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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): October 31, 2014

Mast Therapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware	001-32157	84-1318182
(State or other jurisdiction of incorporation)	(Commission File Number)	(I.R.S. Employer Identification No.)
12390 El Camino Real, Suite 150, San Diego, California		92130
(Address of principal executive offices)		(Zip Code)

Registrant's telephone number, including area code: 858-552-0866

Not Applicable

Former name or former address, if changed since last report

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

[ ] Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
[ ] Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
[ ] Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
[ ] Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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Item 2.02 Results of Operations and Financial Condition.

On October 31, 2014, Mast Therapeutics, Inc. issued a press release announcing its financial results for the three and nine months ended September 30, 2014. A copy of the press release is furnished as Exhibit 99.1 hereto.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

The list of exhibits called for by this Item is incorporated by reference to the Exhibit Index immediately following the signature page of this report.

The information set forth under Item 2.02 and in Exhibit 99.1 is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934 and is 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 language in any such filing.

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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 hereunto duly authorized.

Mast Therapeutics, Inc.

October 31, 2014

By: /s/ Patrick L. Keran

Name: Patrick L. Keran
Title: President and Chief Operating Officer

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Exhibit Index

Exhibit No.	Description
99.1	Press release, dated October 31, 2014

MAST THERAPEUTICS REPORTS THIRD QUARTER 2014 FINANCIAL RESULTS

SAN DIEGO – October 31, 2014 – Mast Therapeutics, Inc. (NYSE MKT: MSTX), a clinical-stage biopharmaceutical company, today reported financial results for the quarter ended September 30, 2014.

Brian M. Culley, the Company's Chief Executive Officer, said: "The third quarter was productive for Mast. Consistent with prior guidance, our 388-patient pivotal Phase 3 study of MST-188 for sickle cell disease is on track to complete enrollment by the end of next year. We now have opened 50 study sites in the U.S. and more than ten study sites in six countries outside of the U.S."

Mr. Culley continued: "We are further encouraged by the increased attention sickle cell disease is receiving, as evidenced by the FDA's recent press release highlighting its commitment to encouraging development of new SCD treatments as an agency priority and growing attendance at the 3rd Annual Sickle Cell Disease Drug Development Conference, which we hosted during National Sickle Cell Awareness Month in September. We are proud to be a leader in this field with the most advanced new drug in development for patients with sickle cell disease."

"During the quarter, we also announced positive preliminary data from a Phase 2 study of AIR001, which we believe support further clinical development in pulmonary hypertension, and our plans to support multiple, institution-sponsored studies of AIR001 in PH associated with left heart disease."

Upcoming News and Events

- Phase 2 Study (heart failure): submit protocol to FDA Q4 2014
- Nonclinical Study (heart failure): data Q1 2015
- Nonclinical Study (embolic stroke): data Q2 2015
- Phase 2 Study (heart failure): initiate enrollment 1H 2015
- EPIC Extension Study (repeat exposure): initiate enrollment 1H 2015
- Phase 2a Study of AIR001 (WHO Group 2 PH): preliminary data 2H 2015
- Phase 2 Study (heart failure): interim safety analysis 2H 2015
- EPIC Study: complete enrollment Q4 2015
- EPIC Study: top-line data Q1 2016
- Phase 2 Study (acute limb ischemia): complete enrollment 2H 2016

Third Quarter 2014 Financial Results

The Company's net loss for the third quarter of 2014 was $7.9 million, or $0.06 per share (basic and diluted), compared to a net loss of $5.3 million, or $0.05 per share (basic and diluted), for the same period in 2013.

Research and development expenses for the third quarter of 2014 were $5.4 million, an increase of $2.3 million, or 74%, compared to $3.1 million for the same period in 2013. The increase was primarily due to a $1.6 million increase in external clinical study fees and expenses, and a $0.4 million increase in personnel costs.

The $1.6 million increase in external clinical study fees and expenses was due primarily to an increase of $1.1 million related to the EPIC study, an increase of $0.3 million related to our Phase 2 study of MST-188 in acute limb ischemia (ALI), and an increase of $0.1 million related to the wind-down of the phase 2 studies of AIR001 in pulmonary arterial hypertension (PAH). The increase in personnel costs resulted primarily from severance expenses related to the departure of Dr. Vetticaden, the Company's former Chief Medical Officer.

Selling, general and administrative expenses for the third quarter of 2014 were $2.5 million, an increase of $0.3 million, or 14%, compared to $2.2 million for the same period in 2013. The increase resulted primarily from an increase in personnel costs.

Year-to-Date Financial Results

The Company's net loss for the nine months ended September 30, 2014 was $21.4 million, or $0.19 per share (basic and diluted), compared to a net loss of $15.8 million, or $0.23 per share (basic and diluted), for the same period in 2013.

Research and development expenses for the nine months ended September 30, 2014 were $14.5 million, an increase of $5.1 million, or 55%, compared to $9.4 million for the same period in 2013. The increase was primarily due to a $2.7 million increase in external clinical study fees and expenses, a $1.2 million increase in external nonclinical study fees and expenses, and a $1.0 million increase in personnel costs.

The $2.7 million increase in external clinical study fees and expenses was due primarily to an increase of $2.7 million related to the EPIC study, an increase of $1.0 million related to our Phase 2 study of MST-188 in ALI, and an increase of $0.8 million related to the wind-down of the AIR001 studies in PAH, offset by a decrease of $1.8 million related to the thorough QT/QTc clinical study of MST-188 that we completed in 2013. The $1.2 million increase in external nonclinical study fees and expenses is primarily due to an increase of $0.9 million in research-related manufacturing costs for MST-188 and an increase of $0.3 million for research-related manufacturing costs for the wind-down of the AIR001 studies in PAH. The increase in personnel costs resulted primarily from additional clinical and research-related manufacturing staff hired after the first half of 2013 and severance expenses related to the departure of Dr. Vetticaden.

Selling, general and administrative expenses for the nine months ended September 30, 2014 were $7.1 million, an increase of $0.7 million, or 11%, compared to $6.4 million for the same period in 2013. The increase resulted primarily from an increase in personnel costs and consulting expenses.

The Company recognized a $0.5 million bargain purchase gain during the nine months ended September 30, 2014 associated with its acquisition of Aires, which was included in other income.

Balance Sheet Highlights

As of September 30, 2014, the Company had cash, cash equivalents and investment securities totaling $43.1 million. Stockholders' equity amounted to $45.2 million as of September 30, 2014.

About Mast Therapeutics

Mast Therapeutics, Inc. is a publicly traded biopharmaceutical company headquartered in San Diego, California. The Company is leveraging the MAST (Molecular Adhesion and Sealant Technology) platform, derived from over two decades of clinical, nonclinical and manufacturing experience with purified and non-purified poloxamers, to develop MST-188, its lead product candidate, for serious or life-threatening diseases and conditions typically characterized by impaired microvascular blood flow and damaged cell membranes.

The Company is enrolling subjects in EPIC, a pivotal Phase 3 study of MST-188 in sickle cell disease, and in a Phase 2 study to evaluate whether MST-188 improves the effectiveness of recombinant tissue plasminogen activator therapy in patients with acute limb ischemia. The Company also is planning to initiate a Phase 2 clinical study of MST-188 in patients with acute decompensated heart failure in the first half of 2015. More information can be found on the Company's web site at www.masttherapeutics.com. (Twitter: @MastThera)

Forward Looking Statements

Mast Therapeutics cautions you that statements included in this press release that are not a description of historical facts are forward-looking statements that are based on the Company's current expectations and assumptions. Such forward-looking statements include, but are not limited to, statements relating to prospects for successful development of our product candidates, including MST-188 in sickle cell disease, and anticipated timing of achievement of development milestones, including commencement and completion of clinical and nonclinical studies, and of announcement of study data. Among the factors that could cause or contribute to material differences between the Company's actual results and the expectations indicated by the forward-looking statements are risks and uncertainties that include, but are not limited to: the uncertainty of outcomes in ongoing and future studies of the Company's product candidates and the risk that its product candidates, including MST-188, may not demonstrate adequate safety, efficacy or tolerability in one or more such studies, including EPIC; delays in the commencement or completion of clinical studies, including as a result of difficulties in obtaining regulatory agency agreement on clinical development plans or clinical study design, opening trial sites, enrolling study subjects, manufacturing sufficient quantities of clinical trial material, being subject to a "clinical hold," and/or suspension or termination of a clinical study, including due to patient safety concerns or lack of funding; the potential for institutional review boards or the FDA or other regulatory agencies to require additional nonclinical or clinical studies prior to initiation of a planned clinical study of a product candidate; the risk that, even if clinical studies are successful, the FDA or other regulatory agencies may determine they are not sufficient to support a new drug application; 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 Company's reliance on contract research organizations (CROs), contract manufacturing organizations (CMOs), and other third parties to assist in the conduct of important aspects of development of its product candidates, including clinical studies, manufacturing, and regulatory activities for its product candidates, and that such third parties may fail to perform as expected; the Company's ability to obtain additional funding on a timely basis or on acceptable terms, or at all; the potential for the Company to delay, reduce or discontinue current and/or planned development activities, including clinical studies, partner its product candidates at inopportune times or pursue less expensive but higher-risk and/or lower return development paths if it is unable to raise sufficient additional capital as needed; the risk that, even if the Company successfully develops a product candidate in one or more indications, it may not realize commercial success with its products and may never generate revenue sufficient to achieve profitability; the risk that the Company is not able to adequately protect its intellectual property rights relating to the MAST platform and MST-188 or AIR001 and prevent competitors from duplicating or developing equivalent versions of its product candidates; and other risks and uncertainties more fully described in the Company's press releases and periodic filings with the Securities and Exchange Commission. The Company's public filings with the Securities and Exchange Commission are available at www.sec.gov.

You are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date when made. Mast Therapeutics does not intend to revise or update any forward-looking statement set forth in this press release to reflect events or circumstances arising after the date hereof, except as may be required by law.

Contact:
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[Tables to Follow]

Mast Therapeutics, Inc.
Condensed Consolidated Statements of Operations
(In thousands except per share data)

	Three months ended September 30, (Unaudited)		Nine months ended September 30, (Unaudited)	
	2014	**2013**	**2014**	**2013**
Total net revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	5,402	3,102	14,503	9,382
Selling, general and administrative	2,455	2,159	7,091	6,371
Transaction-related expenses	2	—	271	35
Depreciation and amortization	25	10	60	29
Total operating expenses	7,884	5,271	21,925	15,817
Loss from operations	(7,884)	(5,271)	(21,925)	(15,817)
Interest and other income, net	18	17	536	41
Net loss	$ (7,866)	$ (5,254)	$ (21,389)	$ (15,776)
Net loss per share – basic and diluted	$ (0.06)	$ (0.05)	$ (0.19)	$ (0.23)
Weighted average shares – basic and diluted	123,287	102,710	114,709	67,782

Mast Therapeutics, Inc.
Balance Sheet Data
(In thousands)

	September 30, 2014 (Unaudited)	**December 31, 2013**
Cash, cash equivalents and investment securities	$43,074	$44,393
Working capital	36,547	40,695
Total assets	56,164	55,250
Total liabilities	10,915	7,442
Stockholders’ equity	45,249	47,808