

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee(1)(3)
Common Stock, \$0.0001 par value per share	\$148,833,000	\$19,318.52

- (1) Calculated in accordance with Rule 457(o) and Rule 457(r) under the Securities Act of 1933, as amended (the "Securities Act") based on the proposed maximum aggregate offering price.
- (2) Assumes exercise in full of the underwriter's option to purchase up to 180,000 additional shares of common stock.
- (3) Pursuant to Rule 457(p) under the Securities Act, the entire \$16,628.22 remaining of the filing fee previously paid pursuant to the registration statement filed on Form S-3 (File No. 333-206135) by Madrigal Pharmaceuticals, Inc. on August 6, 2015 relating to \$143,100,000 of unsold securities is being carried over to offset against the registration fee due for this offering. The balance \$2,690.30, has been paid with respect to this offering.

PROSPECTUS SUPPLEMENT
(To Prospectus dated June 5, 2018)

1,200,000 Shares Offered by Selling Stockholders



Common Stock **\$107.85 Per Share**

Entities affiliated with Bay City Capital LLC (collectively, the “selling stockholders”) are offering up to 1,200,000 shares of our common stock, pursuant to this prospectus supplement and the accompanying prospectus. We will not receive any proceeds from the sale of shares of common stock by the selling stockholders.

Our common stock trades on The Nasdaq Global Market under the trading symbol “MDGL”. On December 10, 2019, the last reported sale price of our common stock on The Nasdaq Global Market was \$118.50 per share.

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described under the heading “[Risk Factors](#)” beginning on page S-8 of this prospectus supplement before buying shares of our common stock.

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 accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	Per Share	Total
Public offering price	\$ 107.85	\$ 129,420,000
Underwriting discounts and commissions	\$ 2.38	\$ 2,856,000
Proceeds, before expenses, to the selling stockholders	\$ 105.47	\$ 126,564,000

We have agreed to reimburse the underwriter for certain expenses in connection with this offering. See “Underwriting”.

The selling stockholders named in this prospectus supplement have granted the underwriter the option to purchase up to an additional 180,000 shares of our common stock at the price set forth above, for 30 days after the date of this prospectus supplement.

The underwriter expects to deliver the shares against payment in New York, New York on or about December 13, 2019.

Goldman Sachs & Co. LLC

The date of this prospectus supplement is December 10, 2019

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It is expected that delivery of the shares will be made against payment therefor on or about December 13, 2019, which is the third business day following the date hereof (such settlement cycle being referred to as “T+3”). Under Rule 15c6-1 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), trades in the secondary market generally are required to settle in two business days unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the shares on the date of pricing will be required, by virtue of the fact that the shares initially will settle in T+3, to specify an alternative settlement cycle at the time of any such trade to prevent failed settlement. Purchasers of the shares who wish to trade the shares on the date of pricing should consult their own advisors.

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process and consists of two parts. The first part is the prospectus supplement, including the documents incorporated by reference herein, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference therein, provides more general information. In general, when we refer only to the prospectus, we are referring to both parts of this document combined. Before you invest, you should carefully read this prospectus supplement, the accompanying prospectus, all information incorporated by reference herein and therein, as well as the additional information described under the heading “Where You Can Find More Information.” These documents contain information you should carefully consider when deciding whether to invest in our common stock.

This prospectus supplement may add, update or change information contained in the accompanying prospectus. To the extent there is a conflict between the information contained in this prospectus supplement and the accompanying prospectus, you should rely on information contained in this prospectus supplement, provided that if any statement in, or incorporated by reference into, one of these documents is inconsistent with a statement in another document having a later date, the statement in the document having the later date modifies or supersedes the earlier statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so superseded will be deemed not to constitute a part of this prospectus.

You should rely only on the information contained in this prospectus supplement, the accompanying prospectus, any document incorporated by reference herein or therein, or any free writing prospectuses we may provide to you in connection with this offering. Neither we nor the underwriter or the selling stockholders have authorized anyone to provide you with any different information. 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 provide to you. The information contained in this prospectus supplement, the accompanying prospectus, and in the documents incorporated by reference herein or therein is accurate only as of the date such information is presented. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus supplement and the accompanying prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the shares of common stock to which it relates, nor do this prospectus supplement and the accompanying prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

Unless otherwise indicated, information contained in or incorporated by reference into this prospectus concerning our industry and the markets in which we operate, including market opportunity, market position and competitive landscape, is based on information from our management’s estimates, as well as from industry publications, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry, and assumptions based on such information and knowledge, which we believe to be reasonable. In addition, while we believe that information contained in the industry publications, surveys and studies has been obtained from reliable sources, the accuracy and completeness of such information is not guaranteed, and we have not independently verified any of the data contained in these third-party sources.

This prospectus supplement and the accompanying prospectus, and any documents incorporated by reference herein or therein, include statements that are based on various assumptions and estimates that are subject to numerous known and unknown risks and uncertainties. Some of these risks and uncertainties are described under the heading “Risk Factors” beginning on page S-8 of this prospectus supplement and in the section titled “Risk Factors” in our most recent Annual Report on Form 10-K, which are incorporated by

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reference into the prospectus. These and other important factors could cause our future results to be materially different from the results expected as a result of, or implied by, these assumptions and estimates. You should read the information contained in this prospectus supplement and the accompanying prospectus, and the documents incorporated by reference herein and therein, completely and with the understanding that future results may be materially different and worse from what we expect. See the information included under the heading “Special Note Regarding Forward-Looking Statements.”

We note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreement, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

Unless otherwise indicated or the context otherwise requires, the terms “Company,” “Madrigal Pharmaceuticals,” “we,” “us” and “our” refer to Madrigal Pharmaceuticals, Inc., a Delaware corporation, and its predecessors and consolidated subsidiaries.

SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION

This prospectus supplement and the documents we incorporate by reference herein and therein include forward-looking statements within the meaning of the federal securities laws, which statements are subject to substantial risks and uncertainties. These forward-looking statements are intended to qualify for the safe harbor from liability established by the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical fact are forward-looking statements. We have attempted to identify forward-looking statements by using words such as “may,” “believe,” “will,” “could,” “project,” “anticipate,” “expect,” “estimate,” “should,” “continue,” “potential,” “plan,” “forecasts,” “goal,” “seek,” “intend,” other forms of these words or similar words or expressions or the negative thereof.

In particular, this prospectus supplement, and the documents we incorporate by reference in this prospectus supplement, contain forward-looking statements relating to, among other things:

- Anticipated or estimated future results, including the risks and uncertainties associated with our future operating performance and financial position;
- Our possible or assumed future results of operations and expenses, business strategies and plans, capital needs and financing plans, market trends, competitive position, industry environment and potential growth opportunities;
- Our clinical trials, research and development activities, and the timing and results associated with the future development of our lead product candidate, MGL-3196 (resmetirom);
- Our primary and secondary study endpoints for resmetirom, the potential for achieving such endpoints and projections regarding potential future NASH resolution, fibrosis treatment, cardiovascular effects and lipid treatment with resmetirom;
- Optimal dosing levels for resmetirom and projections regarding potential NASH or NAFLD patient benefits with resmetirom;
- Risks associated with meeting the objectives of our clinical studies, including, but not limited to, our ability to achieve enrollment objectives concerning patient number (including an adequate safety database) and/or timing for our studies, any delays or failures in enrollment or the occurrence of adverse safety events;
- Market demand for and acceptance of our products;
- Research, development and commercialization of new products;
- Obtaining and maintaining regulatory approvals, including, but not limited to, potential regulatory delays or rejections;
- Risks related to our ability to accomplish our business development objectives and realize the anticipated benefit of any such transactions; and
- Assumptions underlying any of the foregoing.

We have based our forward-looking statements on our expectations and projections about trends affecting our business and industry and other future events. Although we do not make forward-looking statements unless we believe we have a reasonable basis for doing so, we cannot guarantee their accuracy. Forward-looking statements are subject to substantial risks and uncertainties that could cause our future business, financial condition, results of operations or performance, to differ materially from our historical results or those expressed or implied in any forward-looking statement. Some of the risks and uncertainties that may cause actual results to differ from those expressed or implied in the forward-looking statements include or relate to: the timing and outcomes of clinical studies involving resmetirom; enrollment uncertainties; the risks of achieving potential benefits in a study that includes substantially more patients than our prior studies; outcomes or trends from competitive studies; the uncertainties inherent in clinical testing; and the risks affecting our development objectives, business, financial condition, prospects and resources, as set forth in detail under “Risk Factors” as disclosed in in this prospectus supplement and any related prospectus, and in Part I, Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 27, 2019.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere in this prospectus supplement and the accompanying prospectus and in the documents we incorporate by reference. This summary does not contain all of the information that you should consider before deciding to invest in our common stock. You should read this entire prospectus supplement and the accompanying prospectus carefully, including the “Risk Factors” section contained in this prospectus supplement and our consolidated financial statements and the related notes and the other documents incorporated by reference herein.

Overview

Our Focus. We are a clinical-stage biopharmaceutical company focused on the development and commercialization of innovative therapeutic candidates for the treatment of cardiovascular, metabolic, and liver diseases. Our lead product candidate, MGL-3196 (resmetirom), is a proprietary, liver-directed, selective thyroid hormone receptor- β , or THR- β , agonist being developed as a once-daily oral pill that can potentially be used to treat a number of disease states with high unmet medical need, including non-alcoholic steatohepatitis, or NASH.

Our Patient Market Opportunity. NASH is a serious inflammatory form of nonalcoholic fatty liver disease, or NAFLD. NAFLD has become the most common liver disease in the United States and other developed countries and is characterized by an accumulation of fat in the liver with no other apparent causes. NASH can progress to cirrhosis or liver failure, require liver transplantation and can also result in liver cancer. Progression of NASH to end stage liver disease will soon surpass all other causes of liver failure requiring liver transplantation. Importantly, beyond these critical conditions, NASH and NAFLD patients additionally suffer heightened cardiovascular risk and, in fact, die more frequently from cardiovascular events than from liver disease. NASH and NAFLD have grown as a consequence of rising worldwide obesity-related disorders. In the United States alone, NAFLD is estimated to affect approximately 27% to 34% of the population, or an estimated 86 million to 108 million people, and approximately 10% to 20% of this population is projected to progress from NAFLD to NASH. Current estimates place NASH prevalence at approximately 9 million to 15 million people in the United States, or three percent to five percent of the population, with similar prevalence in Europe and Asia.

Our Completed Studies. For NASH, we enrolled 125 patients in a Phase 2 clinical trial with resmetirom. We achieved the 12-week primary endpoint for this Phase 2 clinical trial and reported the results in December 2017, and we reported positive topline 36-week results at the conclusion of the Phase 2 clinical trial in May 2018. We have completed treatment in a 36-week, open-label extension study in 31 participating NASH patients from our Phase 2 clinical trial, which includes 14 patients who received placebo in the main study. We also completed a 116 patient Phase 2 clinical trial and announced results in February 2018 for the use of resmetirom in patients with heterozygous familial hypercholesterolemia, or HeFH. In addition to the NASH and HeFH Phase 2 clinical trials, resmetirom has also been studied in eight completed Phase 1 trials in a total of 219 subjects. Resmetirom appeared to be safe and was well-tolerated in these trials, which included a single ascending dose trial, a multiple ascending dose trial, two drug interaction trials with statins, a multiple dose mass balance study, a single dose relative bioavailability study of tablet formulation versus capsule formulation, a multiple dose drug interaction study, and a multiple dose drug interaction with food effect study.

Our Ongoing and Planned Studies. On March 28, 2019, the Company announced that it had initiated MAESTRO-NASH, a Phase 3 trial in NASH with its once daily, oral thyroid hormone receptor beta selective agonist, resmetirom. This double-blind, placebo-controlled study will be conducted at more than 150 sites in the United States and the rest of the world. Patients with liver biopsy confirmed NASH with stage 2 or 3 fibrosis will be randomized 1:1:1 to receive a single oral daily dose of placebo, resmetirom 80 mg or resmetirom 100 mg. A second liver biopsy at week 52 in the first 900 patients will be the basis of filing for subpart H-accelerated approval; the primary endpoint will be the percent of patients treated with either dose of resmetirom as compared with placebo who achieve NASH resolution on the week 52 liver biopsy, defined as the absence of hepatocyte

ballooning (score=0), and minimal lobular inflammation (score 0-1), associated with at least a 2 point reduction in NAS, and no worsening of fibrosis stage. Two key secondary endpoints are reduction in LDL-cholesterol at week 24 and a 1-point or more improvement in fibrosis stage on the week 52 biopsy with no worsening of NASH. Patients will continue in the study for a total of approximately 54 months, and will be evaluated for a composite clinical outcome including cirrhosis on liver biopsy, or a liver related event such as hepatic decompensation. The total anticipated enrollment is approximately 2,000 patients, and will include up to 15% high risk F1 fibrosis stage NASH patients whose efficacy responses will be evaluated as exploratory endpoints.

Recent Developments

On December 10, 2019, we disclosed that we opened for enrollment MAESTRO-NAFLD-1, a 52-week double blind randomized Phase 3 primary safety study in 700 patients with biopsy-confirmed or presumed NASH recruited from sites in the U.S. Except for serial liver biopsies, the study protocol is similar to MAESTRO-NASH with resmetirom doses of 80 mg or 100 mg or placebo and includes key secondary lipid, MRI-PDFP and NASH biomarker endpoints. In addition, MAESTRO-NAFLD-1 includes an open label arm in which up to 100 patients will be dosed with 100 mg resmetirom.

In March of 2019 we initiated a Phase 3 trial in NASH, described in detail above under “Overview; Our Ongoing and Planned Studies.” In the second quarter, the Phase 3 NASH trial triggered a \$2 million milestone payment under our Research, Development and Commercialization Agreement with Hoffmann-La Roche.

In October 2019, FDA granted Fast Track designation to resmetirom for NASH.

Our Strategy

Our goal is to become a leading biopharmaceutical company developing and commercializing innovative liver-directed, β -selective thyroid hormone receptor agonists for the treatment of cardiometabolic and liver disease. To achieve our goal, we plan to:

- **Complete clinical development and seek regulatory approval of resmetirom in NASH.** We have reported data for the primary endpoint and multiple secondary endpoints from our Phase 2 study in NASH in each of December 2017 and May 2018. NASH is a disease driven by the growing epidemic of obesity, with a significant unmet need for approved therapies that are effective and well tolerated. We believe resmetirom is an excellent candidate for the chronic treatment of NASH because of its pleiotropic actions on the liver, including, importantly decreasing lipotoxicity, thereby potentially resolving NASH and reducing liver fibrosis, and its safety profile based on the results to date.
- **Establish commercial capabilities to market resmetirom as a leading treatment for NASH.** If approved, we may choose either to establish a sales and marketing organization with technical expertise and supporting distribution capabilities to commercialize resmetirom, or to collaborate with one or more third parties to accomplish these tasks. Patients with NASH are primarily managed by a concentrated group of liver specialists in the United States and Europe. We believe this will enable us to launch resmetirom in NASH in a cost-effective, targeted manner.
- **Grow our pipeline through additional indications for resmetirom including orphan indications.** We believe that resmetirom has the potential to be an effective treatment for other disease indications such as dyslipidemias. We plan to pursue orphan drug designation where possible.

Market Opportunity in NASH

NASH is a serious inflammatory form of nonalcoholic fatty liver disease, or NAFLD. NAFLD has become the most common liver disease in the United States and other developed countries and is characterized by an

accumulation of fat in the liver with no other apparent causes. The rising worldwide prevalence of obesity-related disorders has contributed to a rapid increase in the global prevalence of NASH and NAFLD. In the United States, NAFLD is estimated to affect approximately 27% to 34% of the population, or an estimated 86 million to 108 million people, and approximately 10% to 20% of those will progress from NAFLD to NASH. Current estimates place NASH prevalence at approximately 9 million to 15 million people in the United States, or 3% to 5% of the population, with similar prevalence in Europe and Asia. The prevalence of NASH is also increasing in developing regions due to the adoption of a more sedentary lifestyle and a diet consisting of processed foods with high fat and fructose content.

The Centers for Disease Control and Prevention projects the prevalence of obesity to increase from 34% of the United States population to 42% of the United States population by 2030. Driven by this epidemic of obesity, NASH is projected to become the leading cause of liver transplants by 2020. Given the extremely limited availability of organ donors and high transplant costs, NASH patients who require transplantation will place a significant economic burden on the healthcare system. As such, there is a significant unmet medical need for well-tolerated oral treatments for NASH. Because there are currently no therapeutic products approved for the treatment of NASH, the market size is difficult to estimate. However, based on our analysis of multiple market assessments, we estimate that the addressable NASH population is several million patients worldwide, and that NASH could become a multi-billion dollar market able to support multiple approved drug products.

General Information

We were incorporated in Delaware in September 2011. Our principal executive offices are located at 200 Barr Harbor Drive, Suite 200, West Conshohocken, Pennsylvania 19428. Our telephone number is (267) 824-2827. Our Internet website address is www.madrigalpharma.com. The contents of our website are not incorporated into, and do not form a part of, this prospectus supplement or the registration statement of which it forms a part.

The Offering

The following summary contains basic information about our common stock and the offering and is not intended to be complete. It does not contain all of the information that may be important to you. For a more complete understanding of our common stock, you should read the section entitled “Description of Capital Stock” in the accompanying prospectus.

Selling stockholders	Entities affiliated with Bay City Capital LLC
Common stock offered by our selling stockholders	1,200,000 shares.
Common stock to be outstanding after this offering⁽¹⁾	15,429,154 shares.
Option to purchase additional shares	The underwriter has been granted an option to purchase additional shares of our common stock from the selling stockholders up to an aggregate amount of 15% of the base deal shares, or 180,000 shares. This option is exercisable, in whole or in part, for a period of 30 days following the date of this prospectus supplement.
Use of Proceeds	We will not receive any proceeds from the sale of shares of common stock by the selling stockholders, but we will pay certain expenses incident to this offering, excluding the underwriting discount and commissions and out-of-pocket expenses of the selling stockholders (including the fees, disbursements and expenses of the selling stockholders’ counsel.)
Nasdaq Global Market Symbol	MDGL
Risk Factors	Your investment in our common stock involves substantial risks. You should read carefully the “Risk Factors” included and incorporated by reference in this prospectus supplement and the accompanying prospectus, including the risk factors incorporated by reference from our filings with the SEC.

- (1) The common stock outstanding after the offering is based on 15,429,154 shares of our common stock outstanding as of September 30, 2019 and excludes the following:
- 1,969,797 shares of common stock issuable upon conversion of our Series A Convertible Preferred Stock outstanding as of September 30, 2019;
 - 1,461,237 shares of our common stock issuable upon the exercise of options outstanding as of September 30, 2019, having a weighted average exercise price of \$65.15 per share; and
 - an aggregate of 1,352,095 shares of our common stock reserved for future issuance as of September 30, 2019 under our 2015 Stock Plan.

Except as otherwise noted, all information in this prospectus supplement assumes no exercise by the underwriter of its option to purchase additional shares of our common stock.

RISK FACTORS

Before making an investment decision, you should carefully consider the risks described below and discussed in the section titled “Risk Factors” in our most recent Annual Report on Form 10-K, as well as the risks, uncertainties and additional information set forth in our SEC reports and in other documents incorporated by reference in this prospectus supplement and the accompanying prospectus. We expect to update these Risk Factors from time to time in the periodic and current reports that we file with the SEC after the date of this prospectus supplement. These updated Risk Factors will be incorporated by reference in this prospectus supplement.

Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our common stock could decline due to any of these risks, and you may lose all or part of your investment. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business, financial condition results of operations and prospects. Certain statements below are forward-looking statements. See the information included under the heading “Special Note Regarding Forward-Looking Statements.”

Risks Relating to Ownership of Our Common Stock

The price of our common stock has been, and may continue to be, volatile.

Historically, the market price of our common stock has fluctuated over a wide range, and it is likely that the price of our common stock will continue to be volatile in the future. The closing price of our common stock has ranged from \$84.28 to \$143.84 per share during the period from January 1, 2019 to December 10, 2019. The market price of our common stock could be impacted due to a variety of factors, including, in addition to global and industry-wide events:

- the losses we may incur;
- developments in patent or other proprietary rights owned or licensed by us, our collaborative partners or our competitors;
- public concern as to the safety and efficacy of products developed by us or others; and
- litigation.

In addition, due to one or more of the foregoing factors in one or more future quarters, our results of operations may fall below the expectations of securities analysts and investors. In that event, the market price of our common stock could materially decline.

A small number of our stockholders beneficially own a substantial amount of our common stock and have substantial control over us; therefore, your ability to influence corporate matters may be limited.

Our officers, directors, the selling stockholders and their respective affiliates collectively beneficially own or control approximately 48.16% of our outstanding common stock as of September 30, 2019 and acting together, may have the ability to affect matters submitted to our stockholders for approval. After giving effect to this offering, approximately 40.79% of our outstanding common stock will be beneficially owned by such stockholders or 39.69% if the underwriter exercises its option to purchase additional shares in full. This concentration of ownership may have the effect of delaying, deferring or preventing a strategic transaction, even if such a transaction would benefit other stockholders.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of our company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our charter and bylaws may delay or prevent a merger, acquisition or other change of control that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions include a classified board of directors. In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits, with some exceptions, stockholders owning in excess of 15% of our outstanding voting stock from merging or combining with us. Although we believe these provisions together provide for an opportunity to receive higher bids by requiring potential acquirers to negotiate with our board of directors, they would apply even if the offer may be considered beneficial by some stockholders.

Future sales and issuances of our common stock or rights to purchase common stock could result in additional dilution of the percentage ownership of our stockholders and could cause our share price to fall.

We expect that significant additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market by us, by our existing stockholders, or by the holders of our Series A Convertible Preferred Stock upon conversion, or the perception that these sales might occur, could significantly reduce the market price of our common stock and impair our ability to raise adequate capital through the sale of additional equity securities. The selling stockholders will continue to hold 4,177,854 shares of our common stock after giving effect to this offering, assuming no exercise of the underwriter's option to purchase additional shares, and sales of such shares after expiration of the lock-up period described below, either directly or following any future distribution to the selling stockholders partners, could significantly reduce the market price of our common stock and impair our ability to raise adequate capital.

We do not anticipate paying cash dividends on our common stock, and accordingly, stockholders must rely on stock appreciation for any return on their investment.

We have never declared or paid any cash dividend on our common stock and do not anticipate paying cash dividends on our common stock in the future. As a result, the only return to stockholders will be appreciation in the price of our common stock, which may never occur. Investors seeking cash dividends should not invest in our common stock.

Risks Related to Stockholders' Sales of Shares

Sales of a significant number of shares of our common stock in the public markets or significant short sales of our common stock, or the perception that such sales could occur, could depress the market price of our common stock and impair our ability to raise capital.

As of September 30, 2019, there were 1,969,797 shares of Series A Convertible Preferred stock outstanding, all of which are currently convertible upon notice to us into 1,969,797 shares of common stock at the option of the holder. In addition, as of September 30, 2019, there were an additional 1,461,237 shares of our common stock issuable upon the exercise of outstanding stock options. The selling stockholders will hold 4,177,854 shares of our common stock after giving effect to this offering, assuming no exercise of the underwriter's option to purchase additional shares, and sales of such shares after expiration of the lock-up period described below, if

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effected directly or following any future distribution to the selling stockholders' partners, could significantly reduce the market price of our common stock and impair our ability to raise adequate capital, in addition to sales of a substantial number of shares of our common stock or other equity-related securities in the public markets, which could depress the market price of our common stock. If there are significant sales or short sales of our stock, the price decline that could result from this activity may cause the share price to decline further, which, in turn, may cause long holders of the common stock to sell their shares, thereby contributing to sales of common stock in the market. Such sales also may impair our ability to raise capital through the sale of additional shares in the future at a time and price that our management deems acceptable, if at all.

Risks Related to This Offering

Sales of additional shares of our common stock, including by us or our directors, officers and significant stockholders following expiration or early release of the 90-day lock-up, could cause the price of our common stock to decline.

Sales of substantial amounts of our common stock in the public market, or the availability of such shares for sale, by us or others, including the issuance of common stock upon exercise of outstanding options or upon the conversion of our Series A Convertible Preferred Stock, could adversely affect the price of our common stock. As of September 30, 2019, we had 15,429,154 outstanding shares of common stock. In connection with this offering, we, our directors and officers and certain of our significant stockholders have entered into lock-up agreements with the underwriter under which we, our directors and officers and significant stockholders have agreed, subject to specific exceptions described in the section titled "Underwriting", not to sell, directly or indirectly, any shares of common stock without the permission of Goldman Sachs & Co. LLC for a period of 90 days following the date of this prospectus supplement. Upon expiration or earlier release of the lock-up, we, our directors or officers or significant stockholders may sell shares into the market, which could adversely affect the market price of shares of our common stock. Further, entities affiliated with the selling shareholders will continue to hold shares of our common stock, which can be sold after expiration of the lock-up period, either directly or following any future distribution to the selling stockholders' partners. Sales of a substantial number of such shares upon expiration of the lock-up agreements, the perception that such sales may occur, or early release of these agreements, could cause our market price to fall or make it more difficult for you to sell your common stock at a time and price that you deem appropriate.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of the shares of our common stock by the selling stockholders (including any shares sold by the selling stockholders pursuant the underwriter's option to purchase additional shares). We have agreed to pay certain expenses incident to this offering, excluding the underwriting discounts and commissions and expenses of the selling stockholders (including the fees, disbursements and expenses of the selling stockholders' counsel.)

DIVIDEND POLICY

We do not currently anticipate declaring or paying cash dividends on our capital stock in the foreseeable future. We currently intend to retain all of our future earnings, if any, to finance the operation and expansion of our business. Any future determination relating to our dividend policy will be made at the discretion of our board of directors and will depend on a number of factors, including future earnings, capital requirements, future prospects, contractual restrictions and covenants and other factors that our board of directors may deem relevant.

SELLING STOCKHOLDERS

This prospectus supplement relates to the offering by the selling stockholders of 1,200,000 shares of our common stock. The shares of common stock being offered by the selling stockholders were acquired by the selling stockholders at the time the Company completed its business combination with Synta Pharmaceuticals Corp. in July 2016 (the “merger”). The following table sets forth, based on information provided to us by the selling stockholders or known to us, the name of the selling stockholders and the number of shares of our common stock beneficially owned by the selling stockholders before this offering. The number of shares owned are those beneficially owned, as determined under the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under these rules, beneficial ownership includes any shares of common stock as to which a person has sole or shared voting power or investment power and any shares of common stock which the person has the right to acquire within 60 days through the exercise of any option, warrant or right, through conversion of any security or pursuant to the automatic termination of a power of attorney or revocation of a trust, discretionary account or similar arrangement.

Dr. Fred B. Craves, our lead independent director, is an affiliate of the funds associated with the Selling Shareholders.

The percent of shares beneficially owned by our selling stockholders prior to the offering is based on 15,429,154 shares of our common stock outstanding on December 1, 2019.

Name of Selling Stockholder	Shares Beneficially Owned Prior to Offering		Number of Shares to be Sold	Shares Beneficially Owned After Offering	
	Shares	Percentage		Shares	Percentage
Entities Affiliated with Bay City Capital LLC(1)	5,377,854	34.86%	1,200,000(2)	4,177,854	27.08%

- (1) Consists of 5,264,382 shares of common stock held by Bay City Capital Fund IV, L.P., or Fund IV, and 113,472 shares of common stock held by Bay City Capital Fund IV Co-Investment Fund, L.P., or Co-Invest Fund. Bay City Capital Management IV LLC, or BCC IV, is the general partner of Fund IV and Co-Invest Fund and has sole voting and investment power over the shares held by Fund IV and Co-Invest Fund. Bay City Capital LLC, or BCC, is the manager of BCC IV, and thus has sole voting and investment power over the shares held by Fund IV and Co-Invest Fund. Dr. Craves is a managing director of BCC and thus may be deemed to share voting and investment power over the shares beneficially owned by these entities. The address for the entities affiliated with BCC is 750 Battery Street, Suite 400, San Francisco, California 94111.
- (2) Assumes no exercise of the underwriter’s option to purchase additional shares.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax consequences to non-U.S. holders (as defined below) of the purchase, ownership and disposition of the shares of common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or foreign tax laws are not discussed. This discussion is based on the Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, or IRS, in effect as of the date of this Prospectus Supplement. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a non-U.S. holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to non-U.S. holders that hold our common stock as a “capital asset” within the meaning of Section 1221 of the Code (property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a non-U.S. holder’s particular circumstances, including the impact of the alternative minimum tax or the unearned income Medicare contribution tax. In addition, it does not address consequences relevant to holders subject to particular rules, including, without limitation:

- U.S. expatriates and certain former citizens or long-term residents of the United States;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- brokers, dealers or traders in securities or currencies;
- “controlled foreign corporations,” “passive foreign investment companies,” and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons that own, or have owned, actually or constructively, more than 5% of our common stock;
- persons for whom our common stock constitutes “qualified small business stock” within the meaning of Section 1202 of the Code;
- persons subject to special tax accounting rules as a result of any item of gross income with respect to our common stock being taken into account in an “applicable financial statement” (as defined in the Code);
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation; and
- tax-qualified retirement plans.

If a partnership (or other entity treated as a partnership for U.S. federal income tax purposes) holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATION PURPOSES ONLY AND IS NOT INTENDED AS LEGAL OR TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a Non-U.S. Holder

For purposes of this discussion, a “non-U.S. holder” is any beneficial owner of our common stock that is not a “U.S. person,” a partnership or an entity disregarded as separate from its owner, each for United States federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust (1) the administration of which is subject to the primary supervision of a U.S. court and the control of one or more United States persons (within the meaning of Section 7701(a)(30) of the Code), or (2) that has made a valid election under applicable Treasury Regulations to continue to be treated as a United States person.

Distributions

As described in the section entitled “Dividend Policy,” we do not anticipate paying dividends to holders of our common stock in the foreseeable future. However, if we do make distributions on our common stock, such distributions of cash or property on our common stock will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a non-U.S. holder’s adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below in the section relating to the sale or disposition of our common stock. Because we may not know the extent to which a distribution is a dividend for U.S. federal income tax purposes at the time it is made, for purposes of the withholding rules discussed below we or the applicable withholding agent may treat the entire distribution as a dividend.

Subject to the discussion below on backup withholding and FATCA, dividends paid to a non-U.S. holder of our common stock that are not effectively connected with the non-U.S. holder’s conduct of a trade or business within the United States will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty).

Non-U.S. holders will be entitled to a reduction in or an exemption from withholding on dividends as a result of either (a) an applicable income tax treaty or (b) the non-U.S. holder holding our common stock in connection with the conduct of a trade or business within the United States and dividends being effectively connected with that trade or business. To claim such a reduction in or exemption from withholding, the non-U.S. holder must provide the applicable withholding agent with a properly executed (a) IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) claiming an exemption from or reduction of the withholding tax under the benefit of an income tax treaty between the United States and the country in which the non-U.S. holder resides or is established, or (b) IRS Form W-8ECI stating that the dividends are not subject to withholding tax because they are effectively connected with the conduct by the non-U.S. holder of a trade or business within the

United States, as may be applicable. These certifications must be provided to the applicable withholding agent prior to the payment of dividends and must be updated periodically. Non-U.S. holders that do not timely provide the applicable withholding agent with the required certification, but that qualify for a reduced rate under an applicable income tax treaty, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

If dividends paid to a non-U.S. holder are effectively connected with the non-U.S. holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the non-U.S. holder maintains a permanent establishment in the United States to which such dividends are attributable), then, although exempt from U.S. federal withholding tax (provided the non-U.S. holder provides appropriate certification, as described above), the non-U.S. holder will be subject to U.S. federal income tax on such dividends on a net income basis at the regular graduated U.S. federal income tax rates. In addition, a non-U.S. holder that is a corporation may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on its effectively connected earnings and profits for the taxable year that are attributable to such dividends, as adjusted for certain items. Non-U.S. holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

Sale or Other Disposition of Common Stock

Subject to the discussions below on backup withholding and FATCA, a non-U.S. holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the non-U.S. holder maintains a permanent establishment in the United States to which such gain is attributable);
- the non-U.S. holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes U.S. real property interests, or USRPIs, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes.

Gain described in the first bullet point above will generally be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates. A non-U.S. holder that is a foreign corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

A non-U.S. holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on any gain derived from the disposition, which may be offset by certain U.S. source capital losses of the non-U.S. holder (even though the individual is not considered a resident of the United States) provided the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we are not currently and do not anticipate becoming a USRPHC. Because the determination of whether we are a USRPHC depends on the fair market value of our USRPIs relative to the fair market value of our other business assets and our non-U.S. real property interests, however, there can be no assurance we are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a non-U.S. holder of our common stock will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, and such non-U.S. holder owned, actually and constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the non-U.S. holder's holding period. If we are a USRPHC and either our common stock is not regularly traded on an established securities market or a

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non-U.S. holder holds more than 5% of our outstanding common stock, directly or indirectly, during the applicable testing period, such non-U.S. holder's gain on the disposition of shares of our common stock generally will be taxed in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax generally will not apply. If we are a USRPHC and our common stock is not regularly traded on an established securities market, a non-U.S. holder's proceeds received on the disposition of our common stock will also generally be subject to withholding at a rate of 15%. Prospective investors are encouraged to consult their tax advisors regarding the possible consequences to them if we are, or were to become, a USRPHC.

Non-U.S. holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Subject to the discussion below on FATCA, a non-U.S. holder will not be subject to backup withholding with respect to distributions on our common stock we make to the non-U.S. holder, provided the applicable withholding agent does not have actual knowledge or reason to know such holder is a United States person and the holder certifies its non-U.S. status, such as by providing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or other applicable certification. However, information returns generally will be filed with the IRS in connection with any distributions (including deemed distributions) made on our common stock to the non-U.S. holder, regardless of whether any tax was actually withheld. Copies of these information returns may also be made available under the provisions of a specific treaty or agreement to the tax authorities of the country in which the non-U.S. holder resides or is established.

Information reporting and backup withholding may apply to the proceeds of a sale or other taxable disposition of our common stock within the United States, and information reporting may (although backup withholding generally will not) apply to the proceeds of a sale or other taxable disposition of our common stock outside the United States conducted through certain U.S.-related financial intermediaries, in each case, unless the beneficial owner certifies under penalty of perjury that it is a non-U.S. holder on IRS Form W-8BEN or W-8BEN-E, or other applicable form (and the payor does not have actual knowledge or reason to know that the beneficial owner is a U.S. person) or such owner otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a non-U.S. holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

FATCA

Withholding taxes may be imposed under the Foreign Account Tax Compliance Act, or FATCA, on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends (including deemed dividends) paid on our common stock and, subject to the discussion of certain proposed Treasury Regulations below, or gross proceeds from the sale or other disposition of our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States

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persons” or “United States-owned foreign entities” (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends (including deemed dividends) paid on our common stock. The U.S. Treasury recently released proposed Treasury Regulations which, if finalized in their present form, would eliminate the federal withholding tax under FATCA applicable to the gross proceeds of a sale or other disposition of our common stock. In its preamble to such proposed Treasury Regulations, the U.S. Treasury stated that taxpayers may generally rely on the proposed regulations until final regulations are issued. Because we may not know the extent to which a distribution is a dividend for U.S. federal income tax purposes at the time it is made, for purposes of these withholding rules we or the applicable withholding agent may treat the entire distribution as a dividend. Prospective investors should consult their tax advisors regarding the potential application of FATCA on their investment in our common stock.

UNDERWRITING

The company, the selling stockholders and Goldman Sachs & Co. LLC (the “underwriter”) have entered into an underwriting agreement with respect to the shares being offered. Subject to certain conditions, the underwriter has agreed to purchase the number of shares indicated in the following table.

<u>Underwriter</u>	<u>Number of Shares</u>
Goldman Sachs & Co. LLC	1,200,000
Total	1,200,000

The underwriter is committed to take and pay for all of the shares being offered, if any are taken, other than the shares covered by the option described below unless and until this option is exercised.

The underwriter has an option to buy up to 180,000 additional shares from the selling stockholders to cover sales by the underwriter of a greater number of shares than the total number set forth in the table above. The underwriter may exercise that option for 30 days.

The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriter by the selling stockholders. Such amounts are shown assuming both no exercise and full exercise of the underwriter’s option to purchase 180,000 additional shares from the Company.

Paid by the Selling Stockholders

	<u>No Exercise</u>	<u>Full Exercise</u>
Per Share	\$ 2.38	\$ 2.38
Total	\$ 2,856,000	\$ 3,284,400

Shares sold by the underwriter to the public will initially be offered at the public offering price set forth on the cover of this prospectus supplement. After the initial offering of the shares, the underwriter may change the offering price and the other selling terms. The offering of the shares by the underwriter is subject to receipt and acceptance and subject to the underwriter’s right to reject any order in whole or in part.

The company, its officers, directors, certain existing stockholders and the selling stockholders have agreed with the underwriter, subject to certain exceptions, not to dispose of or hedge any of their common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of this prospectus supplement continuing through the date 90 days after the date of this prospectus supplement, except with the prior written consent of the underwriter. This agreement does not apply to any existing employee benefit plans.

Our common stock is listed on The Nasdaq Global Market under the symbol “MDGL”.

In connection with the offering, the underwriter may purchase and sell shares of common stock in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriter of a greater number of shares than they are required to purchase in the offering, and a short position represents the amount of such sales that have not been covered by subsequent purchases. A “covered short position” is a short position that is not greater than the amount of additional shares for which the underwriter’s option described above may be exercised. The underwriter may cover any covered short position by either exercising its option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to cover the covered short position, the

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underwriter will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which it may purchase additional shares pursuant to the option described above. “Naked” short sales are any short sales that create a short position greater than the amount of additional shares for which the option described above may be exercised. The underwriter must cover any such naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of common stock made by the underwriter in the open market prior to the completion of the offering.

Purchases to cover a short position and stabilizing transactions, as well as other purchases by the underwriter for its own account, may have the effect of preventing or retarding a decline in the market price of the company’s stock, and may stabilize, maintain or otherwise affect the market price of the common stock. As a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. The underwriter is not required to engage in these activities and may end any of these activities at any time. These transactions may be effected on the Nasdaq Global Market, in the over-the-counter market or otherwise.

The company and the selling stockholders estimate that their share of the total expenses of the offering, excluding underwriting discounts and commissions, will be approximately \$350,000.

The company and the selling stockholders have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

The underwriter and its affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. The underwriter and its affiliates have provided, and may in the future provide, a variety of these services to the issuer and to persons and entities with relationships with the issuer, for which it received or will receive customary fees and expenses.

In the ordinary course of its various business activities, the underwriter and its affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for its own account and for the accounts of its customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of the issuer (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with the issuer. The underwriter and its affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area (each a “Member State”), no shares of our common stock have been offered or will be offered pursuant to this offering to the public in that Member State prior to the publication of a prospectus in relation to shares of our common stock which has been approved by the competent authority in that Member State or, where appropriate, approved in another Member State and notified to the competent authority in that Member State, all in accordance with the Prospectus Regulation, except that offers of shares of our common stock may be made to the public in that Member State at any time under the following exemptions under the Prospectus Regulation:

- To any legal entity which is a qualified investor as defined in the Prospectus Regulation;

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- To fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or
- In any other circumstances falling within Article 1(4) of the Prospectus Regulation; provided that no such offer of shares of our common stock shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to any shares of our common stock in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of our common stock to be offered so as to enable an investor to decide to purchase or subscribe for any shares of our common stock, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129. This European Economic Area selling restriction is in addition to any other selling restrictions set out below.

United Kingdom

The underwriter has represented and agreed that:

- it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (“FSMA”) received by it in connection with the issue or sale of the shares of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and
- it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom.

Canada

The securities may be sold in Canada only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions, and Ongoing Registrant Obligations. Any resale of the securities must be made in accordance with an exemption form, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this offering memorandum (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriter is not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Hong Kong

The shares may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies (Winding Up and

Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong) (“Companies (Winding Up and Miscellaneous Provisions) Ordinance”) or which do not constitute an invitation to the public within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (“Securities and Futures Ordinance”), or (ii) to “professional investors” as defined in the Securities and Futures Ordinance and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a “prospectus” as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance, and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” in Hong Kong as defined in the Securities and Futures Ordinance and any rules made thereunder.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of our common stock may not be circulated or distributed, nor may shares of our common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined under Section 4A of the Securities and Futures Act, Chapter 289 of Singapore (the “SFA”)) under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to conditions set forth in the SFA.

Where the shares of our common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor, the securities (as defined in Section 239(1) of the SFA) of that corporation shall not be transferable for 6 months after that corporation has acquired the shares under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer in that corporation’s securities pursuant to Section 275(1A) of the SFA, (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore (“Regulation 32”).

Where the shares of our common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is a trust (where the trustee is not an accredited investor (as defined in Section 4A of the SFA)) whose sole purpose is to hold investments and each beneficiary of the trust is an accredited investor, the beneficiaries’ rights and interest (howsoever described) in that trust shall not be transferable for 6 months after that trust has acquired the shares under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer that is made on terms that such rights or interest are acquired at a consideration of not less than S\$200,000 (or its equivalent in a foreign currency) for each transaction (whether such amount is to be paid for in cash or by exchange of securities or other assets), (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32.

Solely for the purposes of our obligations pursuant to Section 309B of the SFA, we have determined, and hereby notify all relevant persons (as defined in the CMP Regulations 2018), that the shares of our common stock

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are “prescribed capital markets products” (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948, as amended), or the FIEA. The securities may not be offered or sold, directly or indirectly, in Japan or to or for the benefit of any resident of Japan (including any person resident in Japan or any corporation or other entity organized under the laws of Japan) or to others for reoffering or resale, directly or indirectly, in Japan or to or for the benefit of any resident of Japan, except pursuant to an exemption from the registration requirements of the FIEA and otherwise in compliance with any relevant laws and regulations of Japan.

LEGAL MATTERS

Certain legal matters will be passed upon for us by Hogan Lovells US LLP, Philadelphia, Pennsylvania. Certain legal matters will be passed upon for the underwriter by Ropes & Gray LLP, Boston, Massachusetts.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2018 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have on file with the SEC an effective "shelf" registration statement on Form S-3 relating to the securities that may be offered and sold hereunder. The registration statement, including exhibits thereto, contains additional relevant information about us and these securities that, as permitted by the rules and regulations of the SEC, we have not included in this prospectus supplement or the accompanying prospectus. You should read the registration statement for further information about us and these securities.

Any statement made in this prospectus supplement or the accompanying prospectus concerning the contents of any contract, agreement or other document is only a summary of the actual contract, agreement or other document. If we have filed any contract, agreement or other document as an exhibit to the registration statement, then you should read the exhibit for a more complete understanding of the document or matter involved.

We maintain a website at www.madrigalpharma.com. We make our SEC filings available on our website, free of charge, as soon as reasonably practicable after such materials are filed with, or furnished to, the SEC. Information presented or accessed through our website is not incorporated into, or made a part of, this prospectus supplement or the accompanying prospectus.

Our SEC filings are available from the SEC's Internet site at <http://www.sec.gov>, which contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

In addition, our common stock is listed on The Nasdaq Global Market and similar information concerning us can be inspected and copied at the offices of The Nasdaq Stock Market, One Liberty Plaza, 165 Broadway, New York, NY 10006.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3 filed by us with the SEC. This prospectus supplement and the accompanying prospectus do not contain all of the information set forth in the registration statement, certain parts of which are omitted in accordance with the rules and regulations of the SEC. For further information about us and the securities offered by this prospectus supplement and the accompanying prospectus, we refer you to the registration statement and its exhibits and schedules which may be obtained as described herein.

The SEC allows us to "incorporate by reference" information into this prospectus supplement and the accompanying prospectus. This means that we can disclose important information about us and our financial

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condition to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus. This prospectus supplement and the accompanying prospectus incorporate by reference the documents listed below that we have previously filed with the SEC:

- our [Annual Report on Form 10-K for the fiscal year ended December 31, 2018](#), as filed with the SEC on February 27, 2019, as amended by the [10-K/A filed with the SEC on April 30, 2019](#) (including the portions of our Definitive Proxy Statement on Schedule 14A filed on May 15, 2019 that are incorporated by reference therein);
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2019, June 30, 2019 and September 30, 2019, as filed with the SEC on [May 8, 2019](#), [August 7, 2019](#) and [November 6, 2019](#), respectively;
- our Current Reports on Form 8-K, as filed with the SEC on [July 2, 2019](#), [July 11, 2019](#) and [December 10, 2019](#); and
- the description of our common stock contained in our Registration Statement on [Form 8-A, filed with the SEC on January 26, 2007](#), including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference into this prospectus supplement and the accompanying prospectus all documents filed by us with the SEC pursuant to Sections 12(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of any offering of securities made by this prospectus supplement and the accompanying prospectus. Nothing in this prospectus supplement or the accompanying prospectus shall be deemed to incorporate information furnished but not filed with the SEC (including without limitation, information furnished under Item 2.02 or Item 7.01 of Form 8-K, and any exhibits relating to such information).

Any statement contained in this prospectus supplement or the accompanying prospectus or in a document incorporated or deemed to be incorporated by reference in this prospectus supplement or the accompanying prospectus shall be deemed to be modified or superseded for purposes of this prospectus supplement or the accompanying prospectus 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 modifies or supersedes the statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement and the accompanying prospectus.

You may request a copy of the filings incorporated herein by reference, including exhibits to such documents that are specifically incorporated by reference, at no cost, by writing or calling us at the following address or telephone number:

Marc R. Schneebaum
Chief Financial Officer
Madrigal Pharmaceuticals, Inc.
Four Tower Bridge
200 Barr Harbor Drive, Suite 200
West Conshohocken, Pennsylvania 19428
(267) 824-2827

Statements contained in this prospectus supplement and the accompanying prospectus as to the contents of any contract or other documents are not necessarily complete, and in each instance investors are referred to the copy of the contract or other document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference and the exhibits and schedules thereto.

PROSPECTUS

Madrigal Pharmaceuticals, Inc.



Common Stock

Preferred Stock

Warrants

Units

Debt Securities

By this prospectus, we or any selling stockholder may offer and sell from time to time, in one or more offerings, common stock, preferred stock, warrants, debt securities or any combination thereof as described in this prospectus. The warrants may be convertible into or exercisable or exchangeable for common stock or preferred stock, the preferred stock may be convertible into or exchangeable for common stock and the debt securities may be convertible into or exchangeable for common stock or preferred stock. You should carefully read this prospectus, any prospectus supplement and any free writing prospectus, as well as any documents incorporated in any of the foregoing by reference, before you invest in our securities. This prospectus may not be used to sell our securities unless accompanied by a prospectus supplement. The prospectus supplement or any related free writing prospectus may also add to, update, supplement or clarify information contained in this prospectus.

Our common stock is traded on the NASDAQ Global Market under the symbol "MDGL."

We or any selling stockholder may offer and sell our securities to or through one or more agents, underwriters, dealers or other third parties or directly to one or more purchasers on a continuous or delayed basis. If agents, underwriters or dealers are used to sell our securities, we or any selling stockholder will name them and describe their compensation in a prospectus supplement. The price to the public of our securities and the net proceeds we expect to receive from the sale of such securities will also be set forth in a prospectus supplement. We will not receive any proceeds from the sale of securities by selling stockholders.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. YOU SHOULD REVIEW CAREFULLY THE RISKS AND UNCERTAINTIES REFERENCED UNDER THE HEADING "[RISK FACTORS](#)" ON PAGE 5 OF THIS PROSPECTUS AS WELL AS THOSE CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT AND ANY RELATED FREE WRITING PROSPECTUS, AND IN THE OTHER DOCUMENTS THAT ARE INCORPORATED BY REFERENCE INTO THIS PROSPECTUS OR THE APPLICABLE PROSPECTUS SUPPLEMENT.

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

The date of this prospectus is June 5, 2018.

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We are responsible for the information contained and incorporated by reference in this prospectus, in any accompanying prospectus supplement, and in any related free writing prospectus we prepare or authorize. We have not authorized anyone to give you any other information, and we take no responsibility for any other information that others may give you. If you are in a jurisdiction where offers to sell, or solicitations of offers to purchase, the securities offered by this documentation are unlawful, or if you are a person to whom it is unlawful to direct these types of activities, then the offer presented in this document does not extend to you. The information contained in this document speaks only as of the date of this document, unless the information specifically indicates that another date applies. Our business, financial condition, results of operations and prospectus may have changed since those dates.

ABOUT THIS PROSPECTUS

This prospectus is part of an automatic shelf registration statement that we filed with the Securities and Exchange Commission, or the SEC, as a “well-known seasoned issuer” as defined in Rule 405 under the Securities Act of 1933, as amended, or the Securities Act. Under this shelf registration, we and/or selling stockholders may offer shares of our common stock and preferred stock, various series of warrants to purchase common stock or preferred stock, debt securities or any combination thereof, from time to time in one or more offerings. This prospectus only provides you with a general description of the securities we and/or selling stockholders may offer. Each time we and/or selling stockholders offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the specific terms of the offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. This prospectus may not be used to sell our securities unless accompanied by a prospectus supplement. Each such prospectus supplement and any free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents incorporated by reference into this prospectus. We urge you to carefully read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the headings “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference” before you invest in our securities.

Neither we nor any selling stockholder have authorized anyone to provide you with information in addition to or different from that contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus. We take no responsibility for, and can provide no assurances as to the reliability of, any information not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we or a selling stockholder may authorize to be provided to you. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

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

Unless otherwise mentioned or unless the context requires otherwise, throughout this prospectus, any applicable prospectus supplement and any related free writing prospectus, the words “Madrigal,” “we,” “us,” “our,” the “company” or similar references refer to Madrigal Pharmaceuticals, Inc. and its subsidiaries; and the term “securities” refers collectively to our common stock, preferred stock, warrants to purchase common stock or preferred stock, debt securities, or any combination of the foregoing securities.

This prospectus and the information incorporated herein by reference contains references to trademarks, service marks and trade names owned by us or other companies. Solely for convenience, trademarks, service marks and trade names referred to in this prospectus and the information incorporated herein, including logos, artwork, and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks, service marks and trade names. We do not intend our use or display of other companies’ trade names, service marks or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus, any applicable prospectus supplement or any related free writing prospectus are the property of their respective owners.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus is part of a registration statement that we have filed with the SEC. Certain information in the registration statement has been omitted from this prospectus in accordance with the rules of the SEC. We are subject to the information requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and, in accordance therewith, file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room. These documents also may be accessed through the SEC's Electronic Data Gathering, Analysis and Retrieval system, or EDGAR, via electronic means, including the SEC's home page on the Internet (www.sec.gov).

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, 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. Because we are incorporating by reference future filings with the SEC, this prospectus supplement is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents not deemed to be filed) between the date of this prospectus and the termination of this offering:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2017, as filed with the SEC on March 13, 2018;
- our Definitive Proxy Statement on [Schedule 14A](#), as filed with the SEC on April 27, 2018;
- our Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended March 31, 2018, as filed with the SEC on May 8, 2018;
- our Current Report on [Form 8-K](#), as filed with the SEC on May 31, 2018; and
- the description of our common stock contained in our Registration Statement on [Form 8-A](#), filed with the SEC on January 26, 2007, including any amendment or report filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by contacting us, either orally or in writing, at:

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

You may also access these documents, free of charge on the SEC's website at www.sec.gov or on our website at www.madrigalpharma.com. The information contained in, or that can be accessed through, our website is not part of this prospectus.

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This prospectus is part of a registration statement we filed with the SEC. We have incorporated exhibits into this registration statement. You should read the exhibits carefully for provisions that may be important to you.

Neither we nor any selling stockholder have authorized anyone to provide you with information other than what is incorporated by reference or provided in this prospectus or any prospectus supplement. Neither we nor any selling stockholder are making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus or in the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus or those documents.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the information incorporated herein by reference herein and therein contain statements that are not historical facts and are considered forward-looking within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. These forward-looking statements contain projections of our future results of operations or of our financial position or state other forward-looking information. In some cases, you can identify these statements by forward-looking words such as “may,” “will,” “could,” “should,” “would,” “expect,” “intend,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue,” or the negative of such words or other similar words or phrases. We believe that it is important to communicate our future expectations to our investors. However, there may be events in the future that we are not able to accurately predict or control and that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements.

Investors are cautioned not to unduly rely on forward-looking statements because they relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- anticipated or estimated future results, including the risks and uncertainties associated with our future operating performance and financial position;
- market demand for and acceptance of our products;
- research, development and commercialization of new products;
- obtaining and maintaining regulatory approvals, including, but not limited to, potential regulatory delays or rejections;
- risks associated with meeting the objectives of clinical studies, including, but not limited to, delays or failures in enrollment, and the occurrence of adverse safety events;
- risks related to our ability to accomplish our business development objectives and realize the anticipated benefit of any such transactions; and
- assumptions underlying any of the foregoing.

Given these uncertainties, you should not place undue reliance on these forward-looking statements. These forward-looking statements speak only as of the date on which the statements were made and are not guarantees of future performance. Except as may be required by applicable law, we do not undertake or intend to update any forward-looking statements after the date of this prospectus or the respective dates of documents incorporated by reference herein that include forward-looking statements.

RISK FACTORS

You should carefully consider the risks described in the documents incorporated by reference in this prospectus and any prospectus supplement, as well as other information we include or incorporate by reference into this prospectus and any applicable prospectus supplement, before making an investment decision. Our business, financial condition or results of operations could be materially adversely affected by the materialization of any of these risks. The trading price of our securities could decline due to the materialization of any of these risks, and you may lose all or part of your investment. This prospectus and the documents incorporated herein by reference also contain forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks described in the documents incorporated herein by reference, including our most recent annual report on Form 10-K which is on file with the SEC and is incorporated herein by reference, and other documents we file with the SEC that are deemed incorporated by reference into this prospectus.

ABOUT THE COMPANY

We are a clinical-stage biopharmaceutical company focused on the development and commercialization of innovative therapeutic candidates for the treatment of cardiovascular, metabolic, and liver diseases. Our lead product candidate, MGL-3196, is a proprietary, liver-directed, selective thyroid hormone receptor- β , or THR- β , agonist being developed as a once-daily oral pill that can potentially be used to treat a number of disease states with high unmet medical need, including non-alcoholic steatohepatitis, or NASH. For NASH, we enrolled 125 patients in a Phase 2 clinical trial. We achieved the 12-week primary endpoint for this trial and reported the results in December 2017, and we reported topline 36-week results at the conclusion of the study in May 2018. We are also developing MGL-3196 for dyslipidemia, including genetic dyslipidemias such as heterozygous familial hypercholesterolemia, or HeFH. We enrolled 116 patients and completed a Phase 2 clinical trial in HeFH patients, and we reported the results in February 2018. In addition to the NASH and HeFH Phase 2 clinical trials, MGL-3196 has also been studied in six completed Phase 1 trials in a total of 183 subjects. MGL-3196 was safe and well-tolerated in these trials, which included a single ascending dose trial, a multiple ascending dose trial, two drug interaction trials with statins, a multiple dose mass balance study, and a single dose relative bioavailability study of tablet formulations versus capsule formulation.

We were incorporated in Delaware in September 2011. Our principal executive offices are located at 200 Barr Harbor Drive, Suite 400, West Conshohocken, Pennsylvania 19428 and our telephone number at that address is (484) 380-9263. We maintain an Internet website at the following address: www.madrigalpharma.com. The information on, or that can be accessed through, our website does not constitute part of this prospectus, and you should not rely on any such information in making the decision whether to purchase our common stock. Our common stock trades on the NASDAQ Global Market under the symbol "MDGL."

DESCRIPTION OF SECURITIES

We and/or any selling stockholder may offer shares of our common stock and preferred stock, various series of warrants to purchase common stock or preferred stock, debt securities, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt, or any combination thereof from time to time in one or more offerings under this prospectus at prices and on terms to be determined at the time of any offering. This prospectus provides you with a general description of the securities we and/or any selling stockholder may offer. Each time we and/or any selling stockholder offer a type or series of securities under this prospectus, we will provide a prospectus supplement and/or free writing prospectus that will describe the specific amounts, prices and other important terms of the securities.

Common Stock. We and/or any selling stockholder may issue and/or sell, as applicable, shares of our common stock from time to time. Holders of shares of our common stock are entitled to one vote for each share held of record on all matters to be voted on by stockholders and do not have cumulative voting rights. Subject to the preferences that may be applicable to any then outstanding preferred stock, the holders of our outstanding shares of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Our board of directors will determine the rights, preferences and privileges of the shares of each wholly unissued series, and any qualifications, limitations or restrictions thereon, including dividend rights, conversion rights, preemptive rights, terms of redemption or repurchase, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series. Convertible preferred stock will be convertible into our common stock or exchangeable for other securities. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates.

If we sell any series of preferred stock under this prospectus, we will fix the rights, preferences and privileges of the preferred stock of such series, as well as any qualifications, limitations or restrictions thereon, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. We urge you to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Warrants. We may issue warrants for the purchase of common stock and/or preferred stock in one or more series. We may issue warrants independently or together with common stock and/or preferred stock, and the warrants may be attached to or separate from these securities. We urge you to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the particular series of warrants being offered, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants. Forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

We will evidence each series of warrants by warrant certificates that we will issue. Warrants may be issued under an applicable warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if applicable, in the prospectus supplement relating to the particular series of warrants being offered.

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Units. We may issue, in one or more series, units consisting of common stock, preferred stock, and/or warrants for the purchase of common stock and/or preferred stock in any combination. We urge you to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreement that contains the terms of the units. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of unit agreement and any supplemental agreements that describe the terms of the series of units we are offering before the issuance of the related series of units.

We will evidence each series of units by unit certificates that we will issue. Units may be issued under a unit agreement that we enter into with a unit agent. We will indicate the name and address of the unit agent, if applicable, in the prospectus supplement relating to the particular series of units being offered.

Debt Securities. We may issue debt securities, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. In this prospectus, we have summarized certain general features of the debt securities. We urge you, however, to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the particular series of debt securities being offered, as well as the complete indenture that contains the terms of the debt securities. We will file as exhibits to the registration statement of which this prospectus is a part, the form of indenture and any supplemental agreements that describe the terms of the series of debt securities we are offering before the issuance of the related series of debt securities.

We may evidence each series of debt securities we will issue by an indenture that we enter into with a trustee. We will indicate the name and address of the trustee, if applicable, in the prospectus supplement relating to the particular series of debt securities being offered.

RATIO OF EARNINGS TO FIXED CHARGES

Our ratio of earnings to fixed charges for recently completed fiscal years and any required interim periods will be specified in a prospectus supplement or in a document that we file with the SEC and incorporate by reference in the future.

USE OF PROCEEDS

Except as described in any prospectus supplement or in any related free writing prospectus that we may authorize to be provided to you, the net proceeds received by us from our sale of the securities described in this prospectus will be added to our general funds and will be used for our general corporate purposes. From time to time, we may engage in additional public or private financings of a character and amount which we may deem appropriate. Unless otherwise set forth in a prospectus supplement, we will not receive any proceeds from the sale of securities by any selling stockholder.

SELLING STOCKHOLDERS

Selling stockholders are persons or entities that, directly or indirectly, have acquired or will from time to time acquire from us, our securities. Such selling stockholders may be parties to registration rights agreements with us, or we otherwise may have agreed or will agree to register their securities for resale. The initial purchasers of our securities, as well as their transferees, pledges, donees or successors, all of whom we refer to as "selling stockholders," may from time to time offer and sell our securities pursuant to this prospectus and any applicable prospectus supplement.

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The applicable prospectus supplement will set forth the name of each of the selling stockholders and the number of securities beneficially owned by such selling stockholder that are covered by such prospectus supplement. The applicable prospectus supplement will also disclose whether any of the selling stockholders has held any position or office with, has been employed by or otherwise has had a material relationship with us during the three years prior to the date of the applicable prospectus supplement.

PLAN OF DISTRIBUTION

We and/or any selling stockholder may sell our securities from time to time in one or more transactions. We and/or any selling stockholder may sell our securities to or through agents, underwriters, dealers, remarketing firms or other third parties or directly to one or more purchasers or through a combination of any of these methods. In some cases, we and/or any selling stockholder or dealers acting with us and/or any selling stockholder or on behalf of us and/or any selling stockholder may also purchase our securities and reoffer them to the public. We and/or any selling stockholder may also offer and sell, or agree to deliver, our securities pursuant to, or in connection with, any option agreement or other contractual arrangement.

Agents whom we designate may solicit offers to purchase our securities.

- We and/or any selling stockholder will name any agent involved in offering or selling our securities, and disclose any commissions that we will pay to the agent, in the applicable prospectus supplement.
- Unless we and/or any selling stockholder indicate otherwise in the applicable prospectus supplement, agents will act on a best efforts basis for the period of their appointment.
- Agents may be deemed to be underwriters under the Securities Act, of any of our securities that they offer or sell.

We and/or any selling stockholder may use an underwriter or underwriters in the offer or sale of our securities.

- If we and/or any selling stockholder use an underwriter or underwriters, we will execute an underwriting agreement with the underwriter or underwriters at the time that we reach an agreement for the sale of our securities.
- We and/or any selling stockholder will include the names of the specific managing underwriter or underwriters, as well as the names of any other underwriters, and the terms of the transactions, including the compensation the underwriters and dealers will receive, in the applicable prospectus supplement.
- The underwriters will use the applicable prospectus supplement, together with the prospectus, to sell our securities.

We may use a dealer to sell our securities.

- If we and/or any selling stockholder use a dealer, we will sell our securities to the dealer, as principal.
- The dealer will then sell our securities to the public at varying prices that the dealer will determine at the time it sells our securities.
- We and/or any selling stockholder will include the name of the dealer and the terms of the transactions with the dealer in the applicable prospectus supplement.

We and/or any selling stockholder may solicit directly offers to purchase our securities, and we may directly sell our securities to institutional or other investors. We and/or any selling stockholder will describe the terms of direct sales in the applicable prospectus supplement.

We and/or any selling stockholder may engage in at the market offerings into an existing trading market in accordance with Rule 415(a)(4) of the Securities Act.

We and/or any selling stockholder will indemnify agents, underwriters and dealers against certain liabilities, including liabilities under the Securities Act. Agents, underwriters and dealers, or their affiliates, may be customers of, engage in transactions with or perform services for us or our respective affiliates, in the ordinary course of business.

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We and/or any selling stockholder may authorize agents and underwriters to solicit offers by certain institutions to purchase our securities at the public offering price under delayed delivery contracts.

- If we and/or any selling stockholder use delayed delivery contracts, we will disclose that we are using them in the prospectus supplement and will tell you when we will demand payment and when delivery of our securities will be made under the delayed delivery contracts.
- These delayed delivery contracts will be subject only to the conditions that we describe in the prospectus supplement.
- We and/or any selling stockholder will describe in the applicable prospectus supplement the commission that underwriters and agents soliciting purchases of our securities under delayed delivery contracts will be entitled to receive.

Unless otherwise specified in connection with a particular underwritten offering of our securities, the underwriters will not be obligated to purchase offered securities unless specified conditions are satisfied, and if the underwriters do purchase any offered securities, they will purchase all offered securities.

In connection with underwritten offerings of the offered securities and in accordance with applicable law and industry practice, the underwriters in certain circumstances are permitted to engage in certain transactions that stabilize the price of our securities. Such transactions consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of our securities. If the underwriters create a short position in our securities in connection with the offering (*i.e.*, if they sell more securities than are set forth on the cover page of the applicable prospectus supplement), the underwriters may reduce that short position by purchasing our securities in the open market or as otherwise provided in the applicable prospectus supplement. The underwriters may also impose a penalty bid, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if the securities sold by them are repurchased in connection with stabilization transactions. In general, purchases of a security for the purpose of stabilization or to reduce a short position could cause the price of the security to be higher than it might be in the absence of such purchases. The imposition of a penalty bid might also have an effect on the price of our securities to the extent that it were to discourage resales of our securities. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We and/or any selling stockholder may effect sales of securities in connection with forward sale, option or other types of agreements with third parties. Any distribution of securities pursuant to any forward sale agreement may be effected from time to time in one or more transactions that may take place through a stock exchange, including block trades or ordinary broker's transactions, or through broker-dealers acting either as principal or agent, or through privately-negotiated transactions, or through an underwritten public offering, or through a combination of any such methods of sale, at market prices prevailing at the time of sale, prices relating to such prevailing market prices or at negotiated or fixed prices.

The specific terms of the lock-up provisions, if any, in respect of any given offering will be described in the applicable prospectus supplement.

In compliance with the guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8.0% of the aggregate amount of the securities offered by this prospectus.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon by Baker & Hostetler, LLP, Costa Mesa, California.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2017 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

1,200,000 Shares Offered by the Selling Stockholders



Common Stock

PROSPECTUS SUPPLEMENT

December 10, 2019

Goldman Sachs & Co. LLC

We have not authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus supplement and accompanying prospectus or any free writing prospectus that we or the underwriter provide you in connection with the offering. We take no responsibility for, and cannot provide any assurance as to the reliability of, any other information that others may give you. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information contained in or incorporated by reference in this prospectus supplement and accompanying prospectus is accurate as of any date other than the date on the front of this prospectus supplement.

No action is being taken in any jurisdiction outside the United States to permit a public offering of shares of our common stock or possession or distribution of this prospectus supplement in that jurisdiction. Persons who come into possession of this prospectus supplement in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus supplement applicable to that jurisdiction.
