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

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**FORM S-1**  
**REGISTRATION STATEMENT**  
*UNDER*  
*THE SECURITIES ACT OF 1933*

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**INOZYME PHARMA, INC.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**2834**  
(Primary Standard Industrial  
Classification Code Number)

**38-4024528**  
(I.R.S. Employer  
Identification Number)

**321 Summer Street  
Suite 400  
Boston, Massachusetts 02210  
(857) 330-4340**  
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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**Axel Bolte**  
**President and Chief Executive Officer**  
**321 Summer Street  
Suite 400  
Boston, Massachusetts 02210  
(857) 330-4340**  
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*

**Brian A. Johnson**  
**Wilmer Cutler Pickering Hale and Dorr LLP**  
**7 World Trade Center**  
**250 Greenwich Street**  
**New York, New York 10007**  
**Telephone: (212) 230-8800**

**Ilijir Mujalovic**  
**Shearman & Sterling LLP**  
**599 Lexington Avenue**  
**New York, New York 10022**  
**Telephone: (212) 848-4000**

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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.  333-239648

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, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer   
Non-accelerated filer

Accelerated filer   
Smaller reporting company   
Emerging growth company

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.

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**CALCULATION OF REGISTRATION FEE**

<b>Title of Each Class of Securities to be Registered</b>	<b>Amount to be Registered(1)</b>	<b>Proposed Maximum Offering Price Per Share(2)</b>	<b>Proposed Maximum Aggregate Offering Price(2)</b>	<b>Amount of Registration Fee</b>
Common stock, \$0.0001 par value per share	575,000	\$16.00	\$9,200,000	\$1,195

(1) Includes 75,000 shares of common stock that the underwriters have the option to purchase.

(2) Calculated pursuant to Rule 457(a) under the Securities Act of 1933, as amended, based on the initial public offering price.

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## EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

This registration statement is being filed with respect to the registration of additional shares of common stock, par value \$0.0001 per share, of Inozyme Pharma, Inc., a Delaware corporation, pursuant to Rule 462(b) under the Securities Act of 1933, as amended. The contents of the earlier registration statement on [Form S-1](#) (File No. 333-239648), which was declared effective by the Securities and Exchange Commission on July 23, 2020, including the exhibits thereto, are incorporated in this registration statement by reference.

The required opinions and consents are listed on an Exhibit Index attached hereto and filed herewith.

## EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
5.1	<a href="#">Opinion of Wilmer Cutler Pickering Hale and Dorr LLP</a>
23.1	<a href="#">Consent of Ernst &amp; Young LLP, independent registered public accounting firm</a>
23.2	<a href="#">Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)</a>
24.1	<a href="#">Power of Attorney (incorporated by reference to the signature page to the Registrant's Registration Statement on Form S-1 (File No. 333-239648) filed with the Securities and Exchange Commission on July 2, 2020)</a>

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Boston, Commonwealth of Massachusetts, on this 23<sup>rd</sup> day of July, 2020.

**INOZYME PHARMA, INC.**

By: /s/ Axel Bolte

Axel Bolte

*President and Chief Executive Officer*

## SIGNATURES

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Axel Bolte</u> Axel Bolte	President and Chief Executive Officer, Director (Principal Executive Officer)	July 23, 2020
<u>/s/ Stephen Basso</u> Stephen Basso	Senior Vice President, Finance (Principal Financial Officer and Principal Accounting Officer)	July 23, 2020
<u>*</u> Douglas Treco	Chairman	July 23, 2020
<u>*</u> Sarah Bhagat	Director	July 23, 2020
<u>*</u> Reinaldo Diaz	Director	July 23, 2020
<u>*</u> Martin Edwards	Director	July 23, 2020
<u>*</u> Robert Hopfner	Director	July 23, 2020
<u>*</u> Edward Mathers	Director	July 23, 2020
<u>*</u> Lynne Sullivan	Director	July 23, 2020
<u>* By: /s/ Axel Bolte</u> Axel Bolte Attorney-in-fact		

July 23, 2020

Inozyme Pharma, Inc.  
321 Summer Street, Suite 400  
Boston, Massachusetts 02210

Registration Statement on Form S-1

Ladies and Gentlemen:

This opinion is furnished to you in connection with a Registration Statement on Form S-1 (the "Registration Statement") filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), pursuant to Rule 462(b) of the Securities Act, for the registration of 575,000 shares of Common Stock, par value \$0.0001 per share (the "Shares"), of Inozyme Pharma, Inc., a Delaware corporation (the "Company"), including 75,000 Shares issuable upon exercise of an option granted by the Company.

The Shares are to be sold by the Company pursuant to an underwriting agreement (the "Underwriting Agreement") to be entered into by and among the Company and BofA Securities, Inc., Cowen and Company, LLC and Piper Sandler & Co., as representatives of the several underwriters named in the Underwriting Agreement, the form of which has been incorporated by reference into the Registration Statement.

We are acting as counsel for the Company in connection with the issue and sale by the Company of the Shares. We have examined signed copies of the Registration Statement as filed with the Commission. We have also examined and relied upon the Underwriting Agreement, minutes of meetings and actions of the stockholders and the Board of Directors of the Company as provided to us by the Company, stock record books of the Company as provided to us by the Company, the Certificate of Incorporation and Bylaws of the Company, each as restated and/or amended to date, and such other documents as we have deemed necessary for purposes of rendering the opinions hereinafter set forth.

In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as copies, the authenticity of the originals of such latter documents and the legal competence of all signatories to such documents.

We express no opinion herein as to the laws of any state or jurisdiction other than the General Corporation Law of the State of Delaware and the federal laws of the United States of America.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly authorized for issuance and, when the Shares are issued and paid for in accordance with the terms and conditions of the Underwriting Agreement, the Shares will be validly issued, fully paid and nonassessable.

Wilmer Cutler Pickering Hale and Dorr LLP, 7 World Trade center, 250 Greenwich Street, New York, New York 10007  
Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Palo Alto San Francisco Washington

July 23, 2020

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Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of our name therein and in the related Prospectus under the caption "Legal Matters." In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

WILMER CUTLER PICKERING HALE AND DORR LLP

By: /s/ Brian A. Johnson

Brian A. Johnson, a Partner



Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-1 filed pursuant to Rule 462(b) of the Securities Act of 1933 of the reference to our firm under the caption “Experts” and to the incorporation by reference of our report dated May 8, 2020, except for Note 13(d), as to which the date is July 20, 2020, in Amendment No. 3 to the Registration Statement (Form S-1 No. 333-239648) and related Prospectus of Inozyme Pharma, Inc. for the registration of its common stock.

/s/ Ernst & Young LLP

Boston, Massachusetts  
July 23, 2020