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### **Acucela's Paper Published in Experimental Eye Research**

**Bothell, WA – October 16, 2007** Acucela Inc., a clinical stage biotech company discovering new drug therapies for eye diseases, published a paper in *Experimental Eye Research* (Exp. Eye. Res. 2007, 85(1): 154-165). The paper, authored by a number of Acucela scientists, is entitled "Protective Effects of Myricetin and Related Flavonols Against A2E and Light Mediated-Cell death in Bovine Retinal Primary Cell Culture."

The paper describes how Acucela's proprietary OcuScreen™ assays established efficacies of myricetin and structurally-related flavonols in protecting retinal cells from light and A2E stresses. CEO Dr. Ryo Kubota commented that "these data suggest that OcuScreen™ could identify potential leads for the development of a new generation of molecules for clinical application in retinal diseases associated with photoreceptor cell death. Apart from this publication, we have proven that OcuScreen™ results have a very good correlation with *in vivo* efficacy, and we look forward to using this assay for internal drug discovery, as well as collaboration with partners. We can use this assay to screen drugs of known mechanism of action or for random screening to identify drugs with new mechanism of action."

Dr. Aicha Laabich, a senior scientist at Acucela and first author of the paper noted, "We know that photoreceptors are particularly susceptible to excessive light exposure and A2E toxicity. The discovery of compounds that protect photoreceptors from light- and A2E-induced cell death would provide an important approach in the identification of Dry AMD treatment. We examined the effects of three flavonols (myricetin, quercetin and kaempferol) in cultured retinal cells stressed with blue-light or lipofuscin component A2E. We found that all three compounds similarly protected photoreceptors from A2E induced stress. On the other hand, only myricetin was able to fully protect photoreceptors from photic injury. The potential involvement of apoptosis in these two stress models was also studied using caspase-3 inhibitor. We have demonstrated that light and A2E-induced cell death are mediated through different pathways. The data provide evidence that myricetin prevents light- and A2E-induced photoreceptor death using OcuScreen™ assays."

#### **About Acucela**

Acucela Inc. is focused on developing new drug therapies for eye diseases, and particularly neurodegenerative retinal diseases such as macular degeneration. The company has proprietary disease-specific assays and technologies to identify and develop compounds that can safely and effectively treat retinal diseases and injuries. The company's novel approaches have significant therapeutic potential to treat retinal diseases such as Age-related Macular Degeneration (AMD), Stargardt's disease, and glaucoma, which affect 50 million people worldwide. The Bothell-based company was founded in 2002. For more information, please visit <http://www.acucela.com>.

#### **About OcuScreen™**

Acucela's proprietary OcuScreen™ technology utilizes primary retinal cell cultures to discover novel therapeutic compounds for the treatment of dry macular degeneration. Acucela is expanding the scope of its OcuScreen™ technology to discover therapeutic agents for glaucoma and the potential retinal toxicity of compounds.

#### **Acucela Forward-Looking Statement**

This press release contains "forward-looking statements" as that term is defined in the Private Securities Litigation Reform Act of 1995. These statements involve risks and uncertainties, which may cause results to differ materially from those set forth in the statements. The forward-looking statements include statements regarding product development. No forward-looking statement can be guaranteed, and actual results may differ materially from those projected. Acucela undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events, or otherwise.

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