



Unum Therapeutics Announces Strategic Focus on Developing Best-in-Class Cellular Therapies for Solid Tumor Cancers

November 4, 2019

- Solid tumor cancers represent the greatest unmet medical need for targeted cell therapies; Unum's goals are to more selectively target solid tumors with its ACTR platform candidates and improve T cell functionality in the solid tumor microenvironment with its BOXR platform candidates -
- Priorities moving forward include completing its ongoing Phase 1 trial with ACTR707 in HER2+ cancers, filing an IND for BOXR1030, and expanding its BOXR platform for further pipeline expansion -
- Company to deemphasize hematologic programs with plans for limited dose-escalation in Phase 1 non-Hodgkin lymphoma trial and suspension of Phase 1 multiple myeloma trial -
- Conference call scheduled for today at 4:30 p.m. EDT -

CAMBRIDGE, Mass., Nov. 04, 2019 (GLOBE NEWSWIRE) -- Unum Therapeutics Inc. (NASDAQ: UMRX), a clinical-stage biopharmaceutical company focused on developing curative cell therapies for cancer, today announced a strategic shift to focus development on its ACTR and BOXR product candidates in solid tumors and supportive platform capabilities.

"We are uniquely positioned to address the challenge of treating solid tumor cancers, and now is the time to focus our efforts, having recently validated our ACTR technology in the hematologic setting and with preclinical data emerging from BOXR1030, the first product candidate from our BOXR platform. Our ACTR technology enables selective T cell targeting for on-tumor attack, while our BOXR platform makes it possible to overcome solid tumor immunosuppression, the fundamental challenge that has limited the effectiveness of cell therapies," said Chuck Wilson Ph.D., President and Chief Executive Officer of Unum. "Our priorities in solid tumors include completing the ongoing Phase 1 trial of ACTR707 in HER2+ cancers; advancing BOXR1030 towards the clinic with an anticipated IND filing in 2020; and expanding our BOXR platform to accelerate discovery of new product candidates across a broad range of immune cell therapies, including both autologous and allogeneic approaches."

ACTR707 was engineered for properties that optimize its function in solid tumors including increased proliferation, cytokine secretion, and persistence. With Unum's focus on developing therapies for solid tumors, the company will de-prioritize investment in its hematologic programs. Testing through the first four dose levels in the ongoing ATTCK-20-03 Phase 1 trial in non-Hodgkin lymphoma has now established proof-of-concept for ACTR707. Given favorable tolerability to date at relatively low doses, Unum is announcing today plans to continue limited dose escalation to inform potential future development of the program in 2020.

Separately, Unum and its partner, Seattle Genetics, Inc., have suspended further dose-escalation of the ATTCK-17-01 Phase 1 trial of ACTR087 with SEA-BCMA in multiple myeloma pending a further review of this program. No dose-limiting toxicities (DLTs) following ACTR087 administration were reported and no severe adverse events of cytokine release syndrome (CRS) or neurologic events have been observed to date.

Solid Tumor Program Highlights

- **Phase 1 ATTCK-34-01 Trial: ACTR707 combined with trastuzumab to treat advanced HER2+ solid tumor cancers.** Five clinical sites are now activated to support the Phase 1 trial that is currently enrolling patients. Unum expects to report preliminary safety data from patients treated in the first dose cohort of the trial by the end of this year and to report safety and clinical response data from multiple dose cohorts in 2020.
- **BOXR1030: Incorporating the GOT2 transgene and targeting GPC3+ solid tumor cancers.** Unum's first product candidate selected from its Bolt-On Chimeric Receptor (BOXR) platform, BOXR1030, continues to progress towards first-in-human clinical trials. BOXR1030 expresses a glypican-3 (GPC3) targeted chimeric antigen receptor (CAR) and leverages the "bolt-on" transgene glutamic-oxaloacetic transaminase 2 (GOT2) to improve T cell function in the solid tumor microenvironment by enhancing T cell metabolism. Preclinical studies have characterized the mechanism of action of BOXR1030's bolt-on transgene with further details to be presented at the upcoming Society for Immunotherapy of Cancer (SITC) conference during November 6-10, 2019. Based on recent progress, Unum now plans to file an investigational new drug (IND) application for BOXR1030 in late 2020, enabling subsequent clinical testing in GPC3+ cancers.
- **BOXR Platform Expansion:** Unum's BOXR platform was established over two years ago with the aim of discovering novel transgenes that can be co-expressed with chimeric-targeting receptors to improve the function of T cells in the solid tumor microenvironment. As part of its strategic shift to target solid tumors, Unum will be scaling up its BOXR platform capabilities with the objectives of: (1) expanding the scope of biological mechanisms and transgenes in its proprietary BOXR library, (2) enabling BOXR bolt-on applications for a broad range of immune cell therapies, including both autologous and allogeneic approaches, and (3) advancing new BOXR product candidates into the clinic.

Hematologic Program Highlights

- **Phase 1 ATTCK-20-03 trial: ACTR707 combined with rituximab for relapsed/refractory non-Hodgkin lymphoma.** As a preliminary update provided today for the six patients treated in Cohort 4 (80M ACTR707+ T cells), complete response was achieved at the first response assessment in two of six patients as of the October 2019 analysis, yielding a complete response rate of 40% (eight of 20 patients) in Cohorts 1 through 4. Of the eight complete responders, four remained in complete response at six months of follow-up, two remain in complete response but have not yet reached the six-month timepoint for evaluation, and two progressed before the six-month timepoint. In Cohorts 1 through 4, ACTR707 was well-tolerated in combination with rituximab. No DLTs, no adverse events of CRS, and no severe neurological adverse events including neurotoxicity have been reported as of the October 2019 cutoff. Further results will be presented at the American Society for Hematology (ASH) Annual Meeting during December 7-10, 2019. Unum plans to enroll up to two additional cohorts (three to four patients per cohort) in the trial, escalating the maximum dose up to 180M ACTR707+ T cells. With patient screening and planned dosing underway, Unum plans to report preliminary results from this dose escalation during 2020. The ability to differentiate on both efficacy and safety relative to currently available therapies and those in development from these additional cohorts will drive a decision during 2020 whether to advance the program into an expanded dose cohort and potential pivotal studies.
- **Phase 1 ATTCK-17-01 trial: ACTR087 combined with SEA-BCMA for relapsed/refractory multiple myeloma.** Two additional cohorts of patients have been treated in the Phase 1 trial in 2019, escalating doses of the SEA-BCMA antibody to 2.0 mg/kg and of the ACTR087+ T cells to 50M. Unum and Seattle Genetics have suspended further dose-escalation of the trial and are reviewing the next steps with this program.

Investor Call and Webcast Information

Unum will host a live conference call and webcast today, November 4, 2019, at 4:30 p.m. ET, to discuss these company updates. To access the call, please dial 866-300-3411 (domestic) or 636-812-6658 (international) and refer to conference ID number 2177408. A webcast will be available at unumrx.com at least 10 minutes before the event begins. The archived webcast will be available at the same location approximately two hours after the event and will be archived for 90 days.

About Unum Therapeutics

Unum Therapeutics is a clinical-stage biopharmaceutical company focused on developing curative cell therapies to treat a broad range of cancer patients. Unum's novel proprietary technologies include Antibody-Coupled T cell Receptor (ACTR), an autologous engineered T-cell therapy that combines the cell-killing ability of T cells and the tumor-targeting ability of co-administered antibodies to exert potent antitumor immune responses, and Bolt-On Chimeric Receptor (BOXR), designed to improve the functionality of engineered T cells by incorporating a "bolt-on" transgene to overcome resistance of the solid tumor microenvironment to T cell attack. Unum has multiple programs in Phase 1 clinical testing and preclinical testing, including; ACTR707 used in combination with trastuzumab in adult patients with HER2+ advanced cancer and used in combination with rituximab in adult patients with r/r NHL; and BOXR1030 expressing the GOT2 transgene and targeting GPC3+ solid tumor cancers. The Company is headquartered in Cambridge, MA.

Follow Unum Therapeutics on social media: [@UnumRx](https://twitter.com/UnumRx), and [LinkedIn](https://www.linkedin.com/company/unum-therapeutics).

Forward looking Statements

This press release contains forward-looking statements including, without limitation, statements regarding our future expectations, plans and prospects, including projections regarding future revenues and financial performance, our long-term growth, enrollment and results for our preclinical and clinical activities, the development of our product candidates, including the ACTR product candidates and the BOXR platform and product candidates, our plans for the ATTCK-17-01 Phase 1 trial, and the anticipated timing and success of any of our preclinical studies, clinical trials and regulatory filings, as well as other statements containing the words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "might," "plan," "potential," "predict," "project," "should," "target," "will," or "would" and similar expressions, constitute forward-looking statements within the meaning of the safe harbor provisions of The Private Securities Litigation Reform Act of 1995, as amended. We may not actually achieve the forecasts disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results could differ materially from the projections disclosed in the forward-looking statements we make as a result of a variety of risks and uncertainties, including risks related to the accuracy of our estimates regarding expenses, future revenues, capital requirements, and the need for additional financing, the success, cost and timing of our product development activities and clinical trials, our ability to obtain and maintain regulatory approval for our product candidates, and the other risks and uncertainties described in the "Risk Factors" sections of our public filings with the Securities and Exchange Commission. In addition, the forward-looking statements included in this press release represent our views as of the date hereof. We anticipate that subsequent events and developments may cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we specifically disclaim any obligation to do so. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date hereof.

Investor Contact:

Stern Investor Relations, Inc.
Stephanie Ascher, 212-362-1200
stephanie@sternir.com

Media Contact:

Lissette Steele, 202-930-4762
lsteele@vergescientific.com



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