May 15, 2020

New Data on Molecular Templates' Engineered Toxin Bodies to be Presented at the American Association of Cancer Research (AACR) Virtual Annual Meeting II

Abstracts feature data on ETBs against clinically validated targets including PD-L1, CTLA-4, SLAMF7 and CD45

AUSTIN, Texas,, May 15, 2020 (GLOBE NEWSWIRE) -- Molecular Templates, Inc. (Nasdaq: MTEM, "Molecular Templates," or "MTEM"), a clinical-stage biopharmaceutical company focused on the discovery and development of the Company's proprietary targeted biologic therapeutics, engineered toxin bodies (ETBs), today announced that new preclinical data on its pipeline programs and technology platform will be presented at the AACR Virtual Annual Meeting II to take place June 22-24, 2020. All four posters are expected to be available on the AACR website on June 22, 2020.

Title:	**In Vivo Efficacy of a PD-L1 Targeted, Antigen Seeding Engineered Toxin Body**
Authors:	Hilario J. Ramos, Brigitte Brieschke, Sara LeMar, Joseph D. Dekker, Aimee Iberg, Garrett L. Robinson, Asis Sarkar, Banmeet Anand, Melissa M. Singh, Jay Zhao, Jack P. Higgins, Erin K. Willert. Molecular Templates Inc., Austin, TX
Session:	Immunology: Therapeutic Antibodies 2
Abstract #	3366

MT-6402 is a highly differentiated approach to immuno-oncology. MT-6402 target PD-L1 and has been shown in preclinical studies to induce three unique biological effects:

- Unlike current checkpoint inhibitors which bind PD-L1 and block interactions, MT-6402 directly destroys PD-L1+ tumor cells
- MT-6402 can deliver foreign viral antigens into the target tumors to uniquely alter their immunophenotype to make them visible to CMV-reactive CD8+ T-cells
- MT-6402 clears PD-L1+ immune cells and thereby potently activates the immune system

Non-human primate (NHP) data presented at the AACR meeting show that MT-6402 mediated PD-L1+ immune cell clearance can elicit highly potent monotherapy immune activation in a way that has not been seen previously in NHP models with checkpoint inhibitors.

Title:	**CTLA-4 Targeted Engineered Toxin Bodies Designed to Deplete Regulatory T Cells (Tregs)**
Authors:	Aimee Iberg, Edith Acquaye-Seedah, Lilia A. Rabia, Garrett L. Robinson, Hilario J. Ramos, Joseph D. Dekker, Jay Zhao, Erin K. Willert. Molecular Templates Inc., Austin, TX
Session:	Immunology: Therapeutic Antibodies 1
Abstract #	2278

Tumor resident regulatory T cells (Tregs) are important mediators of an immunosuppressive tumor microenvironment (TME) promoting tumor immune evasion. The presence of Tregs, and a higher ratio of Tregs to effector T cells in the TME, are associated with poor prognosis. There is concern that antibodies to CTLA-4 are not sufficiently effective at clearing Tregs from the TME. ETBs are being developed to specifically target CTLA-4+ Tregs and clear them from the TME. The clearance of Tregs in the TME is expected to re-expose the tumor to the immune system to allow for tumor control. Because CTLA-4-targeted ETBs preferentially affect Tregs versus CTLA-4+ CD8 T-cells, ETBs may also have a safer profile than CTLA-4 antibodies.

Title:	**Novel Engineered Toxin Bodies Targeting SLAMF7 (CS1)**
Authors:	Aimee Iberg, Garrett L. Cornelison, Caleigh Howard, Garrett L. Robinson, Jay Zhao, Hilario J. Ramos, Erin K. Willert. Molecular Templates Inc., Austin, TX
Session:	Experimental and Molecular Therapeutics: Antibody Technologies
Abstract #	539

SLAMF7 (CS1) is a clinically validated target of monoclonal antibody therapy for the treatment of multiple myeloma. The approved antibody-based therapeutic, elotuzumab, works indirectly by recruiting effector cells to the tumor but does not show single agent clinical activity. ETBs have the potential to deplete malignant cells by means of potent and direct cell kill through enzymatic ribosomal destruction.

Title:	**CD45 Targeted Engineered Toxin Bodies Deplete Hematopoietic and Malignant Cells**
Authors:	Aimee Iberg, Garrett L. Robinson, Sara LeMar, Joseph D. Dekker, Jay Zhao, Hilario J. Ramos, Melissa M. Singh, Erin K. Willert. Molecular Templates Inc., Austin, TX
Session:	Experimental and Molecular Therapeutics: Antibody Technologies
Abstract #	521

CD45, the leucocyte common antigen, is a haemopoietic cell-specific tyrosine phosphatase. Targeted and potent ETBs with intrinsically short half-lives are being developed to specifically destroy CD45 expressing cells including malignant cells of B, T and myeloid lineage. A single agent, targeted conditioning method for bone marrow transplant (BMT), employing ETBs, has the potential to increase patient safety and eliminate genotoxic effects that are associated with existing conditioning regimens.

About Molecular Templates

Molecular Templates is a clinical-stage company focused on the discovery and development of targeted biologic therapeutics. Our proprietary drug platform technology, known as engineered toxin bodies, or ETBs, leverages the resident biology of a genetically engineered form of Shiga-like Toxin A subunit to create novel therapies with potent and differentiated mechanisms of action for cancer and other serious diseases.

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 MT-3724, MT-5111, TAK-169, and MT-6402; the expected timing of submitting various IND applications and conducting studies; 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 including, but not limited to, the uncertainties inherent in the preclinical and clinical development process; risks from global pandemics including COVID-19; whether the Company's cash resources will be sufficient to fund its continuing operations for the periods and/or trials anticipated; the ability of the Company to protect its intellectual property rights; and legislative, regulatory, political and economic developments, as well as those risks identified under the heading "Risk Factors" in the Company's filings with the SEC. Any forward-looking statements contained in this press release speak only as of the date hereof, and the Company specifically disclaims any obligation to update any forward-looking statement, whether because of new information, future events or otherwise.

Contact:
Adam Cutler
Chief Financial Officer
adam.cutler@mtem.com
862-204-4006

Source: Molecular Templates, Inc.