

**PROSPECTUS SUPPLEMENT NO. 8
(TO PROSPECTUS DATED July 10, 2020)**

**STEALTH BIOTHERAPEUTICS CORP
Up to 9,826,321 American Depositary Shares**

This prospectus supplement No. 8 supplements and amends the prospectus dated July 10, 2020, as supplemented by prospectus supplement No.1, dated August 6, 2020, prospectus supplement No. 2, dated November 9, 2020, prospectus supplement No. 3, dated November 19, 2020, prospectus supplement No. 4, dated April 6, 2021, prospectus supplement No. 5, dated October 4, 2021, prospectus supplement No. 6, dated October 20, 2021 and prospectus supplement No. 7, dated January 7, 2022 related to the resale, from time to time, of up to 9,826,321 American Depositary Shares (“ADSS”), par value \$0.0003 per share, of Stealth BioTherapeutics Corp (the “Company,” “we,” “us” or “our”), issued and issuable to Lincoln Park Capital Fund, LLC (“Lincoln Park”), the selling stockholder named in the prospectus, pursuant to a purchase agreement dated as of June 2, 2020 that we entered into with Lincoln Park. We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of the ADSs by the selling stockholder.

This prospectus supplement should be read in conjunction with the prospectus dated July 10, 2020, which is to be delivered with this prospectus supplement. This prospectus supplement is qualified by reference to the prospectus except to the extent that the information in this prospectus supplement supersedes the information contained in the prospectus. This prospectus supplement is not complete without, and may not be delivered or utilized except in connection with, the prospectus, including any amendments or supplements to it.

Our ADSs are listed on The Nasdaq Global Market under the symbol “MITO.” On February 11, 2022, the last reported sale price of our ADSs reported on The Nasdaq Global Market was \$0.62.

This prospectus supplement incorporates into our prospectus the information contained in our Report of Foreign Private Issuer on Form 6-K filed with the Securities and Exchange Commission on February 11, 2022, which is attached hereto.

Investing in our ADSs involves risks. See “Risk Factors” beginning on page 4 of the prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the prospectus to which it relates are truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is February 11, 2022.

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

FORM 6-K

**REPORT OF FOREIGN PRIVATE ISSUER
PURSUANT TO RULE 13a-16 OR 15d-16
UNDER THE SECURITIES EXCHANGE ACT OF 1934**

For the month of February 2022

Commission File Number 001-38810

STEALTH BIOTHERAPEUTICS CORP

(Translation of registrant's name into English)

**Stealth BioTherapeutics Corp
c/o Intertrust Corporate Services (Cayman) Limited
One Nexus Way, Camana Bay
Grand Cayman
KY1-9005 Cayman Islands
(Address of principal executive office)**

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

FORM 20-F FORM 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

On February 11, 2022, the Company received a deficiency letter from the Staff of Nasdaq notifying the Registrant that the Registrant's listed securities did not maintain a minimum Market Value of Publicly Held Shares of \$15,000,000 ("**MVPHS**") for a period of 30 consecutive business days and that the Registrant did not meet the MVPHS requirement set forth in Nasdaq Listing Rule 5450(b)(2)(C) for inclusion on the Nasdaq Global Market.

The Nasdaq deficiency letters do not result in the immediate delisting of the Registrant's shares, and the shares will continue to trade uninterrupted under the symbol "MITO."

Pursuant to Nasdaq Listing Rule 5810(c)(3)(D), the Registrant has a compliance period of 180 calendar days, or until August 10, 2022 (the "**Compliance Period**"), to regain compliance with Nasdaq's minimum bid price requirement. If at any time during the Compliance Period, the Company's MVPHS closes at \$15,000,000 or more for a minimum of ten consecutive business days, Nasdaq will provide the Company a written confirmation of compliance and the matter will be closed.

On February 11, 2022, the Registrant issued a press release entitled "Stealth BioTherapeutics Receives Nasdaq Notification Regarding Minimum Market Value of Publicly Held Shares Requirement." A copy of the press release is filed as Exhibit 99.1 to this Current Report on Form 6-K and is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

STEALTH BIOTHERAPEUTICS CORP

By: /s/ Irene P. McCarthy
Irene P. McCarthy
Chief Executive Officer

Date: February 11, 2022

STEALTH BIOTHERAPEUTICS RECEIVES NASDAQ NOTIFICATION REGARDING MINIMUM MARKET VALUE OF PUBLICLY HELD SHARES REQUIREMENT

BOSTON – February 11, 2022 – Stealth BioTherapeutics Corp (Nasdaq:MITO), a clinical-stage biotechnology company focused on the discovery, development, and commercialization of novel therapies for diseases involving mitochondrial dysfunction, today announced that on February 11, 2022, it received a letter from The Nasdaq Stock Market LLC ("Nasdaq"), notifying the Company that it is currently not in compliance with the minimum Market Value of Publicly Held Shares (MVPHS) requirement based upon Nasdaq's review of the Company's MVPHS for the 30 consecutive business days through February 10, 2022. This press release is issued pursuant to Nasdaq Listing Rule 5810(b), which requires prompt disclosure of receipt of deficiency notifications.

The notifications have no immediate effect on the listing of the Company's ADSs, which will continue to trade uninterrupted on Nasdaq under the ticker "MITO."

Pursuant to Nasdaq Listing Rule 5810(c)(3)(D), the Company has a compliance period of 180 calendar days, or until August 10, 2022 (the "Compliance Period"), to regain compliance with Nasdaq's minimum bid price requirement. If at any time during the Compliance Period, the Company's MVPHS closes at \$15,000,000 or more for a minimum of ten consecutive business days, Nasdaq will provide the Company a written confirmation of compliance and the matter will be closed.

About Stealth

We are a clinical-stage biotechnology company focused on the discovery, development, and commercialization of novel therapies for diseases involving mitochondrial dysfunction. Mitochondria, found in nearly every cell in the body, are the body's main source of energy production and are critical for normal organ function. Dysfunctional mitochondria characterize a number of rare genetic diseases and are involved in many common age-related diseases, typically involving organ systems with high energy demands such as the heart, the eye, and the brain. We believe our lead product candidate, elamipretide, has the potential to treat ophthalmic diseases entailing mitochondrial dysfunction, such as dry age-related macular degeneration, and rare diseases such as primary mitochondrial myopathy, DMD and Barth syndrome. We are evaluating our second-generation clinical-stage candidate, SBT-272, and our new series of small molecules, SBT-550, for rare neurological disease indications following promising preclinical data. We have optimized our discovery platform to identify novel mitochondria-targeted compounds which may be nominated as therapeutic product candidates or utilized as mitochondria-targeted vectors to deliver other compounds to mitochondria.

Forward-looking Statements

This press release contains forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Such forward-looking statements include those regarding Stealth BioTherapeutics' expectations for its continued listing on the Nasdaq Capital Market and its interactions with Nasdaq. Statements that are not historical facts, including statements about Stealth BioTherapeutics' beliefs, plans and expectations, are forward-looking statements. The words "anticipate," "expect," "hope," "plan," "potential," "possible," "will," "believe," "estimate," "intend," "may," "predict," "project," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Stealth BioTherapeutics may not actually achieve the plans, intentions or expectations disclosed in these forward-looking statements, and you should not place undue reliance on these forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements as a result of known and unknown risks, uncertainties and other important factors, including: Stealth BioTherapeutics' ability to obtain additional funding and to continue as a going concern; the impact of the COVID-19 pandemic; the ability to successfully demonstrate the efficacy and safety of Stealth BioTherapeutics' product candidates and future product candidates; the preclinical and clinical results for Stealth BioTherapeutics' product candidates, which may not support further development and marketing approval; the potential advantages of Stealth BioTherapeutics' product candidates; the content and timing of decisions made by the FDA, the EMA or other regulatory authorities, investigational review boards at clinical trial sites and publication review bodies, which may affect the initiation, timing and progress of preclinical studies and clinical trials of Stealth BioTherapeutics product candidates; Stealth BioTherapeutics' ability to obtain and maintain requisite regulatory approvals and to enroll patients in its planned

clinical trials; unplanned cash requirements and expenditures; competitive factors; Stealth BioTherapeutics' ability to obtain, maintain and enforce patent and other intellectual property protection for any product candidates it is developing; and general economic and market conditions. These and other risks are described in greater detail under the caption "Risk Factors" included in the Stealth BioTherapeutics' most recent Annual Report on Form 20-F filed with the Securities and Exchange Commission ("SEC"), as well as in any future filings with the SEC. Forward-looking statements represent management's current expectations and are inherently uncertain. Except as required by law, Stealth BioTherapeutics does not undertake any obligation to update forward-looking statements made by us to reflect subsequent events or circumstances.

Investor Relations

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