March 17, 2017

Threshold Pharmaceuticals and Molecular Templates Agree to Combine

-- Transaction to result in Nasdaq-listed company focused on developing novel treatments for cancer --

-- Molecular Templates lead drug candidate being developed to treat non-Hodgkin's Lymphoma (NHL); engineered toxin body (ETB) platform has applications in multiple oncology indications --

-- Combined company will be capitalized to support advancement of MT-3724 through pivotal trial in NHL and evofosfamide through Phase 1b trial at MD Anderson Cancer Center --

-- $20 million investment by leading U.S. venture capital firm at the close of the transaction --

-- Conference call on March 17, 2017 at 8:30 a.m. ET --

SOUTH SAN FRANCISCO, Calif. and AUSTIN, Texas, March 17, 2017 (GLOBE NEWSWIRE) -- Threshold Pharmaceuticals, Inc. (Nasdaq:THLD), a clinical-stage biopharmaceutical company developing novel therapies for cancer, and Molecular Templates, Inc., a privately held biopharmaceutical company, today jointly announced that they have entered into a definitive agreement under which Molecular Templates will merge with a wholly owned subsidiary of Threshold in an all-stock transaction. The transaction will result in a combined company focused on the development of novel treatments for cancer.

Longitude Capital, a U.S. based venture capital firm, will invest $20 million at the close of the transaction, subject to certain conditions, including the receipt of additional equity financing commitments of $20 million.

Molecular Templates' proprietary technology has been used to create a new class of biologic drug candidates known as Engineered Toxin Bodies or ETBs. ETBs have the affinity of an antibody, the ability to induce cellular internalization against non-internalizing receptors, and a novel mechanism of cell-kill (ribosome inhibition) in oncology. Molecular Templates is also using its technology to deliver foreign class I antigens into tumor cells to boost immune recognition of the tumor in a novel approach to immuno-oncology. The Molecular Templates technology has the advantage of being able to generate "off the shelf" therapeutics that do not require patient cell harvesting or transplantation.

Molecular Templates' lead product candidate, MT-3724, is an ETB that targets the CD20 cell surface antigen present in a variety of lymphomas and leukemias. A Phase 1 trial with MT-3724 in relapsed and refractory non-Hodgkin's lymphoma (NHL) has demonstrated good safety and efficacy in elderly, heavily pre-treated patients. In addition to MT-3724, Molecular Templates has preclinical programs targeting HER2 and PD-L1 and has received $15.2 million in new funding commitments from The Cancer Prevention and Research Institute of Texas for its program targeting CD38. Molecular Templates was previously awarded a CPRIT grant for $10.6M that has funded development of its MT-3724 program.

"The merger of our two companies provides Threshold shareholders with a significant equity stake in a biopharmaceutical company with a promising cancer therapy, MT-3724, as well as an innovative and unique technology platform that has generated preclinical drug candidates to treat multiple myeloma, breast cancer and melanoma," said Barry Selick, Ph.D. and Chief Executive Officer of Threshold. "Following an extensive and thorough review of strategic alternatives, we believe this transaction combines promising drug candidates, a solid management team and the resources to create significant value for shareholders and important new cancer therapies for patients."

Eric Poma, Ph.D., Chief Executive Officer of Molecular Templates, commented, "The combined company will have two exciting clinical-stage compounds in evofosfamide and MT-3724 and a unique biological platform with a differentiated mechanism of action in oncology. Longitude's commitment to invest in the company is a strong testament to the promise inherent in the combined companies' clinical assets and technology platform."

Threshold's financial advisor for the transaction is Ladenburg Thalmann & Co. Inc., and Threshold's legal counsel is Cooley LLP. Molecular Templates' legal counsel are Mintz Levin Cohn Ferris Glovsky and Popeo PC and Pillsbury Winthrop Shaw Pittman LLP.

About the Proposed Transaction
On a pro forma basis and based upon the number of shares of common stock to be issued in the merger, current Threshold shareholders would own approximately 34.4 percent of the combined company and current Molecular Templates

shareholders would own approximately 65.6 percent of the combined company although the actual allocation will be subject to adjustment based on Threshold's net cash balance.

Concurrent with the execution of the Merger Agreement, Threshold made a bridge loan to Molecular Templates in the principal amount of $2 million. In the event that the transaction does not close by May 31, 2017, Threshold has agreed to make available further funding of up to $2 million on the same terms upon mutual agreement.

The transaction has been approved by the board of directors of both companies. The merger is expected to close in the second quarter of 2017, subject to the approval of the stockholders of each company as well as other customary conditions.

Management and Organization
Eric Poma, Ph.D., Molecular Templates' Chief Executive Officer, will become Chief Executive Officer of the combined company. Following the Merger, the board of directors of the Company will consist of seven seats and will be comprised of two representatives of Molecular Templates; two representatives of the Company, and three representatives to be mutually agreed upon by Molecular Templates and the Company, with the Company's current chairman of the board of directors, Barry Selick, Ph.D., continuing to act as chairman of the board of the Company following the Merger.

Upon closing of the transaction, Threshold will change its name to Molecular Templates, Inc. and plans to change its ticker symbol on the Nasdaq Capital Market to MTEM.

Conference Call and Webcast
Drs. Poma and Selick will host a conference call and simultaneous webcast to discuss the proposed transaction on March 17, 2017, at 8:30 a.m. Eastern Time. The webcast can be accessed on Threshold's website in the Investors/Webcasts section http://investor.thresholdpharm.com/events.cfm. Alternatively, please call 877-397-0286 (U.S.) or 719-325-4745 (international). The conference ID number is 9853266. The webcast will be archived on Threshold's website for at least 30 days.

About Evofosfamide
Evofosfamide (previously known as TH-302) is an investigational hypoxia-activated prodrug of a bis-alkylating agent that is preferentially activated under severe hypoxic tumor conditions, a feature of many solid tumors. Areas of low oxygen levels (hypoxia) in solid tumors are due to insufficient blood vessel supply. Similarly, the bone marrow of patients with hematological malignancies has also been shown, in some cases, to be severely hypoxic. A Phase 1 clinical trial evaluating evofosfamide in combination with the immune checkpoint antibody, ipilumumab, is about to commence at the M.D. Anderson Cancer Center in Houston Texas. At the same time, while the PMDA has just indicated that the current analysis of the MAESTRO data is not sufficient to support the submission of a New Drug Application ("NDA") in Japan, the Company is in ongoing discussions with the PMDA to clarify the scope of an additional study, the results of which may then support the submission of an NDA for evofosfamide in Japan.

About Threshold Pharmaceuticals
Threshold is a clinical-stage biopharmaceutical company focused on the development of drugs and diagnostic agents targeting the tumor microenvironment of solid tumors and hematologic malignancies. This approach offers broad potential to treat a variety of cancers. By selectively targeting tumor cells, we are building a pipeline of drugs that hold promise to be more effective and less toxic to healthy tissues than conventional anticancer drugs. For additional information, please visit the Company's website at www.thresholdpharm.com.

About MT-3724
MT-3724 is Molecular Templates' lead drug candidate. MT-3724 completed a Phase 1 clinical trial in heavily pre-treated non-Hodgkin's lymphoma patients at the Memorial Sloan-Kettering Cancer Center, the MD Anderson Cancer Center, the Lineberger Comprehensive Cancer Center at the University of North Carolina, and the University of Arizona. An expansion arm of the Phase 1 study focused on relapsed and refractory diffuse large lymphoma patients is enrolling. More information is available at clinicaltrials.gov.

About Molecular Templates
Molecular Templates is focused on the discovery, development, and commercialization of next-generation immunotoxins called Engineered Toxin Bodies (ETBs) for the treatment of cancers and other serious diseases. Santè Ventures is the lead equity investor in Molecular Templates; Excel Venture Management and AJU IB Life Sciences Overseas Expansion Platform Fund are also equity investors in Molecular Templates. For additional information, please visit the Company's website at www.mtem.com.

Important Information For Investors And Stockholders
This communication may be deemed to be solicitation material in respect of the proposed transaction between Threshold Pharmaceuticals, Inc. (Threshold) and Molecular Templates, Inc. (Molecular Templates) and Molecular Templates stockholders. In connection with the proposed transaction between Threshold and Molecular Templates and its

stockholders, Threshold will file with the Securities and Exchange Commission (SEC) a registration statement containing a proxy statement of Threshold that will also constitute a prospectus of Threshold. Threshold will mail the proxy statement/prospectus to Threshold stockholders, and the securities may not be sold or exchanged until the registration statement becomes effective. **THRESHOLD URGES INVESTORS AND STOCKHOLDERS TO READ THE PROXY STATEMENT/PROSPECTUS REGARDING THE PROPOSED TRANSACTION WHEN IT BECOMES AVAILABLE, AS WELL AS OTHER DOCUMENTS FILED OR THAT WILL BE FILED WITH THE SEC, BECAUSE THEY CONTAIN OR WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED TRANSACTION.** This communication is not a substitute for the registration statement, definitive proxy statement/prospectus or any other documents that Threshold may file with the SEC or send to Threshold stockholders in connection with the proposed transaction. Before making any voting decision, investors and security holders are urged to read the registration statement, proxy statement/prospectus and all other relevant documents filed or that will be filed with the SEC in connection with the proposed transaction as they become available because they will contain important information about the proposed transaction and related matters.

You may obtain free copies of the proxy statement/prospectus and all other documents filed or that will be filed with the SEC regarding the proposed transaction at the website maintained by the SEC www.sec.gov. Once they are filed, copies of the registration statement and proxy statement/prospectus will be available free of charge on Threshold's website at www.thresholdpharm.com or by contacting Threshold's Investor Relations at 510.703.9491 or by mail at Investor Relations, Threshold Pharmaceuticals Inc., 170 Harbor Way, Suite 300, South San Francisco, California 94080.

Participants in Solicitation
Threshold, Molecular Templates and their respective directors and executive officers may be deemed to be participants in the solicitation of proxies from the holders of Threshold common stock in connection with the proposed transaction. Information about Threshold's directors and executive officers is set forth in Threshold's Annual Report on Form 10-K/A for the period ended December 31, 2015, which was filed with the SEC on March 10, 2016. Other information regarding the interests of such individuals, as well as information regarding Molecular Templates' directors and executive officers and other persons who may be deemed participants in the proposed transaction, will be set forth in the proxy statement/prospectus, which will be included in Threshold's registration statement when it is filed with the SEC. You may obtain free copies of these documents as described in the preceding paragraph.

Non-Solicitation
This communication shall not constitute an offer to sell or the solicitation of an offer to sell or the solicitation of an offer to buy any securities, nor shall there be any sale of securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. No public offer of securities shall be made except by means of a prospectus meeting the requirements of Section 10 of the Securities Act of 1933, as amended.

Forward-Looking Statements
Certain statements in this communication regarding the proposed merger and other contemplated transactions (including statements relating to satisfaction of the conditions to and consummation of the proposed merger, the expected ownership of the combined company, the alternatives to the proposed merger, and plans with respect to financing for the combined company) constitute "forward-looking statements" within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act and are usually identified by the use of words such as "anticipates," "believes," "estimates," "expects," "intends," "may," "plans," "projects," "seeks," "should," "will," and variations of such words or similar expressions. We intend these forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act and Section 21E of the Securities Exchange Act and are making this statement for purposes of complying with those safe harbor provisions. These forward-looking statements reflect our current views about our plans, intentions, expectations, strategies and prospects, which are based on the information currently available to us and on assumptions we have made. Although we believe that our plans, intentions, expectations, strategies and prospects as reflected in or suggested by those forward-looking statements are reasonable, we can give no assurance that the plans, intentions, expectations or strategies will be attained or achieved. Furthermore, actual results may differ materially from those described in the forward-looking statements and will be affected by a variety of risks and factors that are beyond our control.

Risks and uncertainties for Threshold and Molecular Templates and of the combined company include, but are not limited to: inability to complete the proposed merger and other contemplated transactions in connection with the merger; liquidity and trading market for shares prior to and following the consummation of the proposed merger and proposed financing; costs and potential litigation associated with the proposed merger; failure or delay in obtaining required approvals by the SEC or any other governmental or quasi-governmental entity necessary to consummate the proposed merger, including our ability to file an effective proxy statement in connection with the proposed merger and other contemplated transactions in connection with the merger, which may also result in unexpected additional transaction expenses and operating cash expenditures on the parties; a failure to satisfy the conditions to the closing of the proposed investment by Longitude Capital, which would require the Company to raise additional funds sooner than expected to pursue its development goals; an inability or delay in obtaining required regulatory approvals for product candidates, which may result in unexpected cost expenditures; the price of the proposed financing transaction in connection with the proposed merger and contemplated

transactions in connection with the merger being materially lower than the trading price of Threshold's common stock at the time of such financing; risks inherent in drug development in general; uncertainties in obtaining successful clinical results for product candidates and unexpected costs that may result therefrom; failure to realize any value of certain product candidates developed and being developed in light of inherent risks and difficulties involved in successfully bringing product candidates to market; inability to develop new product candidates and support existing products; the approval by the FDA, EMA and PMDA and any other similar foreign regulatory authorities of other competing or superior products brought to market; risks resulting from unforeseen side effects; risk that the market for the combined company's products may not be as large as expected; inability to obtain, maintain and enforce patents and other intellectual property rights or the unexpected costs associated with such enforcement or litigation; inability to obtain and maintain commercial manufacturing arrangements with third party manufacturers or establish commercial scale manufacturing capabilities; loss of or diminished demand from one or more key customers or distributors; unexpected cost increases and pricing pressures; continuing or deepening economic recession and its negative impact on customers, vendors or suppliers; failure to obtain the necessary stockholder approvals or to satisfy other conditions to the closing of the proposed merger and the other contemplated transactions; a superior proposal being submitted to either party; uncertainties of cash flows and inability to meet working capital needs; cost reductions that may not result in anticipated level of cost savings or cost reductions prior to or after the consummation of the proposed merger; and risks associated with the possible failure to realize certain benefits of the proposed merger, including future financial, tax, accounting treatment, and operating results. Many of these factors that will determine actual results are beyond Threshold's, Molecular Templates', or the combined company's ability to control or predict.

Other risks and uncertainties are more fully described in periodic filings with the Securities and Exchange Commission (the "SEC"), including the factors described in the section entitled "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 filed with the SEC, and in other filings that Threshold makes and will make with the SEC in connection with the proposed transactions, including the proxy statement described above under "Important Information and Where to Find It." Existing and prospective investors are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. The statements made in this press release speak only as of the date stated herein, and subsequent events and developments may cause our expectations and beliefs to change. Unless otherwise required by applicable securities laws, we do not intend, nor do we undertake any obligation, to update or revise any forward-looking statements contained in this news release to reflect subsequent information, events, results or circumstances or otherwise. While we may elect to update these forward-looking statements publicly at some point in the future, we specifically disclaim any obligation to do so, whether as a result of new information, future events or otherwise, except as required by law.

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Source: Threshold Pharmaceuticals, Inc.