



Study published in Cell Metabolism Reveals New Therapeutic Approach Aimed at Restoring Vascular Health and Reversing Age-Related Eye Disease

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Study shows that senescent cells accumulate in the eye of patients with diabetic retinopathy, and elimination of these cells in preclinical models ameliorates disease

Researchers at UNITY Biotechnology and University of Montreal provide mechanistic evidence supporting potential for vascular regeneration in retinal diseases

SOUTH SAN FRANCISCO, Calif., Feb. 08, 2021 (GLOBE NEWSWIRE) -- UNITY Biotechnology, Inc. ("UNITY") [NASDAQ: UBX], a biotechnology company developing therapeutics to slow, halt or reverse diseases of aging, today announced new preclinical research that reveals a novel mechanism for treating age-related eye diseases – such as diabetic retinopathy and diabetic macular edema – by restoring vascular health in the retina. One of the limitations of current standards of care for vascular diseases of the retina is that they target both sick and healthy parts of the eye and hence can lead to significant side-effects. By selectively eliminating the senescent cells accumulating in diseased blood vessels of the eye, researchers identified a way to target diseased vasculature while leaving healthy blood vessels intact, thus enabling the retina to repair itself. The study is featured in the April issue of the peer-reviewed journal *Cell Metabolism* and is currently [available online](#).

A team of scientists from UNITY and University of Montreal demonstrated that diseased blood vessels in the retina trigger molecular pathways associated with aging, collectively termed [cellular senescence](#). The authors used a combination of animal models and human samples to identify a molecular target, called Bcl-xL, that is highly expressed in diseased retinal blood vessels. Targeting these senescent cells with a single dose of UNITY's Bcl-xL small molecule inhibitor led to selective elimination of diseased vasculature, while enabling functional, healthy blood vessels to reorganize and regenerate.

"In this study, we showed that diseased blood vessels in retinopathy are characterized by senescent cells and that vasculature can be restored through senolytic therapeutics, in this case a novel Bcl-xL inhibitor," said Przemyslaw (Mike) Sapieha, Ph.D., a lead author of the paper. "These findings suggest that Bcl-xL inhibition has the potential to selectively target diseased retinal blood vessels, while sparing healthy ones and promoting more functional vasculature in the eye."

According to the National Eye Institute, diabetic retinopathy is the most prominent complication of diabetes and the leading cause of blindness in working age individuals. They estimate that ~8 million Americans are afflicted by the eye disease and predicts the incidence will double over the next 15 years. In diabetic retinopathy, small calibre blood vessels feed the back of the eye (retina), degenerate and re-grow in an abnormal manner. These "new" vessels obstruct light and can leave scars in the retina.

UNITY is currently conducting a Phase 1 clinical trial of UBX1325, a small molecule inhibitor of Bcl-xL, for the treatment of diabetic macular edema, a common complication of diabetic retinopathy. Initial results from the study are expected in the first half of 2021.

"Bcl-xL inhibition may be the key to a new class of neovascular retinal medicine, in which a targeted treatment allows the retina to repair itself while eliminating diseased vasculature," said Anirvan Ghosh, chief executive officer of UNITY. "These findings support the role cellular senescence plays in age-related eye diseases and that senolytic medicines may provide not only a viable strategy for promoting vasculature health, but an important new treatment option for these debilitating diseases."

The paper, titled "Pathological angiogenesis in retinopathy engages cellular senescence and is amenable to therapeutic elimination via BCL-xL inhibition," is co-authored by a team of scientists from the University of Montreal and UNITY Biotechnology. The senior authors are Dr. Sapieha who recently joined UNITY as chief scientific advisor, and Pam Tsuruda, Ph.D., of UNITY.

About UNITY

UNITY is developing a new class of therapeutics to slow, halt or reverse diseases of aging. UNITY's current focus is on creating medicines to selectively eliminate or modulate senescent cells and thereby provide transformative benefit in age-related ophthalmologic and neurologic diseases. More information is available at www.unitybiotechnology.com or follow us on [Twitter](#) and [LinkedIn](#).

Forward-Looking Statements

This press release contains forward-looking statements including statements related to UNITY's understanding of cellular senescence and the role it plays in diseases of aging, the potential for UNITY to develop therapeutics to slow, halt or reverse diseases of aging, including for ophthalmologic and neurologic diseases, the potential for UNITY to successfully commence and complete clinical studies of UBX1325 for diabetic macular edema and other ophthalmologic diseases, the expected timing of initial results of the Phase 1 study of UBX1325 in diabetic macular edema, and UNITY's expectations regarding the sufficiency of its cash runway. These statements involve substantial known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements, including the risk that the COVID-19 worldwide pandemic may continue to negatively impact the development of preclinical and clinical drug candidates, including delaying or disrupting the enrollment of patients in clinical trials. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking

statements we make. The forward-looking statements in this press release represent our views as of the date of this release. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this release. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to the business of the Company in general, see UNITY's most recent Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, filed with the Securities and Exchange Commission on November 4, 2020, as well as other documents that may be filed by UNITY from time to time with the Securities and Exchange Commission.

Media

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