ACUCELA

Press Release

Acucela Signs Agreement to Develop a Compact OCT for NASA's Deep Space Missions

SEATTLE (March 17, 2019) — Acucela Inc. ("Acucela"), a clinical-stage ophthalmology company and wholly-owned subsidiary of Kubota Pharmaceutical Holdings Co., Ltd. (Tokyo 4596), announced today that the company signed the agreement with the Translational Research Institute for Space Health (TRISH) to develop a compact OCT*1 device for NASA's Deep Space missions.

Approximately 63% of long-duration spaceflight crewmembers present with one or more signs of Spaceflight Associated Neuro-ocular Syndrome (SANS), including optic disc edema, globe flattening, choroidal folds, cotton wool spots, and refractive shifts. OCT has become a mainstay of crew testing for SANS because it allows accurate measurement of retinal thickness and cross-sectional imagery of the retina and optic disc. This in combination with other tests provides the necessary data to diagnose, monitor, and eventually treat SANS.

The commercially available off-the-shelf (COTS) OCT devices currently deployed to the International Space Station (ISS) are not suitable for Lunar, Martian and other expeditionary space travel. These commercial systems are complex, too large, not radiation hardened, and contain features that are not necessary for diagnosing and monitoring the anatomic effects of SANS.

By using a unique approach, we are able to create a solid-state OCT yielding high resolution imagery. The final flight-ready device will allow NASA to replace current COTS OCT devices with smaller, lighter, easier to use, durable and radiation hardened instruments that are practical for use in smaller spacecrafts, while providing required image quality from astronauts during flight.

Ryo Kubota, a visiting professor at Keio University School of Medicine, MD, PhD, and Chairman, President and CEO of Acucela stated, "I am very excited to be able to take part in NASA's efforts as a principal investigator with expeditionary space travel. Using our technology, we will endeavor to build a durable, hand-held OCT device for use during space flight, to help safeguard crewmembers' health."

*1 OCT (Optical Coherence Tomography) is a non-invasive tool that uses light waves to take cross-section pictures of the retina.

About Acucela Inc.

Acucela Inc. is a wholly-owned subsidiary of Kubota Pharmaceutical Holdings Co., Ltd. (Tokyo 4596) committed to translating innovation into a diverse portfolio of drugs and devices to preserve and restore vision for millions of people worldwide. Acucela's development pipeline include drug candidates for the treatment of diabetic retinopathy, diabetic macular edema, Stargardt disease, age-related macular degeneration, cataracts and presbyopia, and, optogenetics-based gene therapy for the treatment of retinitis

pigmentosa. The company is also developing a handheld OCT device for the monitoring of neovascular retinal diseases, to be used directly by patients. http://www.acucela.com; http://www.kubotaholdings.co.jp/en/

About the Translational Research Institute for Space Health

Partnering with the NASA Human Research Program through a cooperative agreement, the Translational Research Institute for Space Health (TRISH) funds transformative human health technologies to predict, protect, and preserve astronaut physical and mental health during deep space exploration missions. The institute is a consortium led by Baylor College of Medicine and includes the California Institute of Technology and the Massachusetts Institute of Technology. www.bcm.edu/spacehealth

Cautionary Statements

Certain statements contained in this press release are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. Any statements contained in this press release that are not statements of historical fact may be deemed to be forward-looking statements. These forward-looking statements include statements regarding our expectations related to our development plans and ability to successfully develop and commercialize our product candidates and the potential efficacy, future development plans and commercial potential of our product candidates. These statements are based on current assumptions that involve risks, uncertainties and other factors that could cause the actual results, events or developments to differ materially from those expressed or implied by such forward-looking statements. These risks and uncertainties, many of which are beyond our control, include, but are not limited to: our investigational product candidates may not demonstrate the expected safety and efficacy; our pre-clinical development efforts may not yield additional product candidates; any of our or our collaborators' product candidates may fail in development, may not receive required regulatory approvals, or may be delayed to a point where they are not commercially viable; our clinical trials could be delayed; new developments in the intensely competitive ophthalmic pharmaceutical market may require changes in our clinical trial plans or limit the potential benefits of our investigational product candidates; the impact of expanded product development and clinical activities on operating expenses; adverse conditions in the general domestic and global economic markets; as well as the other risks identified in our filings with the Securities and Exchange Commission. These forward-looking statements speak only as of the date hereof and we assume no obligation to update these forward-looking statements, and readers are cautioned not to place undue reliance on such forward-looking statements. For a detailed discussion of the foregoing risks and other risk factors, please refer to our

filings with the Securities and Exchange Commission, which are available on Kubota Pharmaceutical Holdings (Acucela's parent company) investor relations website (http://www.kubotaholdings.co.jp/en/ir/) and on the SEC's website (http://www.sec.gov).

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