November 14, 2017

Molecular Templates, Inc. Reports Third Quarter 2017 Financial Results

Completed Merger with Threshold Pharmaceuticals in August

Recent Equity Financings of $60 Million Provide Cash Runway into late 2019

MT-3724 Advancing in Clinical Trials with New Data Expected in 1H18

AUSTIN, Texas, Nov. 14, 2017 (GLOBE NEWSWIRE) -- Molecular Templates, Inc. (Nasdaq:MTEM), a clinical-stage oncology company focused on the discovery and development of the company's proprietary engineered toxin bodies (ETBs), which are differentiated, targeted, biologic therapeutics for cancer, today reported financial results for the third quarter of 2017. As of September 30, 2017, cash and cash equivalents totaled $68.2 million.

"The completion of our merger with Threshold Pharmaceuticals as well as the $60M in financings in the third quarter mark a significant milestone for Molecular Templates," said Molecular Templates' Chief Executive Officer and Chief Scientific Officer, Eric Poma, Ph.D. "The merger and financings put us in a strong position to continue to execute on the development of our lead program, MT-3724, in aggressive lymphomas as well as make strides toward the clinic in 2018 with our next generation of ETBs currently in preclinical development. Additionally, we are excited about our ongoing research collaboration with Takeda Pharmaceuticals as we look to expand the application of our ETB technology."

Company Highlights and Upcoming Milestones

Corporate

- On August 1, 2017, we successfully completed the reverse merger with Threshold Pharmaceuticals, Inc. (previously Nasdaq ticker: THLD) and concurrently changed the Company's name to Molecular Templates, Inc. (new Nasdaq ticker: MTEM).

- On August 1, 2017, we closed an equity financing for $40 million; as well as a private placement of $20 million to Millennium Pharmaceuticals, Inc., a wholly owned subsidiary of Takeda Pharmaceutical Company Ltd.

MT-3724

- On October 24, 2017, we announced the identification of the maximum tolerated dose (MTD) for MT-3724 and the initiation of and first patient dosed in an expansion cohort, as part of the second portion of the ongoing Phase I study focused on relapsed/refractory diffuse large B-cell lymphoma (DLBCL) patients. The expansion

cohort is expected to better define the overall response rate to MT-3724 in heavily pre-treated DLBCL patients. Initial results of this expansion cohort are expected to be announced in 1H18.

- Molecular anticipates initiating a Phase II monotherapy study in relapsed and refractory DLBCL patients in 2018.

Takeda Collaboration

- Expanded Takeda collaboration in June 2017 with Multi-Target Research and Licensing Collaboration Agreement to develop next-generation oncology therapies, including stock purchase.

MT-4019

- Continued development of MT-4019, an ETB candidate that is designed to target CD38-expressing myeloma cancer cells.
- Plan to submit an IND application to the FDA in mid-2018 to initiate a Phase I clinical trial in the United States.

Research

- Several other ETB candidates in pre-clinical development targeting both solid and hematological cancers where the differentiated mechanism of action innate to ETBs, ribosome inactivation, could play a significant role in treating cancer.

Financial Results

The net loss attributable to common shareholders for the third quarter was $(11.1) million, or $(0.62) per basic and diluted share. This is compared to a net loss attributable to common shareholders for the same period in 2016, of $(3.6) million, or $(11.89) per basic and diluted share. As of September 30, 2017, cash and cash equivalents totaled $68.2 million, which includes $11.2 million received from the merger with Threshold Pharmaceuticals in August 2017 and the receipt of $60 million for two financings that closed on the same day.

Revenues for the third quarter of 2017 were $0.6 million, compared to no revenues during the same period in 2016. Revenues for the third quarter of 2017 related to research and development revenues from our collaboration with Takeda.

Total research and development (R&D) expenses for the third quarter of 2017 were $2.5 million, compared with $2.3 million for the same period in 2016. The $0.2 million increase in R&D expenses in the third quarter of 2017, compared with the same period in 2016, was primarily due to severance benefits related to the merger with Threshold.

Total general and administrative (G&A) expenses for the third quarter of 2017 were $4.0 million, compared with $0.8 million for the same period in 2016. The $3.2 million increase in G&A expenses in the third quarter of 2017, compared with the same period in 2016, was primarily due to costs associated with the Merger and being a publicly traded company.

Revenues for the nine months ended September 30, 2017 were $2.6 million, compared to $1.5 million for the same period in 2016. Revenues for the nine months ended September

30, 2017 were primarily comprised of research and development revenues from our collaboration with Takeda. Revenues for the same period in 2016 comprised of grant revenue from the Cancer Prevention & Research Institute of Texas ("CPRIT").

Total R&D expenses for the nine months ended September 30, 2017 were $4.8 million, compared to $7.2 million for the same period in 2016. The $2.4 million decrease in R&D expenses for the nine months ended September 30, 2017, compared the same period in 2016, was primarily due to decreased spending for outsourced preclinical costs.

Total G&A expenses for the nine months ended September 30, 2017 were $8.2 million, compared to $2.6 million for the same period in 2016. The $5.6 million increase in G&A spending for the nine months ended September 30, 2017, compared to the same period in 2016, was primarily due to costs associated with the Merger and being a publicly traded company.

The net loss attributable to common shareholders for the nine months ended September 30, 2017 was $(17.2) million, or $(2.75) per basic and diluted share, compared to a net loss attributable to common shareholders of $(9.6) million or $(32.01) per basic and diluted share, for the same period in 2016.

About Molecular Templates

Molecular Templates is a clinical-stage oncology company focused on the discovery and development of differentiated, targeted, biologic therapeutics for cancer. We believe our proprietary biologic drug platform technology, referred to as engineered toxin bodies, or ETBs, provides a differentiated mechanism of action that may address some of the limitations associated with currently available cancer therapeutics. ETBs utilize a genetically engineered form of Shiga-like Toxin A subunit, or SLTA, a ribosome inactivating bacterial protein, that can be targeted to specifically destroy cancer cells. Additional information about Molecular Templates can be obtained at http://www.mtem.com.

Forward-Looking Statements

This press release contains forward-looking statements for purposes of the Private Securities Litigation Reform Act of 1995 (the "Act"). Molecular Templates disclaims any intent or obligation to update these forward-looking statements, and claims the protection of the Act's Safe Harbor for forward-looking statements. All statements, other than statements of historical facts, included in this press release regarding strategy, future operations, future financial position, future revenue, projected expenses, prospects, plans and objectives of management are forward-looking statements. In addition, when or if used in this press release, the words "may," "could," "should," "anticipate," "believe," "estimate," "expect," "intend," "plan," "predict" and similar expressions and their variants, as they relate to Molecular Templates may identify forward-looking statements. Examples of such statements include, but are not limited to, statements relating to the development of the Company's lead program, MT-3724; the Company making strides toward the clinic in 2018 with its next generation of ETBs currently in preclinical development; expanding the application of the Company's ETB technology; the Company's expectation that its expansion cohort will better define the overall response rate of MT-3724 in heavily treated DLBCL patients; and the Company's belief that its proprietary biologic drug platform technology, or ETBs, provides for a differentiated mechanism of action that may address some of the

limitations associated with currently available cancer therapeutics.

Forward-looking statements are not guarantees of future performance and involve risks and uncertainties. Actual events or results may differ materially from those discussed in the forward-looking statements as a result of various factors. For a more detailed discussion of the potential risks and uncertainties that may impact their accuracy, see the "Risk Factors" sections in Molecular Templates' filings with the Securities and Exchange Commission. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements reflect our view only as of the date of this press release. We hereby qualify our forward-looking statements by our cautionary statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons that actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

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Molecular Templates, Inc.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)
(unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	**2016**	**2017**	**2016**
Collaboration revenue	$ 648	$ —	$ 2,408	$ —
Grant revenue	—	—	167	1,526
Total revenue	648	0	2,575	1,526
Operating expenses:				
Research and development	2,522	2,271	4,829	7,178
General and administrative	3,996	810	8,233	2,553
Total operating expenses	6,518	3,081	13,062	9,731
Loss from operations	(5,870)	(3,081)	(10,487)	(8,205)
Interest and other income, net	1	6	2	18
Other expense, net	(107)	(118)	(752)	(279)
Change in fair value of warrant liabilities	(272)	1	(269)	2
Loss on conversion of notes	(4,719)	—	(4,719)	—
Net loss	(10,967)	(3,192)	(16,225)	(8,464)
Deemed dividends on preferred stock	(138)	(393)	(958)	(1,179)
Net loss attributable to common shareholders	$ (11,105)	$ (3,585)	$ (17,183)	$ (9,643)
Net loss per share attributable to common shareholders:				
Basic and diluted	$ (0.62)	$ (11.89)	$ (2.75)	$ (32.01)
Weighted average number of shares used in net loss per share calculations:				
Basic and diluted	17,926	301	6,242	301

Molecular Templates, Inc.
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands)
(unaudited)

	September 30, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	$ 68,181	$ 1,716
Accounts receivable	38	—
Prepaid expenses and other current assets	1,363	127
Total current assets	69,582	1,843
Property and equipment, net	963	334
In-process research and development	27,300	—
Goodwill	3,314	—
Intangible assets	1,321	921
Other assets	57	—
Total assets	$ 102,537	$ 3,098
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 3,823	$ 934
Accrued liabilities	1,500	1,210
Current portion of long-term debt	2,348	2,400
Current portion of capital lease obligations	51	36
Related party debt	—	7,315
Deferred revenue	3,585	1,870
Total current liabilities	11,307	13,765
Capital lease obligations, net of current portion	60	53
Warrant liabilities	1,392	49
Deferred rent	145	—
Long-term debt, net of current portion	1,734	3,165
Total liabilities	14,638	17,032
Redeemable convertible preferred stock	—	25,871
Stockholders' equity (deficit):	87,899	(39,805)
Total liabilities and stockholders' equity (deficit)	$ 102,537	$ 3,098

Source: Molecular Templates, Inc.