%	55,555	956,175	2.8%
Alain J. Cohen Revocable Trust (10)	538,942	1.6%	55,555	483,387	1.4%
Baker Bros. Advisors LP (11)	55,555	*	55,555	—	*

* Less than 1%.

(1) We do not know when or in what amounts a selling stockholder may offer shares for sale. The selling stockholders might not sell any or all of the shares offered by this prospectus. Because the selling stockholders may offer all or some

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of the shares pursuant to this offering, and because there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares, we cannot estimate the number of the shares that will be held by the selling stockholders after completion of the offering. However, for purposes of this table, we have assumed that, after completion of the offering, none of the shares covered by this prospectus will be held by the selling stockholders.

- (2) Consists of 1,092,807 shares of common stock held by Wasatch Small Cap Growth Fund, 1,120,938 shares of common stock held by the Wasatch Ultra Growth Fund, 402,336 shares of common stock held by the Wasatch Micro Cap Fund and 66,000 shares of common stock held by the Wasatch Micro Cap Value Fund (collectively, the “Wasatch Funds”). JB Taylor, Ken Korngiebel & Ryan Snow have voting and investment power with respect to the shares owned by Wasatch Small Cap Growth Fund. John Malooly has voting and investment power with respect to the shares owned by Wasatch Ultra Growth Fund. Ken Korngiebel has voting and investment power with respect to the shares owned by Wasatch Micro Cap Fund. Brian Bythrow has voting and investment power with respect to the shares owned by Wasatch Micro Cap Value Fund. The address for the beneficial owners is 505 Wakara Way, 3rd Floor, Salt Lake City, Utah 84108.
- (3) Consists of (i) 205,800 shares of common stock held by Federated Hermes Kaufmann Fund, a portfolio of Federated Hermes Equity Funds, (ii) 178,000 shares of common stock held by Federated Hermes Kaufmann Small Cap Fund, a portfolio of Federated Hermes Equity Funds and (iii) 5,088 shares of common stock held by Federated Hermes Kaufmann Fund II, a Federated Hermes Insurance Series (collectively, the “Federated Funds”). The address of the Federated Funds is 4000 Ericsson Drive, Warrendale, Pennsylvania 15086-7561.
- (4) Consists of 2,461,486 shares of common stock held in the aggregate by RTW Master Fund, Ltd., RTW Innovation Master Fund, Ltd. and RTW Venture Fund Limited (collectively, the “RTW Funds”). RTW Investments, LP is the investment manager to the RTW Funds. Roderick Wong, M.D., is the managing partner and chief investment officer of RTW Investments, LP. RTW Investments, LP and Dr. Wong exercises voting and dispositive control over the securities held by RTW and is therefore deemed to be a beneficial owner of securities owned or controlled by RTW. Each of RTW and Dr. Wong disclaim beneficial ownership of the reported securities held by the RTW Funds, except to the extent of its or his pecuniary interest therein. The address of the RTW Funds is c/o RTW Investments, LP, 40 10th Avenue, Floor 7, New York, New York 10014.
- (5) Consists of shares of common stock held by Perceptive Life Sciences Master Fund LTD (the “Master Fund”). Perceptive Advisors LLC (“Perceptive”) is the investment manager to the Master Fund and may be deemed to beneficially own the securities directly held by the Master Fund. Joseph Edelman is the managing member of Perceptive. Perceptive and Mr. Edelman may be deemed to beneficially own the shares held by the Master Fund. The address of Perceptive is 51 Astor Place, 10th Floor, New York, New York 10003.
- (6) Consists of shares held by G & E Dubin Family Foundation (the “G&E Foundation”). Glenn Dubin is the trustee of the G & E Foundation and may be deemed to have investment discretion and voting power over the shares held by the G&E Foundation. Mr. Dubin resigned from our board of directors in July 2019. The address of the G&E Foundation is 55 Hudson Yards, Floor 29, New York, New York 10001.
- (7) Consists of shares of common stock held by Driehaus Life Sciences Master Fund, L.P. (the “Driehaus Master Fund”). Driehaus Capital Management LLC is the investment adviser of Driehaus Master Fund and may be deemed to beneficially own the securities directly held by the Driehaus Master Fund. Michael Caldwell is a portfolio manager of the Driehaus Master Fund and may have investment discretion or voting power and may be deemed to beneficially own shares directly held by the Driehaus Master Fund. The address of the Driehaus Master Fund is 25 E. Erie, Chicago, Illinois 60611.
- (8) Consists of shares of common stock held by Maven Investment Partners US Ltd—New York Branch (“Maven”), which owns the shares. Anand K. Sharma may be deemed to have investment discretion and voting power over the shares held by Maven. The address of Maven is 675 3rd Ave., 15th Floor, New York, New York 10017.
- (9) Consists of shares of common stock held by Alexandria Venture Investments, LLC (“Alexandria”). Alexandria Real Estate Equities, Inc. is the managing member of Alexandria. Joel Marcus is the co-founder and the executive chairman of Alexandria Real Estate Equities, Inc. and a member of our board of directors and may be deemed to beneficially own the shares held by Alexandria. The address of Alexandria is 26 North Euclid Ave., Pasadena, California 91101.
- (10) Consists of shares of common stock held by the Alain J. Cohen Revocable Trust. Alain J. Cohen is the Trustee of the Alain J. Cohen Revocable Trust, and may be deemed to beneficially own the shares directly held by the Alain J. Cohen Revocable Trust.
- (11) Consists of (a) 51,795 shares of common stock held by Baker Brothers Life Sciences, L.P. (“BBLS”) and (b) 3,760 shares of common stock held directly by 667, L.P. (“667” and together with BBLS, the “Baker Funds”). Baker Bros. Advisors LP (“BBA”) is the management company and investment adviser to the Baker Funds and may be deemed to beneficially own the securities held by the Baker Funds. Baker Bros. Advisors (GP) LLC (“BBA-GP”) is the sole general partner of BBA. Julian C. Baker and Felix J. Baker have voting and investment power over the securities held by the Baker Funds, as managing members of BBA-GP. Julian C. Baker, Felix J. Baker, BBA and BBA-GP disclaim beneficial ownership of the securities held by the Baker Funds, except to the extent of their pecuniary interest therein. The address for BBA, BBA-GP, Julian C. Baker and Felix J. Baker is 860 Washington Street, 3rd Floor, New York, NY 10014.

PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted by applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act, amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock 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.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders 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).

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The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

The selling stockholders also may resell all or a portion of the 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.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agent, dealer or underwriter, and 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.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders 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 stockholders 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 stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to use our best efforts to cause the registration statement of which this prospectus constitutes a part to become effective and our commercially reasonable efforts to cause this registration statement to remain continuously effective until, with respect to each selling stockholder, the earlier of (1) such time as all of the shares held by such selling stockholder covered by this prospectus have been disposed of pursuant to and in accordance with this registration statement, (2) such time as such shares held by such selling stockholder have been sold pursuant to Rule 144 of the Securities Act, (3) such time when all of the shares held by such selling stockholder may be sold without restriction pursuant to Rule 144 of the Securities Act and (4) such time as when the shares held by such selling stockholder have been sold to us.

LEGAL MATTERS

The validity of the shares of our common stock offered hereby will be passed upon for us by Latham & Watkins LLP. Certain attorneys of Latham & Watkins LLP own less than 1% of the shares of our common stock.

EXPERTS

The consolidated financial statements of Frequency Therapeutics, Inc. as of December 31, 2019 and 2018 and for each of the three years in the period ended December 31, 2019 incorporated in this Prospectus by reference from the Frequency Therapeutics, Inc. Annual Report on Form 10-K for the year ended December 31, 2019 have been audited by RSM US LLP, an independent registered public accounting firm, as stated in their report thereon, incorporated herein by reference, and have been incorporated in this Prospectus and Registration Statement in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the Securities and Exchange Commission a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information about us and the common stock offered hereby, we refer you to the registration statement and the exhibits and schedules filed thereto. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. We file periodic reports, proxy statements, and other information with the SEC pursuant to the Exchange Act. The SEC maintains a website that contains reports, proxy statements and other information about registrants, like us, that file electronically with the SEC. The address of that site is www.sec.gov.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with it, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Any statement contained in a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus modifies or replaces that statement. This prospectus incorporates by reference the documents listed below, but excludes any information furnished to, rather than filed with, the SEC.

- Our Annual Report on [Form 10-K](#) for the year ended December 31, 2019, filed with the SEC on March 26, 2020;
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, filed with the SEC on [May 14, 2020](#) and for the quarter ended June 30, 2020, filed with the SEC on [August 12, 2020](#);
- Our Current Reports on Form 8-K, filed with the SEC on [January 13, 2020](#), [June 12, 2020](#) and [July 21, 2020](#);
- Our [Definitive Proxy Statement](#) on Schedule 14A filed with the SEC on April 29, 2020; and
- The description of our common stock contained in our Registration Statement on [Form 8-A](#) filed on September 23, 2019, including any amendments or reports filed for the purpose of updating such description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference in this prospectus, including exhibits to these documents. You should direct any requests for documents to Frequency Therapeutics, Inc., 19 Presidential Way, 2nd Floor, Woburn, Massachusetts 01801 or by telephone at (866) 389-1970. These documents may also be found on our website at www.frequencytx.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

2,350,108 Shares



Common Stock

Prospectus

, 2020

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the various expenses to be incurred in connection with the sale and distribution of the securities being registered hereby, all of which will be borne by us (except any underwriting discounts and commissions and expenses incurred by the selling stockholders for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholders in disposing of the shares). All amounts shown are estimates except the Securities and Exchange Commission, or SEC, registration fee.

	Amount
SEC registration fee	\$ 6,055
Accounting fees and expenses	20,000
Legal fees and expenses	50,000
Miscellaneous fees and expenses	3,945
Total expenses	<u>\$ 80,000</u>

Item 14. Indemnification of Directors and Officers.

Section 102 of the General Corporation Law of the State of Delaware permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our restated certificate of incorporation provides that none of our directors shall be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to 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 other adjudicating court determines that, despite the adjudication of liability but in view of all of 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.

Our restated certificate of incorporation provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in

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settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our restated certificate of incorporation provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys' fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

We have entered into indemnification agreements with each of our directors and officers. These indemnification agreements may require us, among other things, to indemnify our directors and officers for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of his or her service as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

In any underwriting agreement we enter into in connection with the sale of common stock being registered hereby, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act of 1933, as amended, or the Securities Act, against certain liabilities.

Item 15. Recent Sales of Unregistered Securities.

Set forth below is information regarding shares of capital stock issued by us within the past three years. Also included is the consideration received by us for such shares and information relating to the section of the Securities Act, or rule of the SEC, under which exemption from registration was claimed.

Issuance of capital stock

In December 2017, we issued an aggregate of 1,555,725 shares of common stock to three accredited investors as partial consideration for the license rights granted under our license agreement with the Massachusetts Institute of Technology. The shares were issued pursuant to Section 4(a)(2) of the Securities Act and Rule 506 as a transaction not involving a public offering.

From March 2017 to October 2018, we issued an aggregate of 62,528,507 shares of Series A convertible preferred stock and 10,000 shares of Series A-1 convertible preferred stock for approximate aggregate consideration of \$28.2 million and upon the conversion of convertible notes in satisfaction of debt totaling \$15.0 million in principal and accrued interest to accredited investors pursuant to Section 4(a)(2) of the Securities Act and Rule 506 as transactions not involving a public offering.

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From October 2018 to February 2019, we issued 42,145,996 shares of Series B convertible preferred stock and 10,000 shares of Series B-1 convertible preferred stock for approximate aggregate consideration of \$33.4 million and upon the conversion of convertible notes in satisfaction of debt totaling \$5.1 million in principal and accrued interest to accredited investors pursuant to Section 4(a)(2) of the Securities Act and Rule 506 as transactions not involving a public offering.

In July 2019, we issued 39,492,960 shares of Series C convertible preferred stock for aggregate consideration of approximately \$62.0 million to accredited investors pursuant to Rule 506 as a transaction not involving a public offering.

In July 2020, we issued 2,350,108 shares of our common stock for approximate aggregate consideration of \$42.3 million to accredited investors pursuant to Section 4(a)(2) of the Securities Act and Rule 506 as transactions not involving a public offering.

Equity grants

Since January 1, 2017, we issued an aggregate of 1,015,568 shares of common stock pursuant to stock options exercised by certain of our employees, consultants and directors in connection with services provided to the registrant by such parties, with exercise prices ranging between \$0.07 and \$7.48 per share.

Since January 1, 2017 we granted stock options to purchase an aggregate of 7,987,532 shares of our common stock with exercise prices ranging between \$0.61 and \$25.05 per share, and 7,423 shares of restricted common stock to employees, non-employees, and directors in connection with services provided to the registrant by such parties.

The securities listed above were issued pursuant to written compensatory plans or arrangements with our employees, directors and consultants, in reliance on the exemption provided by Rule 701 promulgated under the Securities Act, or pursuant to Section 4(a)(2) under the Securities Act, relative to transactions by an issuer not involving any public offering, to the extent an exemption from such registration was required.

Convertible notes

Between April 2018 and June 2018, we issued 23 unsecured promissory notes, convertible into our Series B convertible preferred stock, for aggregate consideration of \$5.0 million to accredited investors pursuant to Section 4(a)(2) of the Securities Act and Rule 506 as a transaction not involving a public offering.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits

<u>Exhibit Number</u>	<u>Exhibit Description</u>	<u>Form</u>	<u>Incorporated by Reference</u>			<u>Filed Herewith</u>
			<u>File No.</u>	<u>Exhibit</u>	<u>Filing Date</u>	
3.1	Restated Certificate of Incorporation of Frequency Therapeutics, Inc.	8-K	001-39062	3.1	10/7/19	
3.2	Amended and Restated Bylaws of Frequency Therapeutics, Inc.	8-K	001-39062	3.2	10/1/19	
4.1	Form of Specimen Common Stock Certificate	S-1/A	333-233652	4.1	9/23/19	
4.2	Second Amended and Restated Investors' Rights Agreement, dated as of July 17, 2019	S-1	333-233652	4.2	9/6/19	
5.1	Opinion of Latham & Watkins LLP					*

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<u>Exhibit Number</u>	<u>Exhibit Description</u>	<u>Incorporated by Reference</u>				<u>Filed Herewith</u>
		<u>Form</u>	<u>File No.</u>	<u>Exhibit</u>	<u>Filing Date</u>	
10.1	<u>2014 Stock Incentive Plan, as amended and form of option agreements thereunder</u>	S-1	333-233652	10.1	9/6/19	
10.2	<u>2019 Incentive Award Plan and form of option agreements thereunder</u>	S-1/A	333-233652	10.2	9/23/19	
10.3	<u>Non-Employee Director Compensation Program</u>	S-1/A	333-233652	10.3	9/23/19	
10.4	<u>Form of Indemnification Agreement for Directors and Officers</u>	S-1/A	333-233652	10.5	9/23/19	
10.5.1	<u>Lease Agreement, dated as of August 24, 2016, as amended, between ARE-MA Region No. 20 and Frequency Therapeutics, Inc.</u>	10-K	001-39062	10.5.1	3/26/20	
10.5.2	<u>Lease Agreement, effective as of August 1, 2019 between the University of Connecticut and Frequency Therapeutics, Inc.</u>	S-1/A	333-233652	10.6.2	9/23/19	
10.6	<u>Second Amended and Restated Executive Employment Agreement, dated as of September 20, 2019, between David L. Lucchino and Frequency Therapeutics, Inc.</u>	S-1/A	333-233652	10.7	9/23/19	
10.7	<u>Amended and Restated Employment Agreement, dated as of September 20, 2019, between Christopher R. Loose and Frequency Therapeutics, Inc.</u>	S-1/A	333-233652	10.8	9/23/19	
10.8	<u>Employment Agreement, dated as of September 19, 2019, between Carl P. LeBel and Frequency Therapeutics, Inc.</u>	S-1/A	333-233652	10.9	9/23/19	
10.9†	<u>Exclusive Patent License Agreement, dated as of December 13, 2016, as amended, between Massachusetts Institute of Technology and Frequency Therapeutics, Inc.</u>	S-1	333-233652	10.10	9/6/19	
10.10†	<u>Non-Exclusive Patent License Agreement, dated as of February 7, 2019, between Massachusetts Eye and Ear Infirmary and Frequency Therapeutics, Inc.</u>	S-1	333-233652	10.11	9/6/19	
10.11†	<u>License and Collaboration Agreement, dated as of July 16, 2019, between Astellas Pharma, Inc. and Frequency Therapeutics, Inc.</u>	S-1	333-233652	10.12	9/6/19	
10.12	<u>2019 Employee Stock Purchase Plan</u>	S-1/A	333-233652	10.13	9/23/19	
10.13	<u>Indenture of Lease, effective as of January 7, 2020 between HCP/KING 75 Hayden LLC and Frequency Therapeutics, Inc.</u>	10-K	001-39062	10.13	3/26/20	
10.14	<u>Securities Purchase Agreement, dated July 17, 2020, by and among Frequency Therapeutics, Inc. and the Investors named therein.</u>	8-K	001-39062	10.1	7/21/20	

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<u>Exhibit Number</u>	<u>Exhibit Description</u>	<u>Incorporated by Reference</u>			<u>Filed Herewith</u>	
		<u>Form</u>	<u>File No.</u>	<u>Exhibit</u>		<u>Filing Date</u>
10.15	Registration Rights Agreement, dated July 17, 2020, by and among Frequency Therapeutics, Inc. and the Investors named therein.	8-K	001-39062	10.2	7/21/20	
21.1	Subsidiaries of Frequency Therapeutics, Inc.	10-K	001-39062	21.1	3/26/20	
23.1	Consent of RSM US LLP, Independent Registered Public Accounting Firm					*
23.2	Consent of Latham & Watkins LLP (included in Exhibit 5.1)					*
24.1	Power of Attorney (included on signature page)					*

* Filed herewith.

† Portions of this exhibit have been omitted pursuant to Item 601 of Regulation S-K promulgated under the Securities Act because the information is not material and would be competitively harmful if publicly disclosed.

(b) Financial Statement Schedules

No financial statement schedules are provided because the information called for is not required or is shown either in the financial statements or the related notes.

Item 17. Undertakings.

(a) 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, as amended (the “Securities Act”);
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of this 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 this Registration Statement. Notwithstanding the foregoing, any increase or decrease in the 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 Securities and Exchange Commission (the “Commission”) pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective Registration Statement; and
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), that are incorporated by reference in this Registration Statement.

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- (2) That, for the purposes of determining any liability under the Securities Act, each 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 the 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 of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; 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 first use, 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 date of first use.
- (b) The 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 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 this 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 indemnification provisions described herein, or otherwise, the Registrant has been advised that in the opinion of the Commission 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, we will, unless in the opinion of our 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, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Woburn, Massachusetts, on this 28th day of August, 2020.

FREQUENCY THERAPEUTICS, INC.

By: /s/ David L. Lucchino
Name: David L. Lucchino
Title: President and Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of Frequency Therapeutics, Inc., hereby severally constitute and appoint David L. Lucchino and Michael D. Bookman, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him or her and in his or her name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and any other registration statement for the same offering pursuant to Rule 462(b) under the Securities Act of 1933, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their, his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities held on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ David L. Lucchino</u> David L. Lucchino	President, Chief Executive Officer and Director (principal executive officer)	August 28, 2020
<u>/s/ Richard Mitrano</u> Richard Mitrano	Vice President, Finance and Operations (principal financial officer and principal accounting officer)	August 28, 2020
<u>/s/ Marc A. Cohen</u> Marc A. Cohen	Chairman and Director	August 28, 2020
<u>/s/ Timothy J. Barberich</u> Timothy J. Barberich	Director	August 28, 2020
<u>/s/ Michael Huang</u> Michael Huang	Director	August 28, 2020
<u>/s/ Robert S. Langer, Sc.D.</u> Robert S. Langer, Sc.D.	Director	August 28, 2020
<u>/s/ Joel S. Marcus</u> Joel S. Marcus	Director	August 28, 2020

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LATHAM & WATKINS LLP

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Boston	Munich
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Frankfurt	San Francisco
Hamburg	Seoul
Hong Kong	Shanghai
Houston	Silicon Valley
London	Singapore
Los Angeles	Tokyo
Madrid	Washington, D.C.
Milan	

August 28, 2020

Frequency Therapeutics, Inc.
 19 Presidential Way
 Woburn, MA 01801

Re: Registration Statement on Form S-1; 2,350,108 shares of common stock, par value \$0.001 per share

Ladies and Gentlemen:

We have acted as special counsel to Frequency Therapeutics, Inc., a Delaware corporation (the “*Company*”), in connection with the resale from time to time by the selling stockholders (the “*Selling Stockholders*”) named in the Registration Statement (as defined below) of 2,350,108 shares (the “*Shares*”) of the Company’s common stock, \$0.001 par value per share. The Shares are included in a registration statement on Form S-1 under the Securities Act of 1933, as amended (the “*Act*”), filed with the Securities and Exchange Commission on August 28, 2020 (the “*Registration Statement*”). This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or the prospectus contained therein, other than as expressly stated herein with respect to the issue of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the Delaware General Corporation Law, and we express no opinion with respect to any other laws.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, the issue and sale of the Shares have been duly authorized by all necessary corporate action of the Company, and the Shares are validly issued, fully paid and nonassessable.

In rendering the foregoing opinion, we have assumed that the Company complied with all applicable notice requirements regarding uncertificated shares provided in the Delaware General Corporation Law.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm in the Prospectus under the heading “Legal Matters.” In giving such consent, we do not thereby

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admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ LATHAM & WATKINS LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Registration Statement on Form S-1 and related Prospectus of Frequency Therapeutics, Inc. of our report dated March 26, 2020, relating to the consolidated financial statements of Frequency Therapeutics, Inc. and its subsidiaries, appearing in the Annual Report on Form 10-K of Frequency Therapeutics, Inc. for the year ended December 31, 2019.

We also consent to the reference to our firm under the heading “Experts” in such Prospectus.

/s/ RSM US LLP

Boston, Massachusetts
August 28, 2020