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

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2022

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________

Commission file number: 001-33277

MADRIGAL PHARMACEUTICALS, INC.
(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	**04-3508648** (I.R.S. Employer Identification No.)
Four Tower Bridge **200 Barr Harbor Drive, Suite 200** **West Conshohocken, Pennsylvania** (Address of principal executive offices)	**19428** (Zip Code)

Registrant's telephone number, including area code: (267) 824-2827

Former name, former address and former fiscal year, if changed since last report:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 Par Value Per Share	MDGL	The NASDAQ Stock Market LLC

Securities registered pursuant to Section 12(g) of the Exchange Act: None.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). ☒ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐

Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of November 1, 2022, the registrant had 17,103,395 shares of common stock outstanding.

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PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

MADRIGAL PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited; in thousands, except share and per share amounts)

	September 30, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 59,340	$ 36,269
Marketable securities	93,852	234,077
Prepaid expenses and other current assets	3,920	1,338
Total current assets	157,112	271,684
Property and equipment, net	701	851
Right-of-use asset	831	797
Total assets	$ 158,644	$ 273,332
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 18,562	$ 21,380
Accrued expenses	79,598	55,048
Lease liability	760	410
Total current liabilities	98,920	76,838
Long term liabilities:		
Loan payable, net of discount	48,983	—
Lease liability	71	387
Total long term liabilities	49,054	387
Total liabilities	147,974	77,225
Stockholders' equity:		
Preferred stock, par value $0.0001 per share authorized: 5,000,000 shares at September 30, 2022 and December 31, 2021; 1,969,797 shares issued and outstanding at September 30, 2022 and December 31, 2021	—	—
Common stock, par value $0.0001 per share authorized: 200,000,000 at September 30, 2022 and December 31, 2021; 17,103,395 and 17,103,395 shares issued and outstanding at September 30, 2022 and December 31, 2021, respectively	2	2
Additional paid-in-capital	887,660	863,495
Accumulated other comprehensive loss	(237)	(80)
Accumulated deficit	(876,755)	(667,310)
Total stockholders' equity	10,670	196,107
Total liabilities and stockholders' equity	$ 158,644	$ 273,332

See accompanying notes to condensed consolidated financial statements.

MADRIGAL PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited; in thousands, except share and per share amounts)

	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Revenues:				
Total revenues	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	68,271	54,873	174,699	152,275
General and administrative	12,141	8,287	33,573	25,606
Total operating expenses	80,412	63,160	208,272	177,881
Loss from operations	(80,412)	(63,160)	(208,272)	(177,881)
Interest income	717	60	1,109	311
Interest expense	(1,502)	—	(2,282)	—
Other income	—	—	—	273
Net loss	$ (81,197)	$ (63,100)	$ (209,445)	$ (177,297)
Net loss per common share:				
Basic and diluted net loss per common share	$ (4.75)	$ (3.79)	$ (12.25)	$ (10.84)
Basic and diluted weighted average number of common shares outstanding	17,103,395	16,639,776	17,103,395	16,353,428

See accompanying notes to condensed consolidated financial statements.

MADRIGAL PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(Unaudited; in thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Net Loss	$ (81,197)	$ (63,100)	$ (209,445)	$ (177,297)
Other comprehensive income (loss):				
Unrealized gain (loss) on available-for-sale securities	210	(11)	(157)	(43)
Comprehensive loss	$ (80,987)	$ (63,111)	$ (209,602)	$ (177,340)

See accompanying notes to condensed consolidated financial statements.

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MADRIGAL PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited; in thousands, except share and per share amounts)

	Preferred stock		Common stock		Additional paid-in Capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total stockholders' equity
	Shares	Amount	Shares	Amount				
Balance at December 31, 2021	1,969,797	$ —	17,103,395	$ 2	$863,495	$ (80)	$ (667,310)	$ 196,107
Compensation expense related to stock options for services	—	—	—	—	7,477	—	—	7,477
Unrealized loss on marketable securities	—	—	—	—	—	(322)	—	(322)
Net loss	—	—	—	—	—	—	(57,518)	(57,518)
Balance at March 31, 2022	1,969,797	$ —	17,103,395	$ 2	$870,972	$ (402)	$ (724,828)	$ 145,744
Compensation expense related to stock options for services	—	—	—	—	7,944	—	—	7,944
Unrealized loss on marketable securities	—	—	—	—	—	(45)	—	(45)
Hercules warrant	—	—	—	—	622	—	—	622
Net loss	—	—	—	—	—	—	(70,730)	(70,730)
Balance at June 30, 2022	1,969,797	$ —	17,103,395	$ 2	$879,538	$ (447)	$ (795,558)	$ 83,535
Compensation expense related to stock options for services	—	—	—	—	8,122	—	—	8,122
Unrealized loss on marketable securities	—	—	—	—	—	210	—	210
Net loss	—	—	—	—	—	—	(81,197)	(81,197)
Balance at September 30, 2022	1,969,797	$ —	17,103,395	$ 2	$887,660	$ (237)	$ (876,755)	$ 10,670
Balance at December 31, 2020	1,969,797	$ —	15,508,146	$ 2	$665,385	$ 47	$ (425,464)	$ 239,970
Issuance of common shares in equity offering, excluding to related parties, net of transaction costs	—	—	550,803	—	66,616	—	—	66,616
Sale of common shares to related parties and exercise of common stock options, net of transaction costs	—	—	4,250	—	478	—	—	478
Compensation expense related to stock options for services	—	—	—	—	6,096	—	—	6,096
Unrealized loss on marketable securities	—	—	—	—	—	(61)	—	(61)
Net loss	—	—	—	—	—	—	(52,546)	(52,546)
Balance at March 31, 2021	1,969,797	$ —	16,063,199	$ 2	$738,575	$ (14)	$ (478,010)	$ 260,553
Issuance of common shares in equity offering, excluding to related parties, net of transaction costs	—	—	536,323	—	63,541	—	—	63,541
Compensation expense related to stock options for services	—	—	—	—	8,179	—	—	8,179
Unrealized gain on marketable securities	—	—	—	—	—	29	—	29
Net loss	—	—	—	—	—	—	(61,651)	(61,651)
Balance at June 30, 2021	1,969,797	$ —	16,599,522	$ 2	$810,295	$ 15	$ (539,661)	$ 270,651
Issuance of common shares in equity offering, excluding to related parties, net of transaction costs	—	—	260,164	—	21,092	—	—	21,092

Sale of common shares to related parties and exercise of common stock options, net of transaction costs	—	—	525	—	8	—	—	8
Compensation expense related to stock options for services	—	—	—	—	6,241	—	—	6,241
Unrealized loss on marketable securities	—	—	—	—	—	(11)	—	(11)
Net loss	—	—	—	—	—	—	(63,100)	(63,100)
Balance at September 30, 2021	1,969,797	$ —	16,860,211	$ 2	$837,636	$ 4	$ (602,761)	$ 234,881

See accompanying notes to condensed consolidated financial statements.

MADRIGAL PHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited; in thousands)

	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Cash flows from operating activities:		
Net loss	$ (209,445)	$ (177,297)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	23,543	20,517
Depreciation and amortization expense	338	299
Amortization of debt issuance costs and discount	491	—
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(2,582)	(2,799)
Accounts payable	(2,818)	9,401
Accrued expense	24,550	13,279
Accrued interest, net of interest received on maturity of investments	(419)	734
Net cash used in operating activities	(166,342)	(135,866)
Cash flows from investing activities:		
Purchases of marketable securities	(130,693)	(339,371)
Sales and maturities of marketable securities	271,180	318,769
Purchases of property and equipment, net of disposals	(188)	(96)
Net cash provided by (used in) investing activities	140,299	(20,698)
Cash flows from financing activities:		
Proceeds from issuances of stock, excluding related parties, net of transaction costs	—	151,249
Proceeds from the exercise of common stock options	—	485
Proceeds from issuance of loan payable	50,000	—
Payment of debt issuance costs	(886)	—
Net cash provided by financing activities	49,114	151,734
Net increase (decrease) in cash and cash equivalents	23,071	(4,830)
Cash and cash equivalents at beginning of period	36,269	54,004
Cash and cash equivalents at end of period	$ 59,340	$ 49,174
Supplemental disclosure of cash flow information:		
Obtaining a right-of-use asset in exchange for a lease liability	$ 583	$ 376

See accompanying notes to condensed consolidated financial statements.

MADRIGAL PHARMACEUTICALS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Organization, Business, and Basis of Presentation

Organization and Business

Madrigal Pharmaceuticals, Inc. (the "Company" or "Madrigal") is a clinical-stage biopharmaceutical company pursuing novel therapeutics for nonalcoholic steatohepatitis (NASH), a liver disease with high unmet medical need. Madrigal's lead candidate, resmetirom, is a once daily, oral, thyroid hormone receptor (THR)-ß selective agonist designed to target key underlying causes of NASH in the liver. Resmetirom is currently being evaluated in two Phase 3 clinical studies (MAESTRO-NASH and MAESTRO-NAFLD-1) designed to demonstrate multiple benefits in patients with NASH. The Company announced results from the Phase 3 MAESTRO-NAFLD-1 safety study of resmetirom in 2022.

Basis of Presentation

Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States ("GAAP") have been condensed or omitted. Accordingly, the unaudited condensed consolidated financial statements do not include all information and footnotes required by GAAP for complete annual financial statements. However, we believe that the disclosures included in these financial statements are adequate to make the information presented not misleading. The unaudited condensed consolidated financial statements, in the opinion of management, reflect all adjustments, which include normal recurring adjustments, necessary for a fair statement of such interim results. The interim results are not necessarily indicative of the results that we will have for the full year ending December 31, 2022 or any subsequent period. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and the notes to those statements for the year ended December 31, 2021.

2. Summary of Significant Accounting Policies

Principle of Consolidation

The consolidated financial statements include the financial statements of the Company and its wholly owned subsidiaries. All significant intercompany balances have been eliminated in consolidation.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect certain reported amounts of assets and liabilities, and the reported amounts of revenues and expenses during the reporting periods. The Company bases its estimates on historical experience and various other assumptions that management believes to be reasonable under the circumstances. Changes in estimates are recorded in the period in which they become known. Actual results could differ from those estimates.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of three months or less at the date of purchase to be cash equivalents. The Company maintains its cash in bank accounts, the balance of which, at times, exceeds Federal Deposit Insurance Corporation insured limits.

The primary objective of the Company's investment activities is to preserve its capital for the purpose of funding operations and the Company does not enter into investments for trading or speculative purposes. The Company's cash is deposited in highly rated financial institutions in the United States. The Company invests in money market funds and high-grade, commercial paper and corporate bonds, which management believes are subject to minimal credit and market risk.

Marketable Securities

Marketable securities consist of investments in high-grade corporate obligations and government and government agency obligations that are classified as available-for-sale. Since these securities are available to fund current operations, they are classified as current assets on the consolidated balance sheets.

The Company adjusts the cost of available-for-sale debt securities for amortization of premiums and accretion of discounts to maturity. The Company includes such amortization and accretion as a component of interest income. Realized gains and losses and declines in value, if any, that the Company judges to be other-than-temporary on available-for-sale securities are reported as a component of interest income. To determine whether an other-than-temporary impairment exists, the Company considers whether it intends to sell the debt security and, if the Company does not intend to sell the debt security, it considers available evidence to assess whether it is more likely than not that it will be required to sell the security before the recovery of its amortized cost basis. During the nine months ended September 30, 2022 and 2021, the Company determined it did not have any securities that were other-than-temporarily impaired.

Marketable securities are stated at fair value, including accrued interest, with their unrealized gains and losses included as a component of accumulated other comprehensive income or loss, which is a separate component of stockholders' equity. The fair value of these securities is based on quoted prices and observable inputs on a recurring basis. Realized gains and losses are determined on the specific identification method. During the nine months ended September 30, 2022 and 2021, the Company did not have any realized gains or losses on marketable securities.

Fair Value of Financial Instruments

The carrying amounts of the Company's financial instruments, which include cash equivalents and marketable securities, approximate their fair values. The fair value of the Company's financial instruments reflects the amounts that would be received upon sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy has the following three levels:

Level 1—quoted prices in active markets for identical assets and liabilities.

Level 2—observable inputs other than Level 1 inputs. Examples of Level 2 inputs include quoted prices in active markets for similar assets or liabilities and quoted prices for identical assets or liabilities in markets that are not active.

Level 3—unobservable inputs that reflect the Company's own assumptions about the assumptions market participants would use in pricing the asset or liability.

Financial assets and liabilities are classified in their entirety within the fair value hierarchy based on the lowest level of input that is significant to the fair value measurement. The Company measures the fair value of its marketable securities by taking into consideration valuations obtained from third- party pricing sources. The pricing services utilize industry standard valuation models, including both income and market based approaches, for which all significant inputs are observable, either directly or indirectly, to estimate fair value. These inputs include reported trades of and broker-dealer quotes on the same or similar securities, issuer credit spreads, benchmark securities and other observable inputs.

As of September 30, 2022, the Company's financial assets valued based on Level 1 inputs consisted of cash and cash equivalents in a money market fund, its financial assets valued based on Level 2 inputs consisted of high-grade corporate and government agency bonds and commercial paper, and it had no financial assets valued based on Level 3 inputs. During the nine months ended September 30, 2022 and 2021, the Company did not have any transfers of financial assets between Levels 1 and 2. As of September 30, 2022 and December 31, 2021, the Company did not have any financial liabilities that were recorded at fair value on a recurring basis on the balance sheet.

Research and Development Costs

Research and development costs are expensed as incurred. Research and development costs are comprised of costs incurred in performing research and development activities, including internal costs (including stock-based compensation), costs for consultants, milestone payments under licensing agreements, and other costs associated with the Company's preclinical and clinical programs. In particular, the Company has conducted safety studies in animals, optimized and implemented the manufacturing of our drug, and conducted Phase 1-3 clinical trials, all of which are considered research and development expenditures. Management uses significant judgment in estimating the amount of research and development costs recognized in each reporting period. Management analyzes and estimates the progress of its preclinical studies and clinical trials, completion of milestone events per underlying agreements, invoices received and contracted costs when estimating the research and development costs to accrue in each reporting period. Actual results could differ from the Company's estimates.

Patents

Costs to secure and defend patents are expensed as incurred and are classified as general and administrative expense in the Company's consolidated statements of operations.

Stock-Based Compensation

The Company recognizes stock-based compensation expense based on the grant date fair value of stock options granted to employees, officers, and directors. The Company uses the Black-Scholes option pricing model to determine the grant date fair value as management believes it is the most appropriate valuation method for its option grants. The Black-Scholes model requires inputs for risk-free interest rate, dividend yield, volatility and expected lives of the options. The expected lives for options granted represent the period of time that options granted are expected to be outstanding. The Company uses the simplified method for determining the expected lives of options. Expected volatility is based upon an industry estimate or blended rate including the Company's historical trading activity. The risk-free rate for periods within the expected life of the option is based on the U.S. Treasury yield curve in effect at the time of the grant. The Company estimates the forfeiture rate based on historical data. This analysis is re-evaluated at least annually and the forfeiture rate is adjusted as necessary.

Certain of the employee stock options granted by the Company are structured to qualify as incentive stock options ("ISOs"). Under current tax regulations, the Company does not receive a tax deduction for the issuance, exercise or disposition of ISOs if the employee meets certain holding requirements. If the employee does not meet the holding requirements, a disqualifying disposition occurs, at which time the Company may receive a tax deduction. The Company does not record tax benefits related to ISOs unless and until a disqualifying disposition is reported. In the event of a disqualifying disposition, the entire tax benefit is recorded as a reduction of income tax expense. The Company has not recognized any income tax benefit for its share-based compensation arrangements due to the fact that the Company does not believe it is more likely than not it will realize the related deferred tax assets.

Income Taxes

The Company uses the asset and liability method to account for income taxes. Deferred tax assets and liabilities are determined based on the expected future tax consequences of temporary differences between the Company's financial statement carrying amounts and the tax basis of assets and liabilities using enacted tax rates expected to be in effect in the years in which the differences are expected to reverse. The Company currently maintains a 100% valuation allowance on its deferred tax assets.

Comprehensive Loss

Comprehensive loss is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. Changes in unrealized gains and losses on marketable securities represent the only difference between the Company's net loss and comprehensive loss.

Basic and Diluted Loss Per Common Share

Basic net loss per share is computed using the weighted average number of common shares outstanding during the period, excluding any restricted stock that has been issued but is not yet vested. Diluted net loss per common share is computed using the weighted average number of common shares outstanding and the weighted average dilutive potential common shares outstanding using the treasury stock method. However, for the nine months ended September 30, 2022 and 2021, diluted net loss per share is the same as basic net loss per share because the inclusion of weighted average shares of unvested restricted common stock, common stock issuable upon the exercise of stock options, and common stock issuable upon the conversion of preferred stock would be anti-dilutive.

The following table summarizes outstanding securities not included in the computation of diluted net loss per common share, as their inclusion would be anti-dilutive:

	Nine Months Ended September 30,	
	2022	2021
Common stock options	3,026,163	2,254,629
Preferred stock	1,969,797	1,969,797
Warrants	14,899	—

Recent Accounting Pronouncements

None

3. Liquidity and Uncertainties

The Company is subject to risks common to development stage companies in the biopharmaceutical industry including, but not limited to, uncertainty of product development and commercialization, dependence on key personnel, uncertainty of market acceptance of products and product reimbursement, product liability, uncertain protection of proprietary technology, potential inability to raise additional financing necessary for development and commercialization, and compliance with the U.S. Food and Drug Administration (FDA) and other government regulations.

The Company has incurred losses since inception, including approximately $209.4 million for the nine months ended September 30, 2022, resulting in an accumulated deficit of approximately $876.8 million as of September 30, 2022. Management expects to incur losses for the foreseeable future. To date, the Company has funded its operations primarily through proceeds from sales of the Company's capital stock. In addition, the Company entered into a Loan and Security Agreement (the "Loan Facility") with Hercules Capital, Inc. and the several banks and other financial institutions or entities party thereto in May 2022 which provides for an aggregate of up to $250.0 million in term loans, which will be available in four tranches, subject to the Company's achievement of certain milestones and conditions. The first $50.0 million tranche was drawn at closing of the Loan Facility (see Note 6 – Long Term Debt). The inability of the Company to obtain sufficient funds on acceptable terms when needed could have a material adverse effect on the Company's business, results of operations and financial condition. The Company believes it has the ability to delay certain clinical and pre-commercialization activities and related expenses if necessary due to liquidity concerns until a date when those concerns are relieved. If the Company is unable to obtain funding, the Company: could be forced to delay, reduce or eliminate some or all of its clinical studies or pre-commercialization efforts, which could adversely affect its business prospects; could adversely affect liquidity; and could affect the Company's ability to maintain compliance with covenants under the Loan Facility.

In accordance with ASC 205-40, Going Concern ("ASC 205-40"), the Company has evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern within one year after the date the financial statements are issued. Based upon current operating plans and the Company's cash, cash equivalents and marketable securities totaling $153.2 million as of September 30, 2022, the Company expects, that such resources will not be sufficient to fund our operating expenses and capital requirements through the one year anniversary of the filing of this Quarterly Report on Form 10-Q. These conditions raise substantial doubt about the Company's ability to continue as a going concern under ASC 205-40. Under ASC 205-40, management may not consider the potential for future capital raises through debt or equity financings, collaborations, partnerships or other strategic transactions, or management plans to reduce costs that are not considered probable within the meaning of such accounting standards. The financial statements do not include any adjustments that might result from the outcome of this uncertainty. Although the Company has been successful in raising capital in the past, there is no assurance that it will be successful in obtaining such additional financing on terms acceptable to the Company, if at all.

4. Cash, Cash Equivalents and Marketable Securities

A summary of cash, cash equivalents and available-for-sale marketable securities held by the Company as of September 30, 2022 and December 31, 2021 is as follows (in thousands):

	September 30, 2022			
	Cost	Unrealized gains	Unrealized losses	Fair value
Cash and cash equivalents:				
Cash (Level 1)	$ 18,228	$ —	$ —	$ 18,228
Money market funds (Level 1)	26,413	—	—	26,413
Corporate debt securities due within 3 months of date of purchase (Level 2)	14,699	—	—	14,699
Total cash and cash equivalents	59,340	—	—	59,340
Marketable securities:				
Corporate debt securities due within 1 year of date of purchase (Level 2)	93,493	—	(237)	93,256
U.S. government and government sponsored entities due within 1 year of date of purchase (Level 2)	596	—	—	596
Total cash, cash equivalents and marketable securities	$153,429	$ —	$ (237)	$153,192

	December 31, 2021			
	Cost	Unrealized gains	Unrealized losses	Fair value
Cash and cash equivalents:				
Cash (Level 1)	$ 18,877	$ —	$ —	$ 18,877
Money market funds (Level 1)	17,392	—	—	17,392
Total cash and cash equivalents	36,269	—	—	36,269
Marketable securities:				
Corporate debt securities due within 1 year of date of purchase (Level 2)	228,348	6	(66)	228,288
Corporate debt securities due within 1 to 2 years of date of purchase (Level 2)	5,809	—	(20)	5,789
Total cash, cash equivalents and marketable securities	$270,426	$ 6	$ (86)	$270,346

5. Accrued Liabilities

Accrued liabilities as of September 30, 2022 and December 31, 2021 consisted of the following (in thousands):

	September 30, 2022	December 31, 2021
Contract research organization costs	$ 60,548	$ 38,349
Other clinical study related costs	8,084	3,957
Compensation and benefits	5,049	6,769
Professional fees	2,855	2,455
Other	3,062	3,518
Total accrued liabilities	$ 79,598	$ 55,048

6. Long Term Debt

In May 2022 the Company and its wholly-owned subsidiary, Canticle Pharmaceuticals, Inc., entered into the $250.0 million Loan Facility with the several banks and other financial institutions or entities party thereto (each, a “Lender” and collectively referred to as the “Lenders”), and Hercules Capital, Inc. (“Hercules”), in its capacity as administrative agent and collateral agent for itself and the Lenders. Under the terms of the Loan Facility, the first $50.0 million tranche was drawn at closing. The Company may also draw up to an additional $125.0 million in two separate tranches upon achievement of certain resmetirom clinical and regulatory milestones. A fourth tranche of $75.0 million may be drawn by the Company, subject to the approval of Hercules.

The Loan Facility has a minimum interest rate of 7.45% and adjusts with changes in the prime rate. The Company will pay interest-only monthly payments of accrued interest under the Loan Facility for a period of 30 months, which period may be extended to 36, 48, and 60 months upon the successive achievement of certain clinical and regulatory milestones and if the Company maintains compliance with applicable covenants. The Loan Facility matures in May 2026 and may be extended an additional year upon the achievement of certain clinical and regulatory milestones. The Loan Facility is secured by a security interest in substantially all of the Company’s assets, other than intellectual property. It includes an end of term charge of 5.35% of the aggregate principal amount, which is accounted for in the loan discount. In connection with the first tranche drawn at closing, the Company issued Hercules a warrant to purchase 14,899 shares of Company common stock, which had a Black-Scholes value of $0.6 million.

The Loan Facility includes affirmative and restrictive financial covenants commencing on January 1, 2023, including maintenance of a minimum cash, cash equivalents and liquid funds covenant of $35.0 million, which may decrease in certain circumstances if the Company achieves certain clinical milestones and a revenue milestone, and a revenue-based covenant that could apply commencing at or after the time that financial reporting is due for the quarter ending September 30, 2024. The Loan Facility contains event of default provisions for: the Company’s failure to make required payments or maintain compliance with covenants under the Loan Facility; the Company’s breach of certain representations or default under certain obligations outside the Loan Facility; insolvency, attachment or judgment events affecting the Company; and any circumstance which has occurred or could reasonably be expected to have a material adverse effect on the Company, provided that, any failure to achieve a clinical milestone or approval milestone under the Loan Facility shall not in and of itself constitute a material adverse effect. The Loan Facility also includes customary covenants associated with a secured loan facility, including covenants concerning financial reporting obligations, and certain limitations on indebtedness, liens (including a negative pledge on intellectual property and other assets), investments, distributions (including dividends), collateral, investments, distributions, transfers, mergers or acquisitions, taxes, corporate changes, and deposit accounts.

As of September 30, 2022, the outstanding principal under the Loan Facility was $50.0 million. The interest rate as of September 30, 2022 was 10.20%. As of September 30, 2022, the Company was in compliance with all loan covenants and provisions.

Future minimum payments, including interest and principal, under the loans payable outstanding as of September 30, 2022 are as follows (in thousands):

Period Ending September 30, 2022:	Amount
2022 (remaining three months)	$ 1,267
2023	5,171
2024	10,043
Thereafter	51,378
	$ 67,859
Less amount representing interest	(15,184)
Less unamortized discount	(3,692)
Loans payable, net of discount	$ 48,983

7. Stockholders' Equity

Common Stock

Each common stockholder generally is entitled to one vote for each share of common stock held, subject to limitations as may be established for certain other classes and series of stock of the Company from time to time. Each share of common stock is entitled to receive dividends, as and when declared by the Company's board of directors.

The Company has never declared cash dividends on its common stock and does not expect to do so in the foreseeable future.

Preferred Stock

The Company's Series A Convertible Preferred Stock ("Series A Preferred Stock") has a par value of $0.0001 per share and is convertible into shares of the Common Stock at a one-to-one ratio, subject to adjustment as provided in the Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock, that the Company filed with the Secretary of State of the State of Delaware on June 21, 2017 (the "Series A Certificate"). The terms of the Series A Preferred Stock are set forth in the Series A Certificate. Each share of the Series A Preferred Stock is convertible into shares of Common Stock following notice that may be given at the holder's option. Upon any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary, after the satisfaction in full of the debts of the Company and the payment of any liquidation preference owed to the holders of shares of capital stock of the Company ranking prior to the Series A Preferred Stock upon liquidation, the holders of the Series A Preferred Stock shall participate pari passu with the holders of the Common Stock (on an as-if-converted-to-Common-Stock basis) in the net assets of the Company. Shares of the Series A Preferred Stock will generally have no voting rights, except as required by law. Shares of the Series A Preferred Stock will be entitled to receive dividends before shares of any other class or series of capital stock of the Company (other than dividends in the form of the Common Stock) equal to the dividend payable on each share of the Common Stock, on an as-converted basis.

At-The-Market Issuance Sales Agreement

In November 2020, the Company entered into an at-the-market sales agreement (the "2020 Sales Agreement"), with Cowen and Company, LLC ("Cowen"), pursuant to which the Company could, from time to time, issue and sell shares of its common stock. The 2020 Sales Agreement authorized an aggregate offering of up to $200 million in shares of our common stock, at the Company's option, through Cowen as its sales agent. Sales of common stock through Cowen could be made by any method that is deemed an "at-the-market" offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, including by means of ordinary brokers' transactions at market prices, in block transactions or as otherwise agreed by the Company and Cowen. The 2020 Sales Agreement was terminated in June 2021 when the Company filed a new shelf registration statement.

Under the 2020 Sales Agreement the Company sold 1,126,733 shares for an aggregate of approximately $137.4 million in gross proceeds, with net proceeds to the Company of approximately $134.8 million after deducting commissions and other transaction costs. Of those shares sold, 1,087,126 were sold in 2021.

In June 2021, the Company filed with the SEC and had declared effective a new shelf registration statement on Form S-3 and, in connection therewith, entered into a new at-the-market sales agreement (the "2021 Sales Agreement") with Cowen. The terms of the 2021 Sales Agreement are substantially the same as the 2020 Sales Agreement. The 2021 Sales Agreement authorizes an aggregate offering of up to $200 million in shares of our common stock, from time to time, at the Company's option, through Cowen as its sales agent. The 2021 Sales Agreement supersedes the 2020 Sales Agreement. Subject to the terms and conditions of the 2021 Sales Agreement, Cowen will use commercially reasonable efforts consistent with its normal trading and sales practices to sell the common stock based upon the Company's instructions (including any price, time or size limits or other customary parameters or conditions the Company may impose).

As of September 30, 2022, 497,043 shares had been sold under the 2021 Sales Agreement for an aggregate of approximately $40.8 million in gross proceeds, with net proceeds to the Company of approximately $39.8 million after deducting commissions and other transaction costs. All of those shares were sold in 2021. As of September 30, 2022, $159.2 million remained reserved and available for sale under the 2021 Sales Agreement and the Company's related prospectus supplement.

8. Stock-based Compensation

The Company's 2015 Stock Plan, as amended, is our primary equity incentive compensation plan through which equity based grants are awarded. The 2015 Stock Plan provides for the grant of incentive stock options, non-statutory stock options, restricted stock and other stock-based compensation awards to employees, officers, directors, and consultants of the Company. The administration of the 2015 Stock Plan is under the general supervision of the Compensation Committee of the Board of Directors. The terms of stock options awarded under the 2015 Stock Plan, in general, are determined by the Compensation Committee, provided the exercise price per share generally shall not be set at less than the fair market value of a share of the common stock on the date of grant and the term shall not be greater than ten years from the date the option is granted. As of September 30, 2022, the Company had options outstanding to purchase 3,026,163 shares of its common stock, which includes options outstanding under its prior incentive compensation plan, the 2006 Stock Plan. As of September 30, 2022, 936,704 shares were available for future issuance under the 2015 Stock Plan.

The following table summarizes stock option activity during the nine months ended September 30, 2022:

	Shares	Weighted average exercise price
Outstanding at January 1, 2022	2,301,574	$ 78.90
Options granted	809,745	82.11
Options cancelled	(85,156)	101.61
Outstanding at September 30, 2022	3,026,163	$ 79.11
Exercisable at September 30, 2022	1,746,699	$ 70.94

The total cash received by the Company as a result of stock option exercises was $0 million and $0.5 million, respectively, for the nine months ended September 30, 2022 and 2021. The total intrinsic value of options exercised was $0 million and $0.1 million, respectively, for the nine months ended September 30, 2022 and 2021. The weighted-average grant date fair values, based on the Black-Scholes option model, of options granted during the nine months ended September 30, 2022 and 2021 were $55.14 and $75.71, respectively.

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Stock-Based Compensation Expense

Stock-based compensation expense during the nine months ended September 30, 2022 and 2021 was as follows (in thousands):

	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Stock-based compensation expense by type of award:				
Stock options	$ 8,122	$ 6,241	$ 23,543	$ 20,517
Total stock-based compensation expense	$ 8,122	$ 6,241	$ 23,543	$ 20,517
Effect of stock-based compensation expense by line item:				
Research and development	$ 3,596	$ 2,622	$ 10,084	$ 8,120
General and administrative	4,526	3,619	13,459	12,397
Total stock-based compensation expense included in net loss	$ 8,122	$ 6,241	$ 23,543	$ 20,517

Unrecognized stock-based compensation expense on stock options as of September 30, 2022 was $64.2 million with a weighted average remaining period of 2.80 years.

9. Commitments and Contingencies

The Company has a Research, Development and Commercialization Agreement with Hoffmann-La Roche (“Roche”) which grants the Company a sole and exclusive license to develop, use, sell, offer for sale and import any Licensed Product as defined by the agreement.

The agreement requires future milestone payments to Roche. Remaining milestones under the agreement total $8 million and are payable upon Madrigal achieving specified objectives related to future regulatory approval in the United States and Europe of resmetirom or a product developed from resmetirom. Furthermore, a tiered single-digit royalty is payable on net sales of resmetirom or a product developed from resmetirom, subject to certain reductions. The Company has not achieved any additional product development or regulatory milestones and had no Licensed Product sales for the nine months ended September 30, 2022 and 2021.

The Company has entered into customary contractual arrangements and letters of intent in preparation for and in support of the Phase 3 clinical trials.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q includes “forward-looking statements” made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, that are based on our beliefs and assumptions and on information currently available to us, but are subject to factors beyond our control. Forward-looking statements: reflect management’s current knowledge, assumptions, judgment and expectations regarding future performance or events; include all statements that are not historical facts; and can be identified by terms such as “accelerate,” “achieve,” “allow,” “anticipates,” “appear,” “be,” “believe,” “believes,” “can,” “continue,” “could,” “demonstrates,” ”design,” “estimates,” “expects,” “expectation,” “forecasts,” “future,” “goal,” “help,” “hopeful,” “inform,” “intends,” “may,” “might,” “on track,” “planned,” “planning,” “plans,” “positions,” “potential,” “powers,” “predicts,” ”predictive,” “projects,” “seeks,” “should,” “will,” “will be,” “will achieve,” “would” or similar expressions and the negatives of those terms. In particular, forward-looking statements contained in or incorporated by reference to this Quarterly Report relate 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 (including ex-U.S. launch/partnering plans), capital needs and financing plans, including incurrence of indebtedness and compliance with debt covenants under the Loan and Security Agreement with Hercules Capital, Inc., as agent and lender, market trends, market sizing, competitive position, industry environment and potential growth opportunities, among other things;
- Our ability to delay certain research activities and related clinical expenses as necessary;
- Our historic operating costs and financial resources at September 30, 2022 indicate substantial doubt exists related to our ability to continue as a going concern under ASC 205-40 without the completion of future debt or equity financings, collaborations, partnerships or other strategic transactions; absent completion of a financing transaction to address such shortfall on acceptable terms when needed, the Company could be subjected to the adverse effects described in this document under Item 2, “Management’s Discussion and Analysis of Financial Condition and Results of Operations; Liquidity and Capital Resources;”
- Our clinical trials, including the anticipated timing of disclosure, presentations of data from, or outcomes from our trials,
- Research and development activities, and the timing and results associated with the future development of our lead product candidate, resmetirom (formerly known as MGL-3196), including projected market size, sector leadership, and patient treatment estimates for non-alcoholic steatohepatitis (“NASH”) and non-alcoholic fatty liver disease (“NAFLD”) patients;
- The timing and completion of projected future clinical milestone events, including enrollment, additional studies, top-line data and open label projections;
- Plans, objectives and timing for making a Subpart H (Accelerated Approval of New Drugs for Serious or Life-Threatening Illnesses) submission to FDA;
- Projections or objectives for obtaining accelerated or full approval for resmetirom for non-cirrhotic NASH patients and NASH patients with compensated cirrhosis;
- Our primary and key secondary study endpoints for resmetirom, and the potential for achieving such endpoints and projections, including NASH resolution, safety, fibrosis treatment, cardiovascular effects, and lipid treatment with resmetirom;
- Optimal dosing levels for resmetirom and projections regarding potential NASH or NAFLD and potential patient benefits with resmetirom, including future NASH resolution, safety, fibrosis treatment, cardiovascular effects, lipid treatment, and/or biomarker effects with resmetirom;
- Our ability to address the unmet needs of patients suffering from NASH with significant fibrosis;
- The potential efficacy and safety of resmetirom for non-cirrhotic NASH patients and cirrhotic NASH patients;
- The potential for resmetirom to become the best-in-class and/or first-to-market treatment option for patients with NASH and liver fibrosis;
- Anticipated or estimated future results of operations and expenses as we expand our resmetirom clinical development program and our commercial development program;
- Ex-U.S. launch/partnering plans;
- The ability to develop clinical evidence demonstrating the utility of non-invasive tools and techniques to screen and diagnose NASH and/or NAFLD patients;
- The predictive power of liver fat reduction with resmetirom, as measured by non-invasive tests, on NASH resolution and/or fibrosis reduction or improvement, and potential NASH or NAFLD patient risk profile benefits with resmetirom;
- The predictive power of liver fat, liver volume changes, or MAST scores for NASH and/or NAFLD patients;

- The predictive power of NASH resolution and/or liver fibrosis reduction or improvement with resmetirom using non-invasive tests, including the use of ELF, FibroScan, MRE and/or MRI-PDFF;
- The predictive power of non-invasive tests generally, including for purposes of diagnosing NASH, monitoring patient response to resmetirom, or recruiting and conducting a NASH clinical trial;
- 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 our clinical studies, including, but not limited to our ability to achieve enrollment objectives concerning patient numbers (including an adequate safety database), outcomes objectives and/or timing objectives for our studies, any delays or failures in enrollment, the occurrence of adverse safety events, and the risks of successfully conducting trials that are substantially larger, and have patients with different disease states, than our past trials;
- Risks related to the effects of resmetirom's mechanism of action and our ability to accomplish our business and business development objectives and realize the anticipated benefit of any such transactions; and
- Assumptions underlying any of the foregoing.

We caution you that the foregoing list may not include all of the forward-looking statements made in this Quarterly Report. Although management presently believes that the expectations reflected in such forward-looking statements are reasonable, it can give no assurance that such expectations will prove to be correct and you should be aware that actual results could differ materially from those contained in the forward-looking statements.

Forward-looking statements are subject to a number of risks and uncertainties including, but not limited to: our clinical and commercial development of resmetirom; enrollment and trial outlook uncertainties, generally, based on blinded, locked or limited trial data and in relation to COVID-19 related measures and individual precautionary measures that may be implemented or continued for an uncertain period of time; our potential inability to raise sufficient capital to fund our ongoing operations as currently planned, continue as a going concern and to obtain financings on terms similar to those we have arranged in the past; our ability to service our indebtedness and otherwise comply with our debt covenants; outcomes or trends from competitive studies; future topline data timing or results; the risks of achieving potential benefits in studies that includes substantially more patients, and patients with different disease states, than our prior studies; limitations associated with early stage or non-placebo controlled study data; the timing and outcomes of clinical studies of resmetirom; and the uncertainties inherent in clinical testing. Undue reliance should not be placed on forward-looking statements, which speak only as of the date they are made. Madrigal undertakes no obligation to update any forward-looking statements to reflect new information, events or circumstances after the date they are made, or to reflect the occurrence of unanticipated events. Please refer to Madrigal's submissions filed or furnished with the U.S. Securities and Exchange Commission for more detailed information regarding these risks and uncertainties and other factors that may cause actual results to differ materially from those expressed or implied. We specifically discuss these risks and uncertainties in greater detail in the section appearing in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on February 25, 2022 (the "2021 Form 10-K"), as updated by the risk factors discussed in Part II, Item 1A of our Quarterly Report on Form 10-Q for the quarter ended March 31, 2022 filed with the SEC on May 9, 2022 (the "1Q 2022 Form 10-Q"), as well as in our other filings with the SEC. You should read the 2021 Form 10-K, the 1Q 2022 Form 10-Q, this Quarterly Report, and the other documents that we file or have filed with the SEC, with the understanding that our actual future results may be materially different from the results expressed or implied by these forward-looking statements.

Moreover, we operate in an evolving environment. New risks and uncertainties emerge from time to time and it is not possible for our management to predict all risks and uncertainties, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual future results to be materially different from those expressed or implied by any forward-looking statements.

Except as required by applicable law or the rules of the NASDAQ Stock Market, or NASDAQ, we assume no obligation to update any forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future. We qualify all of our forward-looking statements by these cautionary statements.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The consolidated financial statements, included elsewhere in this Quarterly Report on Form 10-Q, and this Management's Discussion and Analysis of Financial Condition and Results of Operations should be read together with our audited financial statements and accompanying notes for year ended December 31, 2021 and the related Management's Discussion and Analysis of Financial Condition and Results of Operations, both of which are included in our Annual Report on Form 10-K. In addition to historical information, this discussion and analysis contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, that involve risks and uncertainties, such as statements of our plans, objectives, expectations and intentions. As disclosed in this report under "Cautionary Note Regarding Forward-Looking Statements," our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the "Cautionary Note Regarding Forward-Looking Statements" and "Risk Factors" sections contained in our Annual Report on Form 10-K for the year ended December 31, 2021 and our Form 10-Q for the quarter ended March 31, 2022. Our operating results are not necessarily indicative of results that may occur for the full fiscal year or any other future period.

About Madrigal Pharmaceuticals, Inc.

Our Focus. We are a clinical-stage biopharmaceutical company pursuing novel therapeutics for nonalcoholic steatohepatitis (NASH), a liver disease with high unmet medical need. Our lead product candidate, resmetirom, is a proprietary, liver-directed, selective thyroid hormone receptor-ß, or THR-ß, agonist being developed as a once-daily oral pill that can potentially be used to treat NASH and a number of disease states with high unmet medical need.

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, NAFLD is estimated to affect approximately 25% of the population, and approximately 25% of those will progress from NAFLD to NASH. Current estimates place NASH prevalence at approximately 20 million people in the United States, or five to six percent of the adult 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.

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 also completed a 36-week, open-label extension study in 31 participating NASH patients from our Phase 2 clinical trial, which included 14 patients who received placebo in the main study.

On December 18, 2019 the Company announced it had opened for enrollment MAESTRO-NAFLD-1, a 52-week, non-invasive, multi-center, double-blind, placebo-controlled Phase 3 clinical study of patients with biopsy-confirmed or presumed NASH recruited from sites in the U.S. Key endpoints are safety, including safety biomarkers. Secondary endpoints include LDL cholesterol, lipid biomarkers, MRI-PDFF, NASH and fibrosis biomarkers. Except for serial liver biopsies, the study protocol is similar to the MAESTRO-NASH study (discussed below under "—Our Ongoing and Planned Studies"), with resmetirom doses of 80 mg or 100 mg or placebo. Enrollment objectives for this study were exceeded, with approximately 1,300 patients enrolled overall. The MAESTRO-NAFLD-1 study will help support the adequacy of the safety database at the time of NDA submission for Subpart H approval for treatment of NASH in patients with F2 or F3 fibrosis. In November of 2021, we reported data from the open label non-cirrhotic arm of MAESTRO-NAFLD-1, and in January 2022 we announced that we achieved primary and secondary endpoints for the double-blind portion of MAESTRO-NAFLD-1. Further MAESTRO-NAFLD-1 data were presented at a hepatology medical congress in June of 2022. MAESTRO-NAFLD-1 has completed the double-blind arms and an open-label 100 mg arm. An additional open-label active treatment arm in patients with early (well-compensated) NASH cirrhosis is ongoing.

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 multiple completed Phase 1 trials in a total of more than 300 subjects. Resmetirom was well-tolerated in these trials, which included a single ascending dose trial, a multiple ascending dose trial, several drug interaction studies, a multiple dose mass balance study, a single dose relative bioavailability study of tablet formulation versus capsule formulation, a multiple dose drug interaction study, a multiple dose drug interaction with food effect study, and a hepatic impairment 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 is being conducted at more than 230 sites in the United States and the rest of the world. Patients with liver biopsy confirmed NASH with stage 2 or 3 fibrosis are being 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 accelerated approval under subpart H of applicable FDA regulations, which we refer to as subpart H-accelerated approval. Historically: the primary endpoint pertained to 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 (NAFLD Activity Score), and no worsening of fibrosis stage; and two key secondary endpoints pertained to reduction in LDL-cholesterol and a 1-point or more improvement in fibrosis stage on the week 52 biopsy with no worsening of NASH. In May 2022, the Company announced that it determined to move the 1-point fibrosis endpoint up the hierarchy in our MAESTRO-NASH trial to a primary endpoint along with NASH resolution, as dual primary endpoints. The dual primary endpoint design allows for a successful outcome of the study, which can be filed for subpart H approval, if either the NASH resolution or 1-point fibrosis reduction endpoint is met. 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 currently is up to 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. On June 30, 2021 we announced our achievement of the requisite enrollment of patients to support the planned Subpart H (Accelerated Approval of New Drugs for Serious or Life-Threatening Illnesses) submission to the US Food and Drug Administration (FDA).

On July 13, 2021 we announced first patient dosed in a planned 52-week open label active treatment extension study of MAESTRO-NAFLD-1, named MAESTRO-NAFLD-Open Label Extension (OLE). The OLE study allows patients who complete MAESTRO-NAFLD-1 to consent to 52 weeks of active treatment with resmetirom, making this treatment available to both patients who were assigned to placebo in MAESTRO-NAFLD-1 and patients who were on resmetirom in MAESTRO-NAFLD-1.

Key Developments

Additional Phase 3 MAESTRO-NAFLD-1 Data

In January 2022, we announced that certain primary and key secondary endpoints from the double-blind, placebo-controlled, 969-patient MAESTRO-NAFLD-1 safety study were achieved; resmetirom was well-tolerated and provided significant reductions in liver fat, LDL-c and other atherogenic lipids vs. placebo.

In May 2022 and June 2022, we announced additional data and results from the MAESTRO-NAFLD-1 safety study, as described below. Patients in the resmetirom 80 mg and 100 mg double-blind arms achieved reductions in ALT ($p=0.002$; <0.0001) relative to placebo. ALT increases ≥3 times the upper limit of normal occurred in 0.61% in the resmetirom 80 mg group, 0.31% in the 100 mg group and 1.6% of patients in the placebo group.

Treatment-emergent adverse events ≥ grade 3 in severity occurred in 7.6% of patients in the resmetirom 80 mg group, 9.0% in the 100 mg group and 9.1% in the placebo group. Withdrawals due to adverse events were 2.4% in the 80 mg group, 2.8% in the 100 mg group and 1.3% in the placebo group. GI-related adverse events (diarrhea, nausea) were increased relative to placebo at the initiation of therapy but not after the first few weeks.

FibroScan CAP (controlled attenuation parameter) scores reflective of hepatic fat were statistically significantly ($p<0.0001$) reduced in resmetirom arms as compared with placebo. FibroScan liver stiffness reductions were similar in the 100 mg open-label and double-blind arms. Responder analyses of FibroScan (vibration-controlled transient elastography (VCTE) reduction and % reduction from baseline comparing resmetirom 100 mg open-label and double-blind arms with placebo showed a significant increase in responders in resmetirom treatment arms (44% averaged across the arms) compared with placebo (25%); magnetic resonance elastography (MRE) responders as measured by kPa reduction were significantly greater in resmetirom-treated groups compared with placebo. Mean reduction in FibroScan VCTE in resmetirom double-blind patients was greater than placebo but not statistically significant.

MAESTRO-NASH Outcomes Study

In August 2022, we initiated a second NASH outcomes study, MAESTRO-NASH Outcomes, a randomized double-blind placebo-controlled study in approximately 700 patients with early NASH cirrhosis to allow for non-invasive monitoring of progression to liver decompensation events. Several biomarker and imaging techniques will also be employed to assess correlates with disease progression. Ongoing open-label studies of more than 180 patients with well-compensated NASH cirrhosis (MAESTRO-NAFLD-1 open-label arm) support the potential of resmetirom in this patient population.

We expect that a positive outcome in MAESTRO-NASH Outcomes could support the full approval of resmetirom for non-cirrhotic NASH, and could potentially accelerate the timeline to full approval. In addition, this study has the potential to broaden the label for resmetirom to include NASH patients with compensated cirrhosis.

Loan Facility to support expansion of clinical development program and ramp-up for potential resmetirom launch

We secured a $250 million Loan Facility ("Loan Facility") with Hercules Capital, Inc ("Hercules") in May 2022. The committed capital strengthens our balance sheet, providing an additional source of funding both to support the expanded clinical program and ramp-up for a potential launch of resmetirom in the U.S.

Under the terms of the Loan Facility, $50 million was drawn at closing. We may also draw up to an additional $125 million in two separate tranches upon achievement of resmetirom clinical and regulatory milestones and conditions. An additional $75 million may be drawn by us, subject to the approval of Hercules. The Loan Facility has a minimum interest rate of 7.45% and adjusts with changes in the prime rate. We will pay interest-only for a period of 30 months, which may be extended to 60 months upon the achievement of certain clinical and regulatory milestones. The loan matures in May 2026 and may be extended an additional year upon the achievement of certain clinical and regulatory milestones.

Basis of Presentation

Research and Development Expenses

Research and development expenses primarily consist of costs associated with our research activities, including the preclinical and clinical development of our product candidates. We expense our research and development expenses as incurred. We contract with clinical research organizations to manage our clinical trials under agreed upon budgets for each study, with oversight by our clinical program managers. We account for nonrefundable advance payments for goods and services that will be used in future research and development activities as expenses when the service has been performed or when the goods have been received. Manufacturing expense includes costs associated with drug formulation development and clinical drug production. We do not track employee and facility related research and development costs by project, as we typically use our employee and infrastructure resources across multiple research and development programs. We believe that the allocation of such costs would be arbitrary and not be meaningful.

Our research and development expenses consist primarily of:

- salaries and related expense, including stock-based compensation;
- external expenses paid to clinical trial sites, contract research organizations, laboratories, database software and consultants that conduct clinical trials;
- expenses related to development and the production of nonclinical and clinical trial supplies, including fees paid to contract manufacturers;
- expenses related to preclinical studies;
- expenses related to compliance with drug development regulatory requirements; and
- other allocated expenses, which include direct and allocated expenses for depreciation of equipment and other supplies.

We expect to continue to incur substantial expenses related to our development activities for the foreseeable future as we conduct our clinical studies programs, manufacturing and toxicology studies. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later stage clinical trials, additional drug manufacturing requirements, and later stage toxicology studies such as carcinogenicity studies. Our research and development expenses have increased period over period in each of 2022 and 2021 and we expect that our research and development expenses will increase in the future, including as a result of our MAESTRO-NASH Outcomes study discussed in –"Key Developments" above. The process of conducting preclinical studies and clinical trials necessary to obtain regulatory approval is costly and time consuming. The probability of success for each product candidate is affected by numerous factors, including preclinical data, clinical data, competition, manufacturing capability and commercial viability. Accordingly, we may never succeed in achieving marketing approval for any of our product candidates.

Completion dates and costs for our clinical development programs as well as our research program can vary significantly for each current and future product candidate and are difficult to predict. As a result, we cannot estimate with any degree of certainty the costs we will incur in connection with the development of our product candidates at this point in time. We expect that we will make determinations as to which programs and product candidates to pursue and how much funding to direct to each program and product candidate on an ongoing basis in response to the scientific success of research, results of ongoing and future clinical trials, potential collaborative agreements with respect to programs or potential product candidates, as well as ongoing assessments as to each current or future product candidate's commercial potential.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries, benefits and stock-based compensation expenses for employees, management costs, costs associated with obtaining and maintaining our patent portfolio, professional fees for accounting, auditing, consulting and legal services, and allocated overhead expenses. We expect that our general and administrative expenses may increase in the future as we expand our operating activities, maintain and expand our patent portfolio and incur additional costs associated with being a public company and maintaining compliance with exchange listing and SEC requirements. We expect these potential increases will likely include management costs, legal fees, accounting fees, directors' and officers' liability insurance premiums and expenses associated with investor relations.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amount of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities as of the date of the financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to accrued research and development expenses and stock-based compensation expense. We base our estimates on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from these estimates under different assumptions or conditions. There have been no material changes in our critical accounting policies and significant judgments and estimates during the nine months ended September 30, 2022, as compared to those disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 filed with the SEC on February 25, 2022.

Results of Operations

Three months Ended September 30, 2022 and 2021

The following table provides comparative unaudited results of operations for the three months ended September 30, 2022 and 2021 (in thousands):

	Three Months Ended September 30,		Increase / (Decrease)	
	2022	2021	$	%
Research and Development Expenses	$ 68,271	$ 54,873	13,398	24%
General and Administrative Expenses	12,141	8,287	3,854	47%
Interest (Income)	(717)	(60)	657	1095%
Interest Expense	1,502	—	1,502	100%
	$ 81,197	$ 63,100	18,097	29%

Revenue

We had no revenue for the three months ended September 30, 2022 and 2021.

Research and Development Expenses

Our research and development expenses were $68.3 million for the three months ended September 30, 2022, compared to $54.9 million in the corresponding period in 2021. Research and development expenses increased by $13.4 million in the 2022 period due primarily to the additional activities related to our Phase 3 clinical trials, an increase in head count, and an increase in stock compensation expense. We expect our research and development expenses to increase as we advance our clinical and preclinical development programs for resmetirom.

General and Administrative Expenses

Our general and administrative expenses were $12.1 million for the three months ended September 30, 2022, compared to $8.3 million in the corresponding period in 2021. General and administrative expenses increased by $3.9 million in the 2022 period due primarily to increases in commercial preparation activities, including a corresponding increase in head count, and an increase in stock compensation expense. We believe our general and administrative expenses may increase over time as we advance our clinical and preclinical development programs for resmetirom, prepare for commercialization, and expand our operating activities, which will likely result in an increase in our headcount, consulting services, and related overhead needed to support those efforts.

Interest Income

Our net interest income was $0.7 million for the three months ended September 30, 2022, compared to $0.1 million in the corresponding period in 2021. The increase in interest income was due primarily to higher interest rates in 2022.

Interest Expense

Our interest expense was $1.5 million for the three months ended September 30, 2022, compared to $0 million in the corresponding period in 2021. The increase in interest expense was as a result of the Loan Facility we entered into with Hercules during the second quarter of 2022.

Nine months Ended September 30, 2022 and 2021

The following table provides comparative unaudited results of operations for the nine months ended September 30, 2022 and 2021 (in thousands):

	Nine Months Ended September 30,		Increase / (Decrease)	
	2022	2021	$	%
Research and Development Expenses	$ 174,699	$ 152,275	22,424	15%
General and Administrative Expenses	33,573	25,606	7,967	31%
Interest (Income)	(1,109)	(311)	798	257%
Interest Expense	2,282	—	2,282	100%
Other (income)	—	(273)	(273)	(100%)
	$ 209,445	$ 177,297	32,148	18%

Revenue

We had no revenue for the nine months ended September 30, 2022 and 2021.

Research and Development Expenses

Our research and development expenses were $174.7 million for the nine months ended September 30, 2022, compared to $152.3 million in the corresponding period in 2021. Research and development expenses increased by $22.4 million in the 2022 period due primarily to the additional activities related to our Phase 3 clinical trials, an increase in head count, and an increase in stock compensation expense. We expect our research and development expenses to increase as we advance our clinical and preclinical development programs for resmetirom.

General and Administrative Expenses

Our general and administrative expenses were $33.6 million for the nine months ended September 30, 2022, compared to $25.6 million in the corresponding period in 2021. General and administrative expenses increased by $8.0 million in the 2022 period due primarily to increases in commercial preparation activities, including a corresponding increase in head count, and an increase in stock compensation expense. We believe our general and administrative expenses may increase over time as we advance our clinical and preclinical development programs for resmetirom, prepare for commercialization, and expand our operating activities, which will likely result in an increase in our headcount, consulting services, and related overhead needed to support those efforts.

Interest Income

Our net interest income was $1.1 million for the nine months ended September 30, 2022, compared to $0.3 million in the corresponding period in 2021. The increase in interest income was due primarily to higher interest rates in 2022.

Interest Expense

Our interest expense was $2.3 million for the nine months ended September 30, 2022, compared to $0 million in the corresponding period in 2021. The increase in interest expense was as a result of the Loan Facility we entered into with Hercules during the second quarter of 2022.

Liquidity and Capital Resources

Since inception, we have incurred significant net losses and we have funded our operations primarily through the issuance of capital stock and also from Loan Facility and the proceeds from our 2016 merger transaction. Our most significant use of capital pertains to salaries and benefits for our employees, including clinical, scientific, operational, financial and management personnel, and external research and development expenses, such as clinical trials and preclinical activity related to our product candidates. We also are required to make repayments of interest and principal on our Loan Facility with Hercules, as described below.

As of September 30, 2022, we had cash, cash equivalents and marketable securities totaling $153.2 million compared to $270.3 million as of December 31, 2021, with this decrease attributable to the funding of operations, partially offset by $50.0 million drawn at closing in May 2022 from the Loan Facility with Hercules. Our cash and investment balances are held in a variety of interest-bearing instruments, including obligations of U.S. government agencies, U.S. Treasury debt securities, corporate debt securities and money market funds. Cash in excess of immediate requirements is invested in accordance with our investment policy with a view toward capital preservation and liquidity.

We anticipate continuing to incur operating losses for the foreseeable future. Subject to the considerations noted below, our rate of cash usage will likely increase in the future, in particular to support our product development and pre-commercialization efforts. Our future long-term liquidity requirements will be substantial and will depend on many factors. To meet future long-term liquidity requirements, we will need to raise additional capital to fund our operations through equity or debt financings, collaborations, partnerships or other strategic transactions. We regularly consider fundraising opportunities and may decide, from time to time, to raise capital based on various factors, including market conditions and our plans of operation. This includes, but is not limited to, the use of a $200 million at-the-market sales agreement entered into in June of 2021, with Cowen and Company, LLC (the “2021 Sales Agreement”), pursuant to which we may, from time to time, issue and sell shares of our common stock up to established limits. We may also draw on additional tranches of debt under our $250 million Loan Facility with Hercules based upon achievement of resmetirom clinical and regulatory milestones and conditions. However, there is no assurance that additional capital and financing will be available on terms acceptable to us, or at all. See “Risk Factors” in Part I, Item 1A of our Annual Report for the year ended December 31, 2021 and in Part II, Item I.A of our quarterly report on Form 10-Q for the period ended March 31, 2022, which includes a description of the risks related to our liquidity requirements, financial position and need for capital. In addition, if such capital or financing is available, any sales of additional equity securities may result in dilution to our stockholders, and any additional debt financing may include covenants that restrict our business.

Based upon our current operating plans, and the Company’s cash, cash equivalents and marketable securities totaling $153.2 million as of September 30, 2022, the Company expects, that such resources will not be sufficient to fund our operating expenses and capital requirements through the one year anniversary of the filing of this Quarterly Report on Form 10-Q. These conditions raise substantial doubt about our ability to continue as a going concern under ASC 205-40. While management currently believes this shortfall can be addressed by future financings and capital issuances, or by delaying certain clinical studies or pre-commercialization expenses if necessary, under the requirements of ASC 205-40, management may not consider in its assessment of the Company’s ability to meet its obligations for the next twelve months the potential for future capital raises through debt or equity financings, collaborations, partnerships or other strategic transactions, or management plans to reduce costs that are not considered probable under these accounting standards. The financial statements do not include any adjustments that might result from the outcome of this uncertainty. The inability of the Company to obtain sufficient funds on acceptable terms when needed: could have a material adverse effect on the Company’s business, results of operations and financial condition; could result in the Company delaying, reducing or eliminating some or all of its research and development programs, clinical studies or pre-commercialization efforts; could adversely affect the Company's business prospects; and could affect the Company's ability to maintain compliance with covenants under the Loan Facility. Although the Company has been successful in raising capital and financing in the past, there is no assurance that it will be successful in obtaining such additional financing on terms acceptable to the Company, if at all.

Loan Facility

On May 9, 2022, we and our wholly-owned subsidiary, Canticle Pharmaceuticals, Inc., entered into the $250.0 million Loan Facility with the several banks and other financial institutions or entities party thereto (each, a "Lender" and collectively referred to as the "Lenders"), and Hercules, in its capacity as administrative agent and collateral agent for itself and the Lenders. Under the terms of the Loan Facility, the first $50.0 million tranche was drawn at closing. The Company may also draw up to an additional $125.0 million in two separate tranches upon achievement of certain resmetirom clinical and regulatory milestones and conditions. A fourth tranche of $75.0 million may be drawn by the Company, subject to the approval of Hercules.

The Loan Facility has a minimum interest rate of 7.45% and adjusts with changes in the prime rate. The Company will pay interest-only monthly payments of accrued interest under the Loan Facility for a period of 30 months, which period may be extended to 36, 48, and 60 months upon the successive achievement of certain clinical and regulatory milestones and if the Company maintains compliance with applicable financial covenants. The Loan Facility matures in May 2026 and may be extended an additional year upon the achievement of certain clinical and regulatory milestones.

As of September 30, 2022, the outstanding principal under the Loan Facility was $50.0 million. The interest rate as of September 30, 2022 was 10.20%. Please see "Note 6 – Long Term Debt" to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q for information on the Loan Facility.

Cash Flows

The following table provides a summary of our net cash flow activity (in thousands):

	Nine Months Ended September 30,	
	2022	2021
Net cash used in operating activities	$ (166,342)	$ (135,866)
Net cash provided by (used in) investing activities	140,299	(20,698)
Net cash provided by financing activities	49,114	151,734
Net increase (decrease) in cash and cash equivalents	$ 23,071	$ (4,830)

Net cash used in operating activities was $166.3 million for the nine months ended September 30, 2022, compared to $135.9 million for the corresponding period in 2021. The use of cash in these periods resulted primarily from our losses from operations, as adjusted for non-cash charges for stock-based compensation, and changes in our working capital accounts.

Net cash provided by investing activities was $140.3 million for the nine months ended September 30, 2022, compared to $20.7 million used in for the corresponding period in 2021. Net cash provided by investing activities for the nine months ended September 30, 2022 consisted of $271.2 million from sales and maturities of marketable securities, partially offset by $130.7 million used in purchases of marketable securities for our investment portfolio. Net cash used in for the corresponding period in 2021 consisted of $339.4 million of purchases of marketable securities for our investment portfolio, partially offset by $318.8 million from sales and maturities of marketable securities.

Net cash provided by financing activities was $49.1 million for the nine months ended September 30, 2022, compared to $151.7 million for the corresponding period in 2021. Financing activities for the nine months ended September 30,2022 consisted of $50.0 million from issuance of the Loan Facility, partially offset by $0.9 million of loan issuance costs. Net cash provided by for the corresponding period in 2021 consisted of $151.2 million from net proceeds from issuances of common stock under an At The Market (ATM) sales agreement and $0.5 million from the exercise of stock options.

Contractual Obligations and Commitments

Except for the future minimum payments due on the Loan Facility with Hercules set forth in "Note 6 – Long Term Debt" to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q, no significant changes to contractual obligations and commitments occurred during the nine months ended September 30, 2022, as compared to those disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 filed with the SEC on February 25, 2022.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rate Risk

Our exposure to market risk is confined to our cash, cash equivalents and marketable securities and Loan Facility. We regularly review our investments and monitor the financial markets. We invest in high-quality financial instruments, primarily money market funds, U.S. government and agency securities, government- sponsored bond obligations and certain other corporate debt securities, with the effective duration of the portfolio less than twelve months and no security with a duration in excess of twenty-four months, which we believe are subject to limited credit risk. We currently do not hedge interest rate exposure. Due to the short-term duration of our investment portfolio and the current risk profile of our investments, we believe that an immediate 10% change in interest rates would not have a material effect on the fair market value of our portfolio. We do not believe that we have any material exposure to interest rate risk or changes in credit ratings arising from our investments.

In May 2022 we entered into a Loan Facility, which has an interest rate that is linked to the prime rate. We do not believe that we have any material exposure to interest rate risk given the current principal amount of the loan.

Capital Market Risk

We currently have no product revenues and depend on funds raised through other sources. One source of funding is through future debt or equity offerings. Our ability to raise funds in this manner depends upon, among other things, capital market forces affecting our stock price and the factors described in our "Cautionary Note Regarding Forward-Looking "Statements." "Liquidity and Capital Resources" and "Risk Factors" disclosures included or referred to in this filing.

Effects of Inflation

Inflation generally affects us with increased cost of labor and clinical trial costs. We do not believe that inflation and changing prices had a significant impact on our results of operations for any periods presented herein.

Item 4. Controls and Procedures.

Definition and Limitations of Disclosure Controls

Our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) are designed to provide reasonable assurance that information required to be disclosed by us in the reports that we file under the Exchange Act, such as this Quarterly Report, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. Our management evaluates these controls and procedures on an ongoing basis.

We carried out an evaluation, under the supervision of and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this Quarterly Report. Based on the foregoing, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level.

Limitations on the Effectiveness of Controls and Procedures

In designing and evaluating our disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable, not absolute, assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs. The design of any disclosure controls and procedures also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Changes in Internal Control over Financial Reporting

There has been no change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings.

We are not party to any material pending legal proceedings. From time to time, we may be involved in legal proceedings arising in the ordinary course of business.

Item 1A. Risk Factors.

There have been no material changes to the risk factors included in detail in the "Risk Factors" sections appearing in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on February 22, 2022 as updated by Part II, Item 1A in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2022 filed with the SEC on May 9, 2022.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

None.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

The exhibits filed or furnished as part of this Quarterly Report on Form 10-Q are set forth on the Exhibit Index, which Exhibit Index is incorporated herein by reference.

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference Form	File No.	Exhibit	Filing Date	Filed Herewith
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1*	Certifications of Principal Executive Officer and Principal Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101.INS	Inline XBRL Instance Document.					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document.					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.					X
104	Inline XBRL for the cover page of this Quarterly Report on Form 10-Q, included in the Exhibit 101 Inline XBRL Document Set.					

* The certifications attached as Exhibit 32.1 that accompany this Quarterly Report pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, shall not be deemed "filed" by the registrant for purposes of Section 18 of the Exchange Act and are not to be incorporated by reference into any of the registrant's filings under the Securities Act or the Exchange Act, irrespective of any general incorporation language contained in any such filing.

SIGNATURES

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

MADRIGAL PHARMACEUTICALS, INC.

Date: November 3, 2022	By: /s/ Paul A. Friedman, M.D. Paul A. Friedman, M.D. Chief Executive Officer and Chairman of the Board (Principal Executive Officer)
Date: November 3, 2022	By: /s/ Alex G. Howarth Alex G. Howarth Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a) AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Paul A. Friedman, M.D., certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Madrigal Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Paul A. Friedman, M.D.

Paul A. Friedman, M.D.
Chief Executive Officer and Chairman of the Board
(Principal Executive Officer)
Date: November 3, 2022

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a) AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Alex G. Howarth, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Madrigal Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

/s/ Alex G. Howarth

Alex G. Howarth
Senior Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)
Date: November 3, 2022

Exhibit 32.1

**CERTIFICATIONS PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. Section 1350)), each of the undersigned officers of Madrigal Pharmaceuticals, Inc., a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

The Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2022 (the "Form 10-Q") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 3, 2022	/s/ Paul A. Friedman, M.D.
	Paul A. Friedman, M.D. Chief Executive Officer and Chairman of the Board (Principal Executive Officer)
Dated: November 3, 2022	/s/ Alex G. Howarth
	Alex G. Howarth Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)

These certifications accompany the Form 10-Q, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.