As filed with the Securities and Exchange Commission on April 27, 2018

Registration No. 333-

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM S-8

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

MADRIGAL PHARMACEUTICALS, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

04-3508648 (I.R.S. Employer Identification Number)

Four Tower Bridge 200 Barr Harbor Drive, Suite 400 West Conshohocken, Pennsylvania 19428 (Address of Principal Executive Offices; Zip Code)

MADRIGAL PHARMACEUTICALS, INC. AMENDED 2015 STOCK PLAN

(Full Title of the Plan)

Marc R. Schneebaum Chief Financial Officer Madrigal Pharmaceuticals, Inc. Four Tower Bridge 200 Barr Harbor Drive, Suite 400 West Conshohocken, Pennsylvania 19428 (484) 380-9263

(Name, Address and Telephone Number, Including Area Code, of Agent For Service)

Copies to: Michael L. Lawhead Baker & Hostetler, LLP 600 Anton Boulevard, Suite 900 Costa Mesa, CA 92626 (714) 754-6600

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 fileroNon-accelerated filero(Do not check if a smaller reporting company)

Accelerated filerxSmaller reporting companyoEmerging growth companyo

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. o

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, par value \$0.0001 per				
share	1,000,000(1) 5	5 107.49(2)	\$ 107,492,500(2) \$	13,382.82

(1) Consists of shares of common stock, par value \$0.0001 per share ("Common Stock"), of Madrigal Pharmaceuticals, Inc. (the "Registrant"), which may be sold upon the exercise of options or the issuance of stock awards which may hereafter be granted under the Madrigal Pharmaceuticals, Inc. Amended 2015 Stock Plan (the "2015 Plan"). The maximum number of shares which may be sold upon the exercise of options or the issuance of stock-based awards granted under the 2015 Plan is subject to adjustment in accordance with certain anti-dilution and other provisions of the 2015 Plan. Accordingly, pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement covers, in addition to the number of shares stated above, an indeterminate number of shares which may be subject to grant or otherwise issuable upon the operation of any such anti-dilution and other provisions of the 2015 Plan.

(2) This calculation is made solely for the purpose of determining the registration fee pursuant to the provisions of Rule 457(c) and (h) under the Securities Act based on the average of the high and low sale prices per share of Common Stock on The NASDAQ Global Market as of a date (April 25, 2018)

REGISTRATION OF ADDITIONAL SECURITIES PURSUANT TO GENERAL INSTRUCTION E.

Pursuant to General Instruction E to Form S-8, this Registration Statement on Form S-8 (this "Registration Statement") is filed to register an additional 1,000,000 shares of common stock, par value \$0.0001 per share ("Common Stock"), of Madrigal Pharmaceuticals, Inc. (the "Registrant") reserved under the Madrigal Pharmaceuticals, Inc. Amended 2015 Stock Plan (the "Plan"). This Registration Statement registers additional securities of the same class as other securities of the Registrant for which the registration statements filed on Form S-8 (File Nos. 333-206128 and 333-212615) of the Registrant are effective. The information contained in the Registrant's registration statements on Form S-8 (File Nos. 333-206128 and 333-212615) are hereby incorporated by reference pursuant to General Instruction E of Form S-8.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents, which have been filed by the Registrant with the U.S. Securities and Exchange Commission (the "Commission"), are incorporated by reference in this Registration Statement (excluding any portions of such documents that have been "furnished" but not "filed" for purposes of the Securities Exchange Act of 1934, as amended (the "Exchange Act")):

- the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2017, filed with the Commission on March 13, 2018, and the portions of the Registrant's Definitive Proxy Statement on Schedule 14A, filed with the Commission on April 27, 2018, incorporated by reference into the Registrant's Annual Report on Form 10-K;
- the description of the Registrant's common stock contained in the Registrant's Registration Statement on Form 8-A, filed with the Commission on January 26, 2007, including any amendment or report filed for the purpose of updating such description; and
- all other reports filed by the Registrant pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal year covered by the Annual Report on Form 10-K referred to above.

All documents that the Registrant subsequently files under Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a posteffective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of filing of such documents (excluding any portions of such documents that have been "furnished" but not "filed" for purposes of the Exchange Act). Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 8. Exhibits.

The exhibits listed on the Exhibit Index immediately preceding such exhibits are filed as part of this Registration Statement, and the contents of the Exhibit Index are incorporated herein by reference.

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EXHIBIT INDEX

			Incorporated by Reference			
Exhibit		Filed		SEC File /		
Number	Exhibit Description	Herewith	Form	Registration Number	Exhibit	Filing Date
4.1	Restated Certificate of Incorporation of the		10-K	001-33277	3.1	03/31/17
	Registrant.					
4.2	Bylaws of the Registrant, as amended April 13,		DEFA14A;	001-33277	3.1	04/14/16
7.4			8-K	001-55277	5.1	04/14/10
	<u>2016.</u>		0-K			
5.1	<u>Opinion of Baker & Hostetler, LLP as to the</u>	Х				
	<u>legality of shares being registered.</u>					
23.1	Consent of Baker & Hostetler, LLP (included in	Х				
	opinion of counsel filed as Exhibit 5.1).					
	<u></u>					
23.2	Consent of PricewaterhouseCoopers LLP.	Х				
23.2	Consent of FIICewaternouseCoopers LLF.	Λ				
24		37				
24	Power of Attorney to file future amendments (set	Х				
	forth on the signature page of this Registration					
	<u>Statement).</u>					
99.1	Amended 2015 Stock Plan.		8-K	001-33277	10.1	07/05/17
2011				002002//		

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in West Conshohocken, Pennsylvania, on April 27, 2018.

MADRIGAL PHARMACEUTICALS, INC.

By: /s/ PAUL A. FRIEDMAN, M.D.

Paul A. Friedman, M.D. Chief Executive Officer

Each person whose signature appears below constitutes and appoints Paul A. Friedman, M.D., and Marc R. Schneebaum, and each of them singly, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them singly, 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 of Madrigal Pharmaceuticals, Inc. and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting to the 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 or 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 the attorneys-in-fact and agents or any of each of them or their substitute 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 and on the dates indicated.

Signature	Title	Date			
/s/ PAUL A. FRIEDMAN, M.D. Paul A. Friedman, M.D.	Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	April 27, 2018			
/s/ MARC R. SCHNEEBAUM Marc R. Schneebaum	Chief Financial Officer (Principal Financial and Accounting Officer)	April 27, 2018			
/s/ KENNETH M. BATE Kenneth M. Bate	Director	April 27, 2018			
/s/ FRED B. CRAVES, PH.D. Fred B. Craves, Ph.D.	Director	April 27, 2018			
/s/ KEITH R. GOLLUST Keith R. Gollust	Director	April 27, 2018			
/s/ RICHARD S. LEVY, M.D. Richard S. Levy, M.D.	Director	April 27, 2018			
/s/ DAVID MILLIGAN, PH.D. David Milligan, Ph.D.	Director	April 27, 2018			
/s/ REBECCA TAUB, M.D. Rebecca Taub, M.D.	Chief Medical Officer, Executive Vice President, Research & Development and Director	April 27, 2018			
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Madrigal Pharmaceuticals, Inc. Four Tower Bridge 200 Barr Harbor Drive, Suite 400 West Conshohocken, Pennsylvania 19428

Re: Securities Registered under Registration Statement on Form S-8

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the filing by Madrigal Pharmaceuticals, Inc., a Delaware corporation (the "**Company**"), of a Registration Statement on Form S-8 (the "**Registration Statement**") with the Securities and Exchange Commission (the "**Commission**") on April 27, 2018 covering the offering of up to 1,000,000 shares of the Company's common stock, par value \$0.0001 per share (the "**Common Stock**"), pursuant to the Madrigal Pharmaceuticals, Inc. Amended 2015 Stock Plan (the "**2015 Plan**"). The shares of the Common Stock that may be issued pursuant to the 2015 Plan are referred to herein as the "Shares."

In connection with the preparation of this opinion, we have examined such documents and considered such questions of law as we have deemed necessary or appropriate. We have assumed the authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies thereof and the genuineness of all signatures. As to questions of fact material to our opinion, we have relied upon the certificates of certain officers of the Company.

Based on the foregoing, we are of the opinion that the Shares, when issued and sold in accordance with the terms of the 2015 Plan, will be validly issued, fully paid and non-assessable.

We render this opinion only with respect to the General Corporation Law of the State of Delaware, and we express no opinion herein concerning the application or effect of the laws of any other jurisdiction.

We hereby consent to the use of this opinion as Exhibit 5.1 to the Registration Statement and to the reference to our firm in the Registration Statement and any amendments thereto. In giving such consent, we do not hereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations thereunder.

This opinion is intended solely for use in connection with the issuance and sale of the Shares pursuant to the Registration Statement and is not to be relied upon for any other purpose or delivered to or relied upon by any other person without our prior written consent. This opinion is rendered as of the date hereof and based solely on our understanding of facts in existence as of such date after the examination described in this opinion. We assume no obligation to advise you of any fact, circumstance, event or change in the law or the facts that may hereafter be brought to our attention whether or not such occurrence would affect or modify the opinions expressed herein.

Very truly yours, BAKER & HOSTETLER, LLP /s/ Baker & Hostetler, LLP

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of Madrigal Pharmaceuticals, Inc. of our report dated March 13, 2018 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in Madrigal Pharmaceutical, Inc.'s Annual Report on Form 10 K for the year ended December 31, 2017.

/s/ PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania April 27, 2018