

Mast Therapeutics, Inc.  
Form 10-Q  
May 05, 2014  
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**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 March 31, 2014**

**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 001-32157**

**Mast Therapeutics, Inc.**

**(Exact name of registrant as specified in its charter)**

<b>Delaware</b>	<b>84-1318182</b>
<b>(State or other jurisdiction of incorporation or organization)</b>	<b>(I.R.S. Employer Identification No.)</b>
<b>12390 El Camino Real, Suite 150, San Diego, CA</b> <b>(Address of principal executive offices)</b>	<b>92130</b> <b>(Zip Code)</b>
<b>(858) 552-0866</b>	

**(Registrant's telephone number, including area code)**

**N/A**

**(Former name, former address and former fiscal year, if changed since last report)**

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes  No

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

Large accelerated filer <input type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input type="checkbox"/>	Smaller reporting company <input checked="" type="checkbox"/>

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

The number of shares outstanding of the registrant's common stock, \$0.001 par value per share, as of April 30, 2014 was 114,136,502.



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**Table of Contents****PART I FINANCIAL INFORMATION****Item 1. Financial Statements****Mast Therapeutics, Inc. and Subsidiaries**

(A Development Stage Enterprise)

**Condensed Consolidated Balance Sheets**

(Unaudited)

	<b>March 31, 2014</b>	<b>December 31, 2013</b>
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 29,848,152	\$ 25,681,092
Investment securities	19,772,011	18,711,448
Prepaid expenses and other current assets	992,474	1,135,490
Total current assets	50,612,637	45,528,030
Property and equipment, net	106,495	105,747
In-process research and development	8,549,000	6,549,000
Goodwill	3,006,883	3,006,883
Other assets	83,542	60,312
Total assets	\$ 62,358,557	\$ 55,249,972
<b>Liabilities and Stockholders Equity</b>		
Current liabilities:		
Accounts payable	\$ 1,449,667	\$ 963,947
Accrued liabilities	3,942,895	2,495,088
Accrued compensation and payroll taxes	772,765	1,374,343
Total current liabilities	6,165,327	4,833,378
Deferred income tax liability	3,403,675	2,608,755
Total liabilities	9,569,002	7,442,133
Stockholders equity:		
Common stock, \$0.001 par value; 500,000,000 shares authorized; 113,721,647 and 102,710,286 shares issued and outstanding at March 31, 2014 and December 31, 2013, respectively	113,722	102,710
Additional paid-in capital	265,501,425	254,154,693
Accumulated other comprehensive loss	(26,185)	(20,738)
Deficit accumulated during the development stage	(212,799,407)	(206,428,826)

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Total stockholders' equity	52,789,555	47,807,839
Total liabilities and stockholders' equity	\$ 62,358,557	\$ 55,249,972

See accompanying notes to unaudited condensed consolidated financial statements.

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(A Development Stage Enterprise)

**Condensed Consolidated Statements of Operations and Comprehensive Income/(Loss)**

(Unaudited)

	<b>Three months ended March 31,</b>		<b>Inception (June 12, 1996)</b>
	<b>2014</b>	<b>2013</b>	<b>Through March 31, 2014</b>
<b>Revenues:</b>			
Net sales	\$	\$	\$ 174,830
Licensing revenue			1,300,000
Grant revenue			618,692
<b>Total net revenues</b>			<b>2,093,522</b>
Cost of goods sold			51,094
<b>Gross margin</b>			<b>2,042,428</b>
<b>Operating expenses:</b>			
Research and development	4,280,817	3,442,912	103,240,536
Selling, general and administrative	2,266,233	2,112,706	78,450,726
Transaction-related expenses	280,352	27,500	1,031,644
Depreciation and amortization	11,450	9,795	11,076,202
Write-off of in-process research and development			10,422,130
Goodwill impairment			5,702,130
Equity in loss of investee			178,936
<b>Total operating expenses</b>	<b>6,838,852</b>	<b>5,592,913</b>	<b>210,102,304</b>
<b>Loss from operations</b>	<b>(6,838,852)</b>	<b>(5,592,913)</b>	<b>(208,059,876)</b>
Reduction of fair value of warrants			(12,239,688)
Interest income	15,346	14,416	4,907,822
Interest expense			(191,729)
Other income/(expense), net	452,925	(2,370)	581,278
<b>Loss before cumulative effect of change in accounting principle</b>	<b>(6,370,581)</b>	<b>(5,580,867)</b>	<b>(215,002,193)</b>
<b>Cumulative effect of change in accounting principle</b>			<b>(25,821)</b>
<b>Net loss</b>	<b>(6,370,581)</b>	<b>(5,580,867)</b>	<b>(215,028,014)</b>

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Preferred stock dividends			(621,240)
Deemed dividends on preferred stock			(10,506,683)
Net loss applicable to common stock	\$ (6,370,581)	\$ (5,580,867)	\$ (226,155,937)
Net loss per common share basic and diluted	\$ (0.06)	\$ (0.12)	
Weighted average shares outstanding basic and diluted	105,053,762	46,265,286	
<u>Comprehensive Income/(Loss):</u>			
Net loss	\$ (6,370,581)	\$ (5,580,867)	\$ (215,028,014)
Other comprehensive gains/(losses)	(5,447)	(8,448)	(24,029)
Comprehensive net loss	\$ (6,376,028)	\$ (5,589,315)	\$ (215,052,043)

See accompanying notes to unaudited condensed consolidated financial statements.

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(A Development Stage Enterprise)

**Condensed Consolidated Statements of Cash Flows**

(Unaudited)

	Three months ended March 31,		Inception (June 12, 1996) through March 31, 2014
	2014	2013	
<b>Cash flows from operating activities:</b>			
Net loss	\$ (6,370,581)	\$ (5,580,867)	\$ (215,028,014)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	11,450	9,795	10,626,204
Loss on disposals of equipment			61,315
Loss on fair value of warrants			12,239,688
Loss/(gain) on change in fair value of contingent consideration		27,500	(1,493,907)
Gain on bargain purchase	(452,944)		(452,944)
Amortization of debt discount			450,000
Forgiveness of employee receivable			30,036
Impairment loss write-off of goodwill			5,702,130
Share-based compensation expense related to employee stock options and restricted stock issued	399,454	351,556	13,548,600
Expenses related to options issued to non-employees			204,664
Expenses paid by issuance of common stock			1,341,372
Expenses paid by issuance of warrants			573,357
Expenses paid by issuance of preferred stock			142,501
Expenses related to stock warrants issued			612,000
Equity in loss of investee			178,936
In-process research and development			10,422,130
Write-off of license agreement			152,866
Impairment of equipment			510,739
Cumulative effect of change in accounting principle			25,821
Amortization of premium / (accretion of discount) on investments in securities			(1,571,502)
Changes in assets and liabilities, net of effect of acquisitions:			
Decrease/(increase) in prepaid expenses and other assets	202,314	140,213	(1,243,170)
(Decrease)/increase in accounts payable and accrued liabilities	(61,996)	563,439	4,739,790

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Net cash used in operating activities	(6,272,303)	(4,488,364)	(158,227,388)
<b>Cash flows from investing activities:</b>			
Purchases of certificates of deposit	(6,745,020)	(2,988,000)	(52,695,234)
Proceeds from maturities of certificates of deposit	5,679,000	6,393,000	32,618,330
Proceeds from sale of certificate of deposit			248,000
Purchases of other investment securities			(111,183,884)
Proceeds from maturities and sales of other investment securities			112,788,378
Purchases of property and equipment	(6,620)	(4,725)	(1,790,205)
Proceeds from sale of property and equipment			66,920
Cash obtained through acquisitions, net of cash paid	3,534,480		3,566,875
Payment on obligation under license agreement			(106,250)
Issuance of note receivable related party			(35,000)
Payments on note receivable			405,993
Advance to investee			(90,475)
Cash transferred in rescission of acquisition			(19,475)
Cash received in rescission of acquisition			230,000
Net cash provided by/(used in) investing activities	2,461,840	3,400,275	(15,996,027)

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	<b>Three months ended March 31,</b>		<b>Inception</b>
	<b>2014</b>	<b>2013</b>	<b>(June 12, 1996)</b>
	<b>through</b>		<b>through</b>
	<b>March 31,</b>		<b>March 31,</b>
	<b>2014</b>		<b>2014</b>
<b>Cash flows from financing activities:</b>			
Proceeds from sale of common stock	8,293,398		160,049,769
Proceeds from exercise of stock options			714,561
Proceeds from sale or exercise of warrants			14,714,258
Proceeds from sale of preferred stock			44,474,720
Repurchase of Subject to Vesting Shares			(1,454)
Repurchase of warrants			(55,279)
Payments for financing and offering costs	(315,875)		(16,573,789)
Payments on notes payable and long-term debt			(605,909)
Proceeds from issuance of notes payable and detachable warrants			1,344,718
Cash paid in lieu of fractional shares for reverse stock split			(146)
Net cash provided by financing activities	7,977,523		204,061,449
Effect of exchange rate changes on cash		(2,428)	10,118
Net increase/(decrease) in cash and cash equivalents	4,167,060	(1,090,517)	29,848,152
Cash and cash equivalents at beginning of period	25,681,092	22,500,440	
Cash and cash equivalents at end of period	\$ 29,848,152	\$ 21,409,923	\$ 29,848,152

See accompanying notes to unaudited condensed consolidated financial statements.

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**Mast Therapeutics, Inc. and Subsidiaries**

**(A Development Stage Enterprise)**

**Notes to Condensed Consolidated Financial Statements (Unaudited)**

**1. Basis of Presentation**

Mast Therapeutics, Inc., a Delaware corporation ( Mast Therapeutics, we or our company ), prepared the unaudited interim condensed consolidated financial statements included in this report in accordance with United States generally accepted accounting principles ( U.S. GAAP ) for interim financial information and the rules and regulations of the Securities and Exchange Commission ( SEC ) related to quarterly reports on Form 10-Q. Accordingly, they do not include all of the information and disclosures required by U.S. GAAP for annual audited financial statements and should be read in conjunction with our audited consolidated financial statements and notes thereto included in our Annual Report on Form 10-K for the year ended December 31, 2013, filed with the SEC on March 26, 2014 ( 2013 Annual Report ). The condensed consolidated balance sheet as of December 31, 2013 included in this report has been derived from the audited consolidated financial statements included in the 2013 Annual Report. In the opinion of management, these condensed consolidated financial statements include all adjustments (consisting of normal recurring adjustments) necessary for a fair statement of the financial position, results of operations and cash flows for the periods presented. The results of operations for the interim periods shown in this report are not necessarily indicative of the results that may be expected for any future period, including the full year.

We are a biopharmaceutical company focused on developing therapies for serious or life-threatening diseases. We have devoted substantially all of our resources to research and development ( R&D ) and acquisition of our product candidates. We have not yet marketed or sold any products or generated any significant revenue. Through our acquisition of SynthRx, Inc., a development-stage, privately-held Delaware corporation ( SynthRx ), in 2011, we acquired our Membrane Adhesion & Sealant Technology (MAST) platform, which includes proprietary poloxamer-related data and know-how derived from over two decades of clinical, nonclinical and manufacturing experience, and we are leveraging the MAST platform to develop MST-188, our lead product candidate, for serious or life-threatening diseases and conditions typically characterized by impaired microvascular blood flow and damaged cell membranes.

In February 2014, we completed the acquisition of Aires Pharmaceuticals, Inc., a development-stage, privately-held Delaware corporation ( Aires ), which is developing AIR001, an intermittently nebulized form of sodium nitrite, to treat pulmonary vascular disorders.

**2. Use of Estimates**

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. On an ongoing basis, we evaluate our estimates, including estimates related to R&D expenses, in-process research and development ( IPR&D ), goodwill and share-based compensation expenses. We base our estimates on historical experience and various other relevant assumptions we believe to be reasonable under the circumstances. Actual results may differ from these estimates.

**3. Acquisition of Aires**

In February 2014, we completed the acquisition of Aires in an all-stock transaction pursuant to the terms of an agreement and plan of merger, dated February 7, 2014, by and among us, AP Acquisition Sub, Inc., a wholly-owned subsidiary of ours, Aires, and a stockholders representative (the Merger Agreement ). Aires survived the merger transaction as a wholly-owned subsidiary of ours. Aires lead product candidate is AIR001 (sodium nitrite) inhalation solution and, prior to the acquisition, Aires had been focused on developing AIR001 in pulmonary arterial hypertension.

Upon completion of the merger, we issued an aggregate of 1,049,706 unregistered shares of our common stock to former Aires stockholders and, following a six-month holdback period, we will issue up to 4,198,830 additional unregistered shares of our common stock, in the aggregate, to former Aires stockholders, subject to adjustment to satisfy indemnification obligations of the former Aires stockholders to us, if any, in accordance with the merger agreement. There are no milestone or earn-out payments under the merger agreement; therefore, the total merger consideration will not exceed 5,248,536 shares.

We accounted for the acquisition of Aires in accordance with Accounting Standards Codification ( ASC ) Topic 805, *Business Combinations* ( ASC Topic 805 ). The total purchase price of the acquisition is approximately \$3.2 million. We calculated the purchase price by first multiplying the estimated total number of shares of our common stock to be issued by \$0.80, which was the closing price per share of our common stock on February 27, 2014, the acquisition date. Then, we applied a discount factor to account for lack of market liquidity due to the restrictions on transfer of the securities for a period of six months following the acquisition in accordance with stockholder agreements we entered into with the former Aires stockholders and the fact that the shares are unregistered and we have no obligation to register them for resale.

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Under the acquisition method of accounting, the total purchase price is allocated to Aires' net tangible and intangible assets and liabilities based on their estimated fair values as of the acquisition date. The table below summarizes the preliminary estimated fair values of Aires' net tangible and intangible assets and liabilities on the acquisition date. The purchase price allocations are preliminary and subject to change as more detailed analyses are completed and additional information with respect to the fair values of the assets and liabilities acquired becomes available.

Cash and cash equivalents	\$ 3,534,480
Prepaid expenses and other assets	85,681
In-process research and development	2,000,000
Total assets:	5,620,161
Accounts payable and accrued liabilities	1,212,297
Deferred tax liability	794,920
Total liabilities:	2,007,217
Net assets acquired	\$ 3,612,944

The preliminary estimated fair value of the net assets acquired exceeds the purchase price by approximately \$0.5 million. Accordingly, we recognized the \$0.5 million excess as a bargain purchase gain in other income/(expense), net in our condensed consolidated statements of operations and comprehensive income/(loss). We were able to realize a gain because Aires was in a distressed sale situation. Aires lacked sufficient capital to continue operations and was unable to secure additional capital in the timeframe it required.

***Acquired In-Process Research and Development***

Acquired IPR&D is the estimated fair value of the AIR001 program as of the acquisition date. We determined that the estimated fair value of the AIR001 program was \$2.0 million as of the acquisition date using the Multi-Period Excess Earnings Method, or MPEEM, which is a form of the income approach. Under the MPEEM, the fair value of an intangible asset is equal to the present value of the asset's incremental after-tax cash flows (excess earnings) remaining after deducting the market rates of return on the estimated value of contributory assets (contributory charge) over its remaining useful life.

To calculate fair value of the AIR001 program under the MPEEM, we used probability-weighted, projected cash flows discounted at a rate considered appropriate given the significant inherent risks associated with drug development by development-stage companies. Cash flows were calculated based on estimated projections of revenues and expenses related to AIR001 and then reduced by a contributory charge on requisite assets employed. Contributory assets included debt-free working capital, net fixed assets and assembled workforce. Rates of return on the contributory assets were based on rates used for comparable market participants. Cash flows were assumed to extend through a seven-year market exclusivity period. The resultant cash flows were then discounted to present value using a weighted-average cost of equity capital for companies with profiles substantially similar to that of Aires, which we believe represents the rate that market participants would use to value the assets. We compensated for the phase of development of the program by applying a probability factor to our estimation of the expected future cash flows. The projected cash flows were based on significant assumptions, including the indication in which we will pursue development of AIR001, the time and resources needed to complete the development and regulatory approval of AIR001, estimates of revenue and operating profit related to the program considering its stage of development, the

life of the potential commercialized product, market penetration and competition, and risks associated with achieving commercialization, including delay or failure to obtain regulatory approvals to conduct clinical studies, failure of clinical studies, delay or failure to obtain required market clearances, and intellectual property litigation.

***Deferred Income Tax Liability***

The \$0.8 million recorded for deferred income tax liability resulting from the acquisition reflects the tax impact of the difference between the book basis and tax basis of acquired IPR&D. Such deferred income tax liability cannot be used to offset deferred tax assets when analyzing our end of year valuation allowance as the acquired IPR&D is considered to have an indefinite life until we complete or abandon development of AIR001.

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The following unaudited pro forma information presents our condensed consolidated results of operations as if the acquisition of Aires had occurred on January 1, 2013:

	<b>Three months ended March 31,</b>	
	<b>2014</b>	<b>2013</b>
Revenues	\$	\$ 397,857
Loss from operations	(7,532,447)	(9,085,094)
Net loss applicable to common stock	(7,516,795)	(9,072,377)

The \$0.4 million of revenues consists of amounts recognized by Aires during the three months ended March 31, 2013 as a result of a payment by a third-party partner pursuant to a collaboration agreement. The agreement was terminated in the fourth quarter of 2013. Aires recognized no revenues in 2014.

The above unaudited pro forma financial information includes the following nonrecurring adjustments directly attributable to the acquisition:

	<b>Three months ended March 31,</b>	
	<b>2014</b>	<b>2013</b>
Transaction-related expenses	\$ 1,315,522	\$ (1,315,522)

Transaction-related expenses include \$0.9 million of severance payments to former executive officers of Aires pursuant to employment agreements between them and Aires.

The above unaudited pro forma condensed consolidated financial information is presented for illustrative purposes only. It is not necessarily indicative of what the results of operations actually would have been had the acquisition been completed on the date indicated. In addition, it does not purport to project the future operating results of the combined entity.

The operations of Aires were consolidated with our operations as of the closing of the acquisition on February 27, 2014. Accordingly, Aires total operating expenses of \$0.3 million for the three months ended March 31, 2014 were included in our condensed consolidated statements of operations and comprehensive income/(loss).

**4. Goodwill and IPR&D**

At March 31, 2014 and December 31, 2013, our goodwill and IPR&D consisted of the following:

	<b>March 31, 2014</b>	<b>December 31, 2013</b>
Goodwill	\$ 3,006,883	\$ 3,006,883
IPR&D		



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Acquired IPR&D related to SynthRx acquisition	6,549,000	6,549,000
Acquired IPR&D related to Aires acquisition	2,000,000	
<b>Total goodwill and IPR&amp;D</b>	<b>\$ 11,555,883</b>	<b>\$ 9,555,883</b>

Our goodwill represents the difference between the total purchase price for SynthRx and the aggregate fair values of tangible and intangible assets acquired, less liabilities assumed. We test our goodwill for impairment annually as of September 30 and between annual tests if we become aware of an event or a change in circumstances that would indicate the carrying amount may be impaired.

Our IPR&D consists of the estimated fair values of the MST-188 and AIR001 programs as of their respective acquisition dates. We test our acquired IPR&D for impairment annually as of September 30 and between annual tests if we become aware of an event or a change in circumstances that would indicate the carrying amount may be impaired.

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Investment securities are marketable equity or debt securities. All of our investment securities are available-for-sale securities and carried at fair value. Fair value for securities with short maturities and infrequent secondary market trades typically is determined by using a curve-based evaluation model that utilizes quoted prices for similar securities. The evaluation model takes into consideration the days to maturity, coupon rate and settlement date convention. Net unrealized gains or losses on these securities are included in accumulated other comprehensive loss, which is a separate component of stockholders' equity. Realized gains and realized losses are included in other income/(expense), while amortization of premiums and accretion of discounts are included in interest income. Interest and dividends on available-for-sale securities are included in interest income. We periodically evaluate our investment securities for impairment. If we determine that a decline in fair value of any investment security is other than temporary, then the cost basis would be written down to fair value and the decline in value would be charged to earnings.

Our investment securities are under the custodianship of a major financial institution and consist of FDIC-insured certificates of deposit. We have classified all of our available-for-sale investment securities, including those with maturities beyond one year from the date of purchase, as current assets on our consolidated balance sheets because we consider them to be highly liquid and available for use, if needed, in current operations. As of March 31, 2014, \$4.2 million of our investment securities had contractual maturity dates of more than one year and less than or equal to 18 months and none were greater than 18 months.

At March 31, 2014, the fair value of our investment securities was \$19,772,011. The cost basis of such investments was \$19,796,040 and our net unrealized losses were \$24,029.

**6. Fair Value of Financial Instruments**

Our investment securities are carried at fair value. The fair value of financial assets and liabilities is measured under a framework that establishes levels which are defined as follows: (i) Level 1 fair value is determined from observable, quoted prices in active markets for identical assets or liabilities; (ii) Level 2 fair value is determined from inputs, other than Level 1 inputs, that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities, and (iii) Level 3 fair value is determined using the entity's own assumptions about the inputs that market participants would use in pricing an asset or liability.

The fair values at March 31, 2014 and December 31, 2013 of our investment securities are summarized in the following table:

	<b>Total Fair Value</b>	<b>Fair Value Determined Under:</b>		
		<b>(Level 1)</b>	<b>(Level 2)</b>	<b>(Level 3)</b>
Investment securities at March 31, 2014	\$ 19,772,011	\$	\$ 19,772,011	\$
Investment securities at December 31, 2013	\$ 18,711,448	\$	\$ 18,711,448	\$

**7. Property and Equipment**

Property and equipment are stated at cost, less accumulated depreciation. Property and equipment are depreciated using the straight-line method over the estimated useful lives of the assets, which generally is three to five years.

Leasehold improvements are amortized over the economic life of the asset or the lease term, whichever is shorter. Repairs and maintenance are expensed as incurred.

## 8. Accrued Liabilities

Accrued liabilities at March 31, 2014 and December 31, 2013 were as follows:

	<b>March 31, 2014</b>	<b>December 31, 2013</b>
Accrued R&D agreements and study expenses	\$ 3,552,026	\$ 2,273,860
Accrued acquisition costs	295,325	44,640
Other accrued liabilities	95,544	176,588
Total accrued liabilities	\$ 3,942,895	\$ 2,495,088

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Approximately \$0.8 million of the accrued R&D agreements and study expenses are assumed liabilities recorded through the acquisition of Aires.

**9. Share-Based Compensation Expense**

Estimated share-based compensation expense related to equity awards granted to our employees and non-employee directors for the three months ended March 31, 2014 and 2013 was as follows:

	<b>Three months ended March 31,</b>	
	<b>2014</b>	<b>2013</b>
Selling, general and administrative expense	\$ 340,498	\$ 314,428
Research and development expense	58,956	37,128
<b>Share-based compensation expense</b>	<b>\$ 399,454</b>	<b>\$ 351,556</b>

During the three months ended March 31, 2014, the only equity awards granted to our employees and non-employee directors were stock option awards. The following table summarizes such equity award activity:

	<b>Shares Underlying Option Awards</b>	<b>Weighted- Average Exercise Price</b>
Outstanding at December 31, 2013	7,304,828	\$ 1.38
Granted	2,186,900	\$ 0.49
Exercised		\$
Cancelled/forfeited/expired		\$
<b>Outstanding at March 31, 2014</b>	<b>9,491,728</b>	<b>\$ 1.18</b>

At March 31, 2014, total unrecognized estimated compensation cost related to non-vested employee and non-employee director share-based awards granted prior to that date was \$3.1 million, which is expected to be recognized over a weighted-average period of 2.9 years.

**10. Net Loss Per Common Share**

Basic and diluted net loss per common share was calculated by dividing the net loss applicable to common stock for the three months ended March 31, 2014 and 2013 by the weighted-average number of common shares outstanding during those periods, respectively, without consideration for outstanding common stock equivalents because their effect would have been anti-dilutive. Common stock equivalents are included in the calculation of diluted earnings per common share only if their effect is dilutive. For the periods presented, our outstanding common stock equivalents consisted of options and warrants to purchase shares of our common stock. The weighted-average number of those common stock equivalents outstanding for each of the periods presented is set forth in the table below:

	<b>Three months ended March 31,</b>	
	<b>2014</b>	<b>2013</b>
Options	9,412,845	4,058,751
Warrants	44,585,932	16,488,432

### **11. Recent Accounting Pronouncements**

In July 2013, the Financial Accounting Standards Board ( FASB ) issued ASU No. 2013-11, *Income Taxes (Topic 740): Presentation of an Unrecognized Tax Benefit When a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists* ( ASU 2013-11 ). This standard requires an unrecognized tax benefit related to a net operating loss carryforward, a similar tax loss or a tax credit carryforward to be presented as a reduction to a deferred tax asset, unless the tax benefit is not available at the reporting date to settle any additional income taxes under the tax law of the applicable tax jurisdiction. ASU 2013-11 is effective for fiscal years and interim periods beginning after December 15, 2013. We adopted this guidance effective January 1, 2014. Our adoption of this standard did not have a significant impact on our consolidated financial position, results of operations and other comprehensive income/loss or cash flows.

**Table of Contents****12. Supplemental Cash Flow Information**

Non-cash investing and financing transactions presented separately from the condensed consolidated statements of cash flows for the three months ended March 31, 2014 and 2013 and for the period from inception (June 12, 1996) through March 31, 2014 are as follows:

	<b>Three months ended</b>		<b>Inception</b>
	<b>March 31,</b>		<b>(June 12, 1996)</b>
	<b>2014</b>	<b>2013</b>	<b>through</b>
			<b>March 31, 2014</b>
Supplemental disclosures of cash flow information:			
Interest paid	\$	\$	\$ 180,719
Supplemental disclosures of non-cash investing and financing activities:			
Issuance of warrants, common stock and preferred stock for:			
Conversion of notes payable and accrued interest			1,213,988
Prepaid services to consultants			1,482,781
Conversion of preferred stock			13,674
Acquisitions	3,160,000		33,826,878
Issuance of common stock to pay dividends			213,000
Financial advisor services in conjunction with financings			3,477,571
Underwriter commissions in conjunction with financings			766,784
Acquisition of treasury stock in settlement of a claim			34,737
Cancellation of treasury stock			(34,737)
Assumptions of liabilities in acquisitions	1,212,297		2,744,103
Fair value of contingent liabilities, net of contingent assets, recorded at acquisition date			784,419
Issuance of common stock for milestone achievement			250
Acquisition of license agreement for long-term debt			161,180
Unrealized loss on investment securities	5,447	8,448	24,029
Disposal of equipment in conjunction with settlement of a liability			99,875
Cashless exercise of warrants			4,312
Dividends accrued			621,040
Trade asset converted to available-for-sale asset			108,000

Dividends extinguished		408,240
Trade payable converted to note payable		83,948
Issuance of warrants for return of common stock		50,852
Detachable warrants issued with notes payable		450,000
Cumulative preferred stock dividends		13,502,403
Financing costs in accounts payable and accrued liabilities	179,232	179,232

### 13. Stockholders Equity

#### *At the Market Equity Offering Program*

In February 2014, we entered into a sales agreement with Cowen and Company, LLC ( Cowen ), to sell shares of our common stock, with aggregate gross sales proceeds of up to \$30 million, from time to time, through an at the market equity offering program (the ATM program ), under which Cowen acts as sales agent. As of March 31, 2014, we had sold and issued an aggregate of 9,961,655 shares at a weighted-average sales price of \$0.83 per share under the ATM program for aggregate gross proceeds of \$8.3 million and \$7.8 million in net proceeds, after deducting sales agent commission and discounts and our other offering costs.

#### *Underwritten Public Offering of Common Stock and Warrants*

In June 2013, we completed an underwritten public offering of 56,195,000 shares of our common stock and warrants to purchase up to 28,097,500 additional shares of our common stock. These securities were offered and sold to the underwriters and the public in units with each unit consisting of one share of common stock and one warrant to purchase up to 0.5 of a share of common stock. The gross proceeds from this financing were \$28.1 million and, after deducting underwriting discounts and commissions and our other offering expenses, our net proceeds were \$25.7 million. We may receive up to \$18.3 million of additional proceeds from the exercise of the warrants issued in the financing. The exercise price of the warrants is \$0.65 per share. Subject to certain beneficial ownership limitations, the warrants are exercisable at any time on or before June 19, 2018.

**Table of Contents*****Shares Issuable to Former SynthRx Stockholders Upon Achievement of Milestones***

In April 2011, we acquired SynthRx as a wholly-owned subsidiary through a merger transaction in exchange for shares of our common stock and rights to additional shares of our common stock upon achievement of specified milestones related to MST-188. We have issued an aggregate of 3,050,851 shares of our common stock to the former SynthRx stockholders, 1,454,079 of which we repurchased in December 2012 for \$0.001 per share pursuant to our exercise of a repurchase right under the merger agreement. We could issue up to an aggregate of 12,478,050 additional shares of our common stock to the former SynthRx stockholders if and when the development of MST-188 achieves certain milestones as follows: (a) 3,839,400 shares upon acceptance for review by the U.S. Food and Drug Administration ( FDA ) of a new drug application ( NDA ) covering the use of purified poloxamer 188 for the treatment of sickle cell crisis in children and (b) 8,638,650 shares upon approval of such NDA by the FDA.

***Outstanding Warrants***

At March 31, 2014, outstanding warrants to purchase shares of common stock are as follows:

<b>Shares Underlying</b>		
<b>Outstanding Warrants</b>	<b>Exercise Price</b>	<b>Expiration Date</b>
99,696	\$ 11.9125	June 2014
36,071	\$ 3.7500	June 2014
19,007	\$ 4.4750	July 2014
14,183	\$ 4.0625	August 2014
144,000	\$ 5.8750	October 2014
216,000	\$ 3.6700	October 2014
409,228	\$ 3.4400	April 2015
1,062,500	\$ 1.0000	April 2015
1,816,608	\$ 3.6500	May 2015
2,046,139	\$ 2.7500	January 2016
10,625,000	\$ 1.1000	November 2016
28,097,500	\$ 0.6500	June 2018
44,585,932		



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

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the condensed consolidated financial statements and accompanying notes appearing elsewhere in this report. For additional context with which to understand our financial condition and results of operations, see the discussion and analysis included in Part II, Item 7 of our annual report on Form 10-K for the year ended December 31, 2013, filed with the U.S. Securities and Exchange Commission, or SEC, on March 26, 2014, as well as the consolidated financial statements and accompanying notes contained therein. In addition to historical information, this discussion and analysis contains forward-looking statements that involve risks, uncertainties, and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including but not limited to those identified under "Forward Looking Statements" below and those discussed in Item 1A (Risk Factors) of Part I of our annual report on Form 10-K for the year ended December 31, 2013. Mast Therapeutics, our corporate logo and SynthRx are trademarks of our company. All trademarks, service marks or trade names appearing in this report are the property of their respective owners. Use or display by us of other parties' trademarks, service marks or trade names is not intended to and does not imply a relationship with, or endorsements or sponsorship of, us by the trademark, service mark or trade name owners.*

**Overview**

We are a biopharmaceutical company developing novel therapies for serious or life-threatening diseases with significant unmet needs. We are leveraging our Molecular Adhesion & Sealant Technology, or MAST, platform, derived from over two decades of clinical, nonclinical and manufacturing experience with purified and non-purified poloxamers, to develop MST-188, our lead product candidate. MST-188 has demonstrated multiple pharmacologic effects that may provide clinical benefit in a wide range of diseases and conditions typically characterized by impaired microvascular blood flow and damaged cell membranes. We recently acquired Aires Pharmaceuticals, which is developing AIR001 (sodium nitrite) inhalation solution, and we are in the process of determining the optimal development strategy for this new asset.

We have devoted substantially all of our resources to research and development, or R&D, and to acquisition of our product candidates. We have not yet marketed or sold any products or generated any significant revenue and we have incurred significant annual operating losses since inception. We incurred a loss from operations of \$6.8 million for the three months ended March 31, 2014. Our cash, cash equivalents and investment securities were \$49.6 million as of March 31, 2014.

We continue to focus our resources primarily on MST-188. We believe that its pharmacologic effects support its development in a wide range of serious or life-threatening diseases and conditions and we intend to develop MST-188 in multiple clinical indications, both independently and through collaborations. Enrolling subjects in EPIC, our ongoing pivotal phase 3 study of MST-188 in patients with sickle cell disease, is one of our top priorities. In March 2014, we initiated a phase 2, clinical proof-of-concept study of MST-188 in combination with recombinant tissue plasminogen activator (rt-PA) in patients with acute lower limb ischemia to evaluate whether MST-188 improves effectiveness of rt-PA therapy. In addition, our MST-188 pipeline includes development programs in heart failure and resuscitation following major trauma (i.e., restoration of circulating blood volume and pressure).

We anticipate that our cash, cash equivalents and investment securities will be sufficient to fund our operations for at least the next 12 months. However, we have based this estimate on significant assumptions and we could utilize our available financial resources sooner than we currently expect. For example, we may pursue development activities for our product candidates at levels or on timelines, or we may incur unexpected expenses, that shorten the period through which our current financial resources will sustain us. We expect to incur significant and increasing losses for the next

several years as we advance our product candidates through clinical studies and other development activities and seek regulatory approval for commercialization. We will need additional capital to support our planned operating activities. In addition, we may seek to expand our product pipeline through acquisition of additional product candidates and/or technologies. Our capital requirements will likely increase in future periods if we determine to conduct studies of our product candidates in addition to those currently planned, if we determine to pursue clinical development of our product candidates in additional indications without a partner, or if we determine to expand our product pipeline through acquisition of new product candidates and/or technologies. For the foreseeable future, we plan to fund our operations through public or private equity and/or debt financings and through collaborations, including licensing arrangements. However, adequate additional capital may not be available to us on acceptable terms, on a timely basis, or at all. Our failure to raise capital as and when needed would have a material and adverse effect on our financial condition and ability to pursue our business strategy.

### **Acquisition of Aires Pharmaceuticals**

On February 27, 2014, we completed the acquisition of Aires Pharmaceuticals, Inc., a privately-held Delaware corporation, in an all-stock transaction pursuant to an agreement and plan of merger, dated February 7, 2014, by and among us, AP Acquisition Sub, Inc., a wholly-owned subsidiary of ours, Aires Pharmaceuticals, and a stockholders representative, which resulted in Aires becoming our wholly-owned subsidiary. Aires' lead product candidate is AIR001 (sodium nitrite) inhalation solution, and, prior to the acquisition, Aires had focused its development in pulmonary arterial hypertension, an indication for which it has orphan drug status in the U.S. and European Union.

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**Merger Consideration.** Upon completion of the merger, we issued an aggregate of 1,049,706 unregistered shares of our common stock to former Aires stockholders and, following a six-month holdback period, we will issue up to 4,198,830 additional unregistered shares of our common stock, in the aggregate, to former Aires stockholders, subject to adjustment to satisfy indemnification obligations of the former Aires stockholders to us, if any, in accordance with the merger agreement. There are no milestone or earn-out payments under the merger agreement; therefore, the total merger consideration will not exceed 5,248,536 shares, or 5% of our outstanding common stock as of the acquisition date.

**Stockholder Agreement.** On February 7, 2014, we also entered into a stockholder agreement with the holders of all outstanding shares of Aires preferred stock and approximately 90% of the outstanding shares of Aires common stock. The transfer restrictions aspect of this agreement, among other things, prohibits the stockholder parties from transferring any shares acquired from us pursuant to the merger agreement for a period of six months from the closing date of the merger, subject to certain exceptions.

**In-License Agreement with The National Institutes of Health.** Aires has exclusive, sublicensable, worldwide rights to issued and pending patents related to nitrite salts and their uses, under which it may develop and commercialize inhaled nitrite formulations to treat pulmonary arterial hypertension, ischemia reperfusion injury and reperfusion injury associated with organ transplantation pursuant to a Public Health Service Patent License Agreement Exclusive, or the NIH License. Under the terms of the NIH License, Aires agreed to make a minimum annual payment of \$15,000. Aires also agreed to make benchmark payments of up to \$7.2 million, with (a) \$0.3 million related to clinical development milestones in pulmonary arterial hypertension, (b) \$0.1 million related to the issuance of the first U.S. patent in the licensed field of use, and (c) an aggregate of \$6.8 million related to the filing of the first NDA, regulatory approval, and commercial sales of a covered product in pulmonary arterial hypertension. In addition to these benchmark payments, to the extent a covered product is approved for commercial sale, under the NIH License, Aires will pay annual royalties ranging from 4% to 5% of its annual net sales of covered products.

**Critical Accounting Policies and Significant Judgments and Estimates**

Our discussion and analysis of our financial condition and results of operations included in this report is based upon consolidated financial statements and condensed consolidated financial statements that we have prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. The preparation of these financial statements requires us to make a number of estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses in these financial statements and accompanying notes. On an ongoing basis, we evaluate these estimates and assumptions, including those related to determination of the fair value of goodwill and acquired in-process research and development, or IPR&D, and recognition of expenses for clinical study accruals and share-based compensation. We base our estimates on historical information, when available, and assumptions believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities not readily apparent from other sources. Actual results may differ materially from these estimates under different assumptions or conditions.

We believe the following accounting estimates are those that can have a material impact on our financial condition or operating performance and involve substantial subjectivity and judgment in the application of our accounting policies to account for highly uncertain matters or the susceptibility of such matters to change. The following is not intended to be a comprehensive discussion of all of our significant accounting policies. See the notes accompanying our consolidated financial statements appearing in our most recent annual report on Form 10-K for a summary of all of our significant accounting policies and other disclosures required by U.S. GAAP.

***Accrued Research and Development Expenses.*** As part of the process of preparing our financial statements, we are required to estimate our accrued expenses. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. Many of our service providers invoice us monthly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments, if necessary. The majority of our accrued expenses relate to R&D services and related expenses. Examples of estimated accrued R&D expenses include:

fees paid to contract research organizations, or CROs, in connection with clinical studies;

fees paid to investigative sites and investigators in connection with clinical studies;

fees paid to contract manufacturing organizations, or CMOs, in connection with process development activities and production of nonclinical and clinical trial material;

fees paid to vendors in connection with nonclinical development activities; and

fees paid to consultants for regulatory-related advisory services.

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We base our expenses related to CROs and CMOs on our estimates of the services received and efforts expended pursuant to purchase orders or contracts with multiple service providers that we engage to conduct and manage clinical studies and manufacture our clinical trial material on our behalf. The financial terms of our arrangements with our CROs and CMOs are subject to negotiation, vary from contract to contract and may result in uneven payment flows. Payments under some of these contracts depend on factors such as the successful completion of specified process development activities or the successful enrollment of patients and the completion of clinical study milestones. In accruing these service fees, we estimate, as applicable, the time period over which services will be performed (e.g., enrollment of patients, activation of clinical sites, etc.). If the actual timing varies from our estimate, we adjust the accrual accordingly. In addition, there may be instances in which payments made to service providers will exceed the level of services provided and result in a prepayment of R&D expense, which we report as an asset. The actual costs and timing of clinical studies and research-related manufacturing are uncertain and subject to change depending on a number of factors. Differences between actual costs of these services and the estimated costs that we have accrued in a prior period are recorded in the subsequent period in which the actual costs become known to us. Historically, these differences have not resulted in material adjustments, but such differences may occur in the future and have a material impact on our consolidated results of operations or financial position.

***Business Combinations.*** We account for business combinations, such as our acquisitions of SynthRx in April 2011 and Aires Pharmaceuticals in February 2014, in accordance with Accounting Standards Codification, or ASC, Topic 805, *Business Combinations*, which requires the purchase price to be measured at fair value. When the purchase consideration consists entirely of shares of our common stock, we calculate the purchase price by determining the probability-weighted fair value as of the acquisition date of shares issued in connection with the closing of the acquisition and, if applicable, shares issuable upon the occurrence of future events or conditions pursuant to the terms of the agreement governing the business combination. If the transaction involves contingent consideration based on achievement of milestones or earn-out events, our calculation of the purchase price involves probability inputs that are highly judgmental due to the inherent unpredictability of drug development, particularly by development-stage companies such as ours. We recognize estimated fair values of the tangible assets and intangible assets acquired, including IPR&D, and liabilities assumed as of the acquisition date, and we record as goodwill any amount of the fair value of the tangible and intangible assets acquired and liabilities assumed in excess of the purchase price.

***Goodwill and Acquired IPR&D.*** In accordance with ASC Topic 350, *Intangibles – Goodwill and Other*, or ASC Topic 350, our goodwill and acquired IPR&D are determined to have indefinite lives and, therefore, are not amortized. Instead, they are tested for impairment annually and between annual tests if we become aware of an event or a change in circumstances that would indicate the carrying value may be impaired. We perform our annual impairment testing on September 30 of each year. Pursuant to Accounting Standards Update, or ASU, No. 2011-08, *Intangibles – Goodwill and Other (Topic 350): Testing Goodwill for Impairment*, and No. 2012-02, *Intangibles – Goodwill and Other (Topic 350): Testing Indefinite-Lived Intangible Assets for Impairment*, we have the option to first assess qualitative factors to determine whether the existence of events or circumstances leads us to determine that it is more likely than not (that is, a likelihood of more than 50%) that our goodwill or our acquired IPR&D is impaired. If we choose to first assess qualitative factors and we determine that it is not more likely than not goodwill or acquired IPR&D is impaired, we are not required to take further action to test for impairment. We also have the option to bypass the qualitative assessment and perform only the quantitative impairment test, which we may choose to do in some periods but not in others.

If we perform a quantitative assessment of goodwill, we utilize the two-step approach prescribed under ASC Topic 350. Step 1 requires a comparison of the carrying value of a reporting unit, including goodwill, to its estimated fair value. We test for impairment at the entity level because we operate on the basis of a single reporting unit. If our carrying value exceeds our fair value, we then perform Step 2 to measure the amount of impairment loss, if any. In Step 2, we estimate the fair value of our individual assets, including identifiable intangible assets, and liabilities to

determine the implied fair value of goodwill. We then compare the carrying value of our goodwill to its implied fair value. The excess of the carrying value of goodwill over its implied fair value, if any, is recorded as an impairment charge.

If we perform a quantitative assessment of IPR&D, we calculate the estimated fair value of acquired IPR&D by using the Multi-Period Excess Earnings Method, or MPEEM, which is a form of the income approach. Under the MPEEM, the fair value of an intangible asset is equal to the present value of the asset's projected incremental after-tax cash flows (excess earnings) remaining after deducting the market rates of return on the estimated value of contributory assets (contributory charge) over its remaining useful life.

Our determinations as to whether, and, if so, the extent to which, goodwill and acquired IPR&D become impaired are highly judgmental and based on significant assumptions regarding our projected future financial condition and operating results, changes in the manner of our use of the acquired assets, development of our acquired assets or our overall business strategy, and regulatory, market and economic environment and trends.

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***Share-based Compensation Expenses.*** We account for share-based compensation awards granted to employees, including non-employee members of our board of directors, in accordance with ASC Topic 718, *Compensation Stock Compensation*. Compensation expense for all share-based awards is based on the estimated fair value of the award on its date of grant and recognized on a straight-line basis over its vesting period. As share-based compensation expense is based on awards ultimately expected to vest, it is reduced for estimated forfeitures. We estimate forfeitures at the time of grant based on the expected forfeiture rate for our unvested stock options, which is based in large part on our historical forfeiture rates, but also on assumptions believed to be reasonable under the circumstances. We revise our estimates in subsequent periods if actual forfeitures differ from those estimates. Although share-based compensation expense can be significant to our consolidated financial statements, it is not related to the payment of any cash by us.

We estimate the grant date fair value of a stock option award using the Black-Scholes option-pricing model, or Black-Scholes model. In determining the grant date fair value of a stock option award under the Black-Scholes model, we must make a number of assumptions, including the term of the award, the volatility of the price of our common stock over the term of the award, and the risk-free interest rate. Changes in these or other assumptions could have a material impact on the compensation expense we recognize.

## **Results of Operations Overview**

We operate our business and evaluate our company on the basis of a single reportable segment, which is the business of developing therapies for serious or life-threatening diseases.

### ***Revenue***

We have not generated any revenue from product sales to date, and we do not expect to generate revenue from product sales until such time, if any, that we have obtained approval from a regulatory agency to sell one or more of our product candidates, which we cannot predict with certainty will occur.

### ***Operating Expenses***

***Research and Development Expenses.*** We maintain and evaluate our R&D expenses by the type of cost incurred rather than by project. We do this primarily because we outsource a substantial portion of our work and our R&D personnel and consultants work across multiple programs rather than dedicating their time to one particular program. We began maintaining such expenses by type on January 1, 2005. We categorize our R&D expenses as external clinical study fees and expenses, external nonclinical study fees and expenses, personnel costs and share-based compensation expense. The major components of our external clinical study fees and expenses are fees and expenses related to CROs and clinical study investigative sites and investigators. The major components of our external nonclinical study fees and expenses are fees and expenses related to preclinical studies and other nonclinical testing, research-related manufacturing, including process development activities, and quality assurance and regulatory affairs services. Research-related manufacturing expenses include costs associated with producing or purchasing active pharmaceutical ingredient (API), conducting process development activities, producing clinical trial material, producing material for stability testing to support regulatory filings, related labeling, testing and release, packaging and storing services and related consulting fees. Impairment losses on R&D-related manufacturing equipment are also considered research-related manufacturing expenses. Personnel costs relate to employee salaries, benefits and related costs.

A general understanding of drug development is critical to understanding our results of operations and, particularly, our R&D expenses. Drug development in the U.S. and most countries throughout the world is a process that includes several steps defined by the U.S. Food and Drug Administration, or FDA, and similar regulatory authorities in foreign

countries. The FDA approval processes relating to new drug products differ depending on the nature of the particular product candidate for which approval is sought. With respect to any product candidate with active ingredients not previously approved by the FDA, a prospective drug product manufacturer is required to submit a new drug application, or NDA, that includes complete reports of pre-clinical, clinical and laboratory studies and extensive manufacturing information to demonstrate the product candidate's safety and effectiveness. Generally, an NDA must be supported by at least phase 1, 2 and 3 clinical studies, with each study typically more expensive and lengthy than the previous study.

Future expenditures on R&D programs are subject to many uncertainties, including the number of clinical studies required to be conducted for each development program and whether we will develop a product candidate with a partner or independently. At this time, due to such uncertainties and the risks inherent in drug product development and the associated regulatory process, we cannot estimate with any reasonable certainty the duration of or costs to complete our R&D programs, or whether or when or to what extent revenues will be generated from the commercialization and sale of any of our product candidates. The duration and costs of our R&D programs, in particular the duration and costs associated with clinical studies and research-related manufacturing, can vary significantly as a result of a variety of factors, including:

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the number of clinical and nonclinical studies necessary to demonstrate the safety and efficacy of a product candidate in a particular indication;

the number of patients who participate in each clinical study;

the number and location of sites included and the rate of site approval in each clinical study;

the rate of patient enrollment and ratio of randomized to evaluable patients in each clinical study;

the duration of patient treatment and follow-up;

the potential additional safety monitoring or other studies requested by regulatory agencies;

the time and cost to manufacture clinical trial material and commercial product, including process development and scale-up activities, and to conduct stability studies, which can last several years;

the availability and cost of comparative agents used in clinical studies;

the timing and terms of any collaborative or other strategic arrangements that we may establish; and

the cost, requirements, timing of and the ability to secure regulatory approvals.

We regularly evaluate the prospects of our R&D programs, including in response to available scientific, nonclinical and clinical data, our assessments of a product candidate's market potential and our available resources, and make determinations as to which programs to pursue and how much funding to direct to each one.

*Selling, General and Administrative Expenses.* Selling, general and administrative, or SG&A, expenses consist primarily of salaries, benefits and related costs for personnel in executive, finance and accounting, legal and market research functions, and professional and consulting fees for accounting, legal, investor relations, business development, market research, human resources and information technology services. Other SG&A expenses include facility lease and insurance costs.

*Transaction-Related Expenses.* Transaction-related expenses consist of legal, accounting, financial and business development advisory fees associated with the evaluation of potential acquisition targets and execution of acquisition transactions, including our acquisitions of Aires and SynthRx. Transaction-related expenses also include the changes in the fair value of the contingent asset and contingent liability related to our acquisition of SynthRx, which we remeasured as of the end of each quarter until the contingent arrangement was settled.

*Other Income/(Expense), Net.* Other income/(expense), net includes the bargain purchase gain related to the acquisition of Aires, as well as unrealized and realized gains and losses from foreign currency transactions and other

non-operating gains and losses.

### Comparison of Three Months Ended March 31, 2014 and 2013

**Revenue.** We recognized no revenue for the three months ended March 31, 2014 and 2013.

**R&D Expenses.** Our R&D expenses for the three months ended March 31, 2014 consisted primarily of external costs associated with the EPIC study. These expenses consisted primarily of costs associated with CRO and CMO expenses, clinical study-related consulting and study site expenses, which include start-up costs as well as patient costs. The following table summarizes our consolidated R&D expenses by type for each of the periods listed and their respective percent of our total R&D expenses for such periods:

	Three months ended March 31,		January 1, 2005 through		
	2014	%	2013	%	
External clinical study fees and expenses	\$ 2,331,251	55%	\$ 2,308,102	67%	\$ 35,953,061
External nonclinical study fees and expenses	1,086,867	25%	547,351	16%	40,040,376
Personnel costs	803,743	19%	550,331	16%	16,567,284
Share-based compensation expense	58,956	1%	37,128	1%	3,205,562
<b>Total</b>	<b>\$ 4,280,817</b>	<b>100%</b>	<b>\$ 3,442,912</b>	<b>100%</b>	<b>\$ 95,766,283</b>

R&D expenses increased by \$0.9 million, or approximately 24.3%, to \$4.3 million for the three months ended March 31, 2014, compared to \$3.4 million for the same period in 2013. This increase was due primarily to a \$0.5 million increase in external nonclinical study fees and expenses related to manufacturing additional clinical trial material for the EPIC study and our phase 2 study of MST-188 in acute limb ischemia and a \$0.3 million increase in personnel costs. The increase in personnel costs resulted primarily from additional clinical and research-related manufacturing staff hired after the first quarter of 2013.

**Selling, General and Administrative Expenses.** SG&A expenses increased by \$0.2 million, or approximately 7.3%, to \$2.3 million for the three months ended March 31, 2014, compared to \$2.1 million for the same period in 2013. This increase resulted primarily from an increase in personnel costs.

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**Transaction-Related Expenses.** Transaction-related expenses were \$0.3 million for the three months ended March 31, 2014 compared to \$27,500 for the three months ended March 31, 2013. We recognized transaction-related expenses for the three months ended March 31, 2014 related to legal fees associated with the acquisition of Aires. We recognized transaction-related expenses for the three months ended March 31, 2013 due to changes in the fair value at March 31, 2013 relative to December 31, 2012, of the contingent liability related to the consideration for our acquisition of SynthRx. The increase in the fair value of the contingent liability was due to the increase in our stock price at March 28, 2013 (\$0.68 per share), the last trading day of the three months ended March 31, 2013, relative to December 31, 2012 (\$0.57 per share).

**Other Income/(Expense), Net.** Other income/(expense), net for the three months ended March 31, 2014 consisted primarily of a \$0.5 million bargain purchase gain associated with the acquisition of Aires. Other income/(expense), net for the three months ended March 31, 2013 was negligible.

**Net Loss.** Net loss was \$6.4 million, or \$0.06 per share, for the three months ended March 31, 2014, compared to net loss of \$5.6 million, or \$0.12 per share, for the same period in 2013.

**Liquidity and Capital Resources**

We have a history of annual losses from operations and we anticipate that we will continue to incur losses for at least the next several years. For the three months ended March 31, 2014, we incurred a loss from operations of \$6.8 million. Our cash, cash equivalents and investment securities were \$49.6 million as of March 31, 2014. Our investment securities at March 31, 2014 consisted entirely of FDIC-insured certificates of deposit.

We historically have funded our operations principally through proceeds from sales of our equity securities. In June 2013, we completed an underwritten public offering involving the issuance of units consisting of 56,195,000 shares of our common stock and warrants to purchase 28,097,500 shares of our common stock. The warrants have an exercise price of \$0.65 per share and, subject to certain beneficial ownership limitations, are exercisable at any time on or before June 19, 2018. This financing resulted in \$28.1 million in gross proceeds and \$25.7 million in net proceeds, after deducting underwriting discounts and commissions and our other offering expenses.

We may receive up to \$0.8 million, \$6.6 million, \$5.6 million, \$11.7 million and \$18.3 million of additional net proceeds from the exercise of warrants issued in the registered direct equity financings we completed in October 2009, May 2010 and January 2011 and the underwritten public offerings we completed in November 2011 and June 2013, respectively. However, the timing of the exercise and extent to which any of these warrants are exercised before they expire are beyond our control and depend on a number of factors, including certain beneficial ownership limitations and the market price of our common stock. The exercise prices of these warrants are \$3.67, \$3.65, \$2.75, \$1.10 and \$0.65 per share, respectively. In comparison, the closing sale price of our common stock on March 31, 2014 was \$0.68 per share and we do not expect the holders of the warrants to exercise them unless and until our common stock trades at or above the exercise price of their warrants.

In February 2014, we entered into a sales agreement with Cowen and Company, LLC, or Cowen, to sell shares of our common stock, with aggregate gross sales proceeds of up to \$30 million, from time to time, through an at the market equity offering program, or ATM program, under which Cowen acts as sales agent. As of March 31, 2014, we had sold and issued an aggregate of 9,961,655 shares at a weighted-average sales price of \$0.83 per share under the ATM program for aggregate gross proceeds of \$8.3 million and \$7.8 million in net proceeds, after deducting sales agent commission and discounts and our other offering costs.

For a discussion of our liquidity and capital resources outlook, see Management Outlook below.

**Operating activities.** Net cash used in operating activities was \$6.3 million for the three months ended March 31, 2014 and consisted primarily of a net loss of \$6.4 million adjusted for non-cash items, including a gain on bargain purchase of \$0.5 million, which was offset by share-based compensation expenses of \$0.4 million and a net increase due to changes in assets and liabilities of \$0.1 million. Net cash used in operating activities was \$4.5 million for the three months ended March 31, 2013 and consisted primarily of a net loss of \$5.6 million adjusted for non-cash items including share-based compensation expenses of \$0.4 million and a net increase due to changes in assets and liabilities of \$0.7 million. The primary reason for the \$0.7 million change was an increase in accounts payable and accrued liabilities of \$0.6 million, which was primarily due to additional accruals for our thorough QT/QTc clinical study of MST-188 and clinical research-related manufacturing.

**Investing activities.** Net cash provided by investing activities was \$2.5 million for the three months ended March 31, 2014 compared to \$3.4 million for the same period in 2013. The difference of \$0.9 million was due primarily to an increase of \$3.7 million in purchases of certificates of deposit and a decrease of \$0.7 million in proceeds from maturities of certificates of deposits, offset by \$3.5 million in cash obtained in our acquisition of Aires.

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**Financing activities.** Net cash provided by financing activities was \$8.0 million for the three months ended March 31, 2014, representing the gross proceeds from sales of our shares of common stock through our ATM program, less the sales agent commission and offering expenses paid during the period. We expect to pay an additional \$0.2 million in offering expenses during the second quarter. There was no cash used in or provided by financing activities during the three months ended March 31, 2013.

**Management Outlook**

We anticipate that our cash, cash equivalents and investment securities as of March 31, 2014 will be sufficient to fund our currently planned level of operations for at least the next 12 months. However, our estimate of the period of time through which our current financial resources will be adequate to support our operations is a forward-looking statement based on significant assumptions that involve a number of risks and uncertainties and actual results could differ materially. Factors that will affect our future capital requirements include, but are not limited to: the progress and results of our clinical and nonclinical studies of MST-188, particularly the EPIC study and the phase 2 study in acute limb ischemia; the number and nature of indications and jurisdictions in which we pursue development and regulatory approval of MST-188, and the extent to which we do so independently or through collaborations; our development strategy for AIR001; the rate of progress and costs of development and regulatory approval activities associated with our product candidates, including expenses related to initiating and conducting clinical studies and research-related manufacturing expenses; the extent to which we increase our workforce; the extent to which we seek to commercialize and sell our product candidates, if approved, independently or through collaborations; the extent of commercial success of any of our product candidates for which we receive regulatory approval; the costs and timing of establishing commercial manufacturing supply arrangements for our product candidates and establishing or acquiring sales and distribution capabilities for any approved products; and the extent to which we seek to expand our product pipeline through acquisitions and execute on transactions intended to do so.

**MST-188**

We are focusing our resources primarily on development of MST-188. In 2013, we initiated the EPIC study and enrolling subjects in that study is one of our top priorities. We expect to enroll 388 subjects in the study from approximately 70 medical centers—approximately 40 in the U.S. and 30 outside the U.S. At the end of 2013, we had opened 40 U.S. sites and, since then, we have opened clinical sites in multiple jurisdictions outside of the U.S. We expect to have approximately 25 sites open outside of the U.S. by the end of 2014. Although predicting the rate of enrollment for EPIC is subject to a number of significant assumptions and the actual rate may differ materially, we expect to complete enrollment by the end of 2015. We estimate that external clinical study fees and expenses from January 2014 through completion of the EPIC study will be approximately \$16 million.

In addition to enrolling subjects in EPIC, we are conducting activities to evaluate the potential of MST-188 to reduce organ damage and improve survival in patients with sickle cell disease. First, we plan to conduct a sub-study at select EPIC sites to investigate and quantify the effect of MST-188 on microvascular blood flow, indirectly measured by tissue oxygenation using a non-invasive method, and we will evaluate the relationship between tissue oxygenation and clinical outcomes, such as the duration of vaso-occlusive crisis. Approximately 30 patients who are concurrently randomized in EPIC at U.S. study sites will be enrolled in the sub-study. We submitted the protocol for the sub-study to the FDA in 2013 and plan to initiate it during the second quarter of 2014. The estimated external clinical study fees and expenses to conduct the sub-study are included in the estimated cost of EPIC stated above.

We are conducting the pilot phase of a nonclinical study in a transgenic mouse model of sickle cell disease. The objective of this study is to demonstrate that chronic intermittent administration of MST-188 reduces the accumulating burden of organ damage and prolongs survival. The transgenic mice express human sickle hemoglobin and have been

shown to mirror the pathophysiology and disease progression of sickle cell disease typically seen in humans, including development of neuropathy, organ damage and premature death. The results of this study, coupled with the clinical pharmacodynamic data from the EPIC sub-study described above, may provide evidence of MST-188's ability to improve long-term outcomes, where direct evaluation of those outcomes is impractical. We expect to complete this study, including the survival portion, in late 2015.

In March 2014, we initiated a phase 2, clinical proof-of-concept study of MST-188 in combination with rt-PA in acute limb ischemia, or ALI. The study will enroll approximately 60 patients with acute lower limb ischemia from approximately 15 sites within and outside the U.S. and compare a high dose and low dose of MST-188 in combination with rt-PA against rt-PA alone. We estimate that the study will take approximately 18 months to enroll and that external clinical study fees and expenses for the study will be approximately \$4 million. If this phase 2 study in ALI demonstrates that MST-188 improves the clot busting activity of rt-PA, we believe it not only would progress development in that indication, but also generate interest in developing MST-188 in other manifestations of occlusive arterial disease, such as stroke. Therefore, in parallel to the phase 2 study in ALI, we plan to conduct a nonclinical study in an experimental model of thrombotic stroke to evaluate MST-188's potential to expand the window in which rt-PA is effective and improve the therapeutic effect of rt-PA.

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We also are evaluating MST-188's potential in heart failure, another area of significant unmet medical need. Although there have been modest improvements in treatment, acute decompensated heart failure remains associated with high mortality and high hospital admission and readmission rates in patients older than 65 years. In contrast with current treatments, such as vasodilators and beta blockers, which can indirectly improve heart function, MST-188's membrane sealant and hemorheologic activity may directly improve heart contractility and function. Earlier this year, we announced positive results from a randomized, placebo-controlled, nonclinical study of MST-188 in a model of chronic heart failure. Encouraged by those results, we are evaluating options for clinical development of MST-188 in heart failure. We will discuss with the FDA this year our plans to conduct a phase 2, dose-finding, clinical study of MST-188 in patients with heart failure and, if FDA feedback is positive, we expect to initiate the study in the first half of 2015. We are still early in the planning process for the phase 2 clinical study and, as such, cannot forecast with any degree of certainty the study costs. However, in light of anticipated timing of initiation of the study, we do not expect 2014 external clinical study fees and expenses related to the MST-188 heart failure program to be material.

In addition, we are evaluating MST-188's potential in resuscitation following major trauma (i.e., restoration of circulating blood volume and pressure). Based on feedback from U.S. Department of Defense personnel, during 2014, we plan to conduct a nonclinical study of MST-188 in an experimental model of trauma. The results of this study, if positive, may generate further interest from the Department of Defense in evaluating the utility of MST-188 as a resuscitation fluid following major trauma.

Finally, we are conducting or plan to conduct a number of other *ex vivo*, nonclinical *in vivo* and *in vitro* studies of MST-188 to further understand its pharmacologic effects and support our intellectual property positions.

***AIR001***

In February 2014, we acquired Aires Pharmaceuticals, Inc., which is developing AIR001, an intermittently nebulized form of sodium nitrite to treat pulmonary vascular disorders, such as pulmonary hypertension (PH). Over the next several months, we will continue to confer with clinical and regulatory experts in PH and heart disease to define the optimal development strategy for AIR001. In parallel, we will review data, which we expect in the third quarter of 2014, from the approximately 20 subjects who completed treatment in a phase 2 study of AIR001 in pulmonary arterial hypertension, which study Aires had been in the process of closing prior to the acquisition due to capital constraints, and we plan to support expansion of an ongoing, university-sponsored phase 2a study of AIR001 to patients with PH associated with heart failure (WHO Group 2 PH). We estimate that, during the 12-month period following the acquisition of Aires, costs of the AIR001 program, including costs to wind-down the phase 2 studies in PAH, support the expansion of the university-sponsored phase 2a study, Aires personnel costs and consulting fees, will be approximately \$2 million. However, as we refine our development strategy for AIR001 over the next few months, we expect that our initial plans for the program, and, therefore, its estimated costs, will change. In particular, we are aware of other planned investigator-sponsored clinical studies of AIR001 in WHO Group 2 PH patients and we may determine to provide some level of support to those studies and we may also determine to conduct nonclinical studies to support the development of AIR001, which activities could increase our current estimate of program costs.

In parallel with our independent development of MST-188 and AIR001, from time to time, we evaluate opportunities for strategic collaborations, including with respect to country-specific development and regulatory or commercial expertise that would enhance the value of our programs.

Although we anticipate that our cash, cash equivalents and investment securities will be sufficient to fund our operations for at least the next 12 months, we do not anticipate that such capital alone will be sufficient to fund our operations through the successful development and commercialization of our product candidates. In addition, our capital requirements likely will increase in future periods as we progress development of MST-188 in currently

planned indications and potentially pursue its development in additional indications and define our development strategy for AIR001. Further, our capital requirements would likely increase if we were to expand our product pipeline through acquisition of new product candidates and/or technologies. For the foreseeable future, we plan to fund our operations through public or private equity and/or debt financings and through collaborations, including licensing arrangements. Even though we were able to raise significant funds in the recent past through equity financings, adequate additional financing may not be available to us in the future on acceptable terms, on a timely basis, or at all. Our failure to raise capital as and when needed would have a material and adverse effect on our financial condition and ability to pursue our business strategy.

### **Recent Accounting Pronouncements**

See Note 11, Recent Accounting Pronouncements, of the Notes to the Condensed Consolidated Financial Statements (Unaudited) in this report for a discussion of recent accounting pronouncements and their effect, if any, on us.



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**Forward Looking Statements**

This report, particularly in Part I, Item 2, Management's Discussion and Analysis of Financial Condition and Results of Operations, includes 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. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements, including, but not limited to, statements we make regarding our business strategy, expectations and plans, our objectives for future operations and our future financial position. When used in this report, the words believe, may, could, would, will, estimate, continue, anticipate, plan, intend, expect, expressions are intended to identify forward-looking statements. Examples of forward-looking statements include, but are not limited to, statements we make regarding activities, timing and costs related to developing and seeking regulatory approval for our product candidates, including the nature, timing of initiation and completion, and costs of clinical studies and nonclinical testing, the indications in which we plan to pursue development of our product candidates, our plans regarding partnering or other collaborative arrangements and for raising additional capital to support our operations, and our belief that we have sufficient liquidity to fund our currently planned level of operations for at least the next 12 months. The foregoing is not an exclusive list of all forward-looking statements we make.

We have based the forward-looking statements we make on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. The forward-looking statements we make are subject to known and unknown risks and uncertainties that could cause our actual results, performance or achievements to be materially different from any result, performance or achievement expressed or implied by the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to the following:

our ability, or that of a future partner, to successfully develop, obtain regulatory approval for, and then successfully commercialize our product candidates;

delays in the commencement or completion of clinical studies or manufacturing and regulatory activities necessary to obtain regulatory approval to commercialize our product candidates, including MST-188;

suspension or termination of a clinical study, including due to patient safety concerns or capital constraints;

our ability to successfully execute clinical studies, including timely enrollment, and the ability of our product candidates to demonstrate acceptable safety and efficacy in clinical studies;

our ability to maintain our relationships with the single-source third-party manufacturers and suppliers for clinical trial material, including the API and finished drug product, and the ability of such manufacturers and suppliers to successfully and consistently meet our manufacturing and supply

requirements;

the satisfactory performance of third parties, including CROs, on whom we rely significantly to conduct or assist in the conduct of our nonclinical testing, clinical studies and other aspects of our development programs;

our ability to obtain additional capital as needed on acceptable terms, or at all;

the potential for us to delay, scale back, or discontinue development of a product candidate, partner it at inopportune times, or pursue less expensive but higher-risk and/or lower-return development paths if we are unable to raise sufficient additional capital as needed;

the potential for the FDA, or another regulatory agency, to require additional nonclinical or clinical studies of MST-188 in sickle cell disease prior to accepting a new drug application for review or granting regulatory approval, even if the EPIC study is successful;

the potential for the FDA, or another regulatory agency, to require additional nonclinical or clinical studies of MST-188 or AIR001 prior to our initiation of a phase 2 clinical study in any new indication;

the potential that, even if clinical studies of a product candidate in one indication are successful, clinical studies in another indication may not be successful;

the potential for unsuccessful nonclinical or clinical studies in one indication or jurisdiction, or by a future partner that may be outside of our control, to adversely affect opportunities for a product candidate in other indications or jurisdictions;

the potential that we may enter into one or more collaborative arrangements, including partnering or licensing arrangements, for a product candidate, and the terms of any such arrangements;

the extent to which we increase our workforce and our ability to attract and retain qualified personnel and manage growth;

the extent of market acceptance of our product candidates, if we receive regulatory approval, and available alternative treatments;

our ability to protect our intellectual property rights related to our product candidates;

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claims against us for infringing the proprietary rights of third parties;

healthcare reform measures and reimbursement policies that, if not favorable to our products, could hinder or prevent commercial success;

undesirable side effects that our product candidates or products may cause;

potential product liability exposure and, if successful claims are brought against us, liability for a product or product candidate;

the extent to which we acquire new technologies and/or product candidates and our ability to integrate them successfully into our operations;

our ability to maintain compliance with NYSE MKT continued listing standards and maintain the listing of our common stock on the NYSE MKT equities market or another national securities exchange; and

the other factors that are described in Item 1A (Risk Factors) of Part I of our annual report on Form 10-K for the year ended December 31, 2013, filed with the SEC on March 26, 2014.

Except as required by law, we do not intend to update the forward-looking statements discussed in this report 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. In light of these risks and uncertainties and our assumptions, actual results may differ materially and adversely from expectations indicated or implied by the forward-looking statements contained in this report and in any documents incorporated in this report. Accordingly, you are cautioned not to place undue reliance on such forward-looking statements.

**Item 3. Quantitative and Qualitative Disclosures About Market Risk**

Under SEC rules and regulations, as a smaller reporting company we are not required to provide the information required by this item.

**Item 4. Controls and Procedures**

***Evaluation of Disclosure Controls and Procedures***

We maintain disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed by us in the reports we file or submit under the Exchange Act 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 principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can only provide reasonable assurance of achieving the desired control objectives, and in

reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we have evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of March 31, 2014. Based on that evaluation, our principal executive officer and principal financial officer have concluded that as of March 31, 2014 these disclosure controls and procedures were effective at the reasonable assurance level.

***Changes in Internal Control over Financial Reporting***

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) under the Exchange Act that occurred during the quarterly period covered by this report 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**

In the normal course of business, we may become subject to lawsuits and other claims and proceedings. Such matters are subject to uncertainty and outcomes are often not predictable with assurance.

**Item 1A. Risk Factors**

Under SEC rules and regulations, as a smaller reporting company we are not required to provide the information required by this item.

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

In February 2014, we acquired Aires Pharmaceuticals, Inc. through a merger transaction in exchange for shares of our common stock and, on February 28, 2014, pursuant to the terms of the merger agreement, we issued an aggregate of 1,049,706 shares of our common stock to former stockholders of Aires.

The securities described above were offered and sold by us in reliance upon exemptions from the registration requirements of the Securities Act of 1933, as amended, or the Securities Act. Such securities were issued pursuant to Section 4(2) of the Securities Act, and/or Regulation D promulgated thereunder as transactions by an issuer not involving a public offering. The recipients of the securities represented their intention to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to share certificates issued in these transactions. All recipients had adequate access to information about our company.

**Item 3. Defaults Upon Senior Securities**

None.

**Item 4. Mine Safety Disclosures**

Not applicable.

**Item 5. Other Information**

None.

**Item 6. Exhibits**

An Exhibit Index has been attached as part of this report and is incorporated herein by reference.

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**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.

Mast Therapeutics, Inc.

Date: May 5, 2014

By: /s/ Brian M. Culley  
Brian M. Culley

Chief Executive Officer

(Principal Executive Officer)

By: /s/ Brandi L. Roberts  
Brandi L. Roberts

Chief Financial Officer and Senior Vice President

(Principal Financial and Accounting Officer)

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Exhibit No.	Description	Filed Herewith	Incorporated by Reference		Date Filed
			Form	File/Film No.	
2.1	Agreement and Plan of Merger, dated February 7, 2014, by and among the registrant, AP Acquisition Sub, Inc., Aires Pharmaceuticals, Inc. and, solely with respect to Sections 2.8(b) and 6.3 and Article IX, the Stockholders Representative, as amended by the Waiver of Closing Conditions, dated February 26, 2014	X			
10.1	Form of Stockholder Agreement, dated February 7, 2014, by and among the registrant and each of the principal stockholders of Aires Pharmaceuticals, Inc.	X			
10.2	Sales Agreement, dated February 10, 2014, between the registrant and Cowen and Company, LLC		Form 8-K	001-32157-14586244	02/10/14
31.1	Certification of principal executive officer pursuant to Rule 13a-14(a)/15d-14(a)	X			
31.2	Certification of principal financial officer pursuant to Rule 13a-14(a)/15d-14(a)	X			
32.1±	Certification of principal executive officer and principal financial officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X			
101.INS	XBRL Instance Document	X			
101.SCH	XBRL Taxonomy Extension Schema Document	X			
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	X			
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	X			
101.LAB		X			

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XBRL Taxonomy Extension Label  
Linkbase Document

101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	X
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Indicates that confidential treatment has been requested or granted to certain portions, which portions have been omitted and filed separately with the SEC

± These certifications are being furnished solely to accompany this report pursuant to 18 U.S.C. 1350, and are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934 and are not to be incorporated by reference into any filing of the registrant, whether made before or after the date hereof, regardless of any general incorporation by reference language in such filing.