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**Acucela's Novel Visual Cycle Modulator Demonstrates Promise as a
Treatment for Dry Age-Related Macular Degeneration**

**Dry AMD is a Leading Cause of Blindness in People Over 50;
Novel Oral Treatment, ACU-4429, to be Highlighted at Aegean Retina XI Meeting**

BOTHELL, Wash. (June 23, 2009) – Acucela, a clinical-stage biotechnology company focused on developing new treatments for blinding eye diseases, announced today that data on the company's novel visual cycle modulator, ACU-4429, a potential oral treatment for dry age-related macular degeneration (AMD), will be featured at the Aegean Retina XI Meeting being held in Crete, Greece from July 3 to 5, 2009. Dry AMD is a leading cause of vision loss in people over the age of 50, yet there are no therapies currently approved to treat this condition.

“Over the next 20 years, the population of Americans over age 65 is expected to double. With this rapidly aging society, it is critical to address the significant unmet needs in treating blinding eye diseases associated with aging to ultimately prevent vision loss and blindness,” stated Ryo Kubota, M.D., Ph.D., president and chief executive officer of Acucela and discoverer of the gene that causes glaucoma. “Dry AMD is a particularly concerning disease related to aging, yet there are currently no approved therapies to treat dry AMD. We believe our approach to visual cycle modulation will offer new hope to patients suffering from this condition.”

AMD occurs in “dry” and “wet” forms, which together are estimated to affect more than 29 million people worldwide, according to a 2007 Visiongain report. This number is expected to double in the next 20 years due to the aging population. About 90 percent of AMD patients – or 26 million people – suffer from dry AMD, a degenerative disease that affects the part of the retina responsible for fine visual acuity and color vision.

ACU-4429 utilizes Acucela's proprietary visual cycle modulation (VCM) technology, and is designed to prevent or inhibit the generation of naturally toxic by-products of the visual cycle that can lead to degenerative eye conditions like dry AMD. In preclinical studies ACU-4429 has demonstrated the ability to selectively target the human eye's rod system (responsible for night vision ability) while leaving the cone system (responsible for day vision ability) unaffected. In doing so, ACU-4429 is able to successfully reduce the activity of the rod system – even when not being used for night vision, rod cells are critical to human sight, sending essentially unused information to the brain and creating toxic by-products – and decrease the rate of toxic by-product accumulation. Importantly, ACU-4429 is administered to patients as an oral, daily pill rather than by injection into the eye, which is typical of many current eye therapeutics.

Dr. Kubota will provide initial data from Acucela's Phase 1 clinical trial to assess safety, tolerability and effectiveness of ACU-4429 for the treatment of dry AMD. The data being presented at the Aegean Retina meeting were also featured at the Association for Research in Vision and Ophthalmology (ARVO) 2009 Annual Meeting and demonstrate the safety and tolerability of ACU-4429 in healthy volunteers aged 55-80. In addition, the data demonstrate a dose-dependent modulation of the visual cycle using electroretinography (ERG), an established eye test in the evaluation of response and recovery of the retina that is used to help diagnose disease.

“During the ERG test, the cells of the retina (the rods and cones) produce tiny amounts of electricity in response to brief flashes of light. The ERG test enables us to track those retinal cells' response and recovery from these flashes of light to determine exactly how the rod and cone cells are functioning as part of the visual cycle,” stated Dr. Kubota. “The ERG results achieved in this study suggest that ACU-4429 may effectively slow the rod visual cycle and therefore may have potential for treating a broad range of degenerative eye conditions. These data are exciting as they confirm what we've seen in our preclinical studies and mark the first time that a non-retinoid therapeutic in a convenient pill form has effectively targeted the visual cycle in a dose-dependent manner.”

Enrollment in the Phase 1 trial of ACU-4429 was completed in June 2009 and complete data from this trial are expected in the fourth quarter of this year. Based on the promising results obtained in the Phase 1 trial, Acucela plans to enter into a Phase 1b and then a Phase 2 trial of ACU-4429 later this year.

About the Aegean Retina Meeting XI

After its foundation almost 20 years ago by Evangelos Gragoudas, M.D., of the Massachusetts Eye and Ear Infirmary, Harvard Medical School, and Ioannis Pallikaris, M.D., Ph.D., Professor of Ophthalmology at the University of Crete, Greece, the Aegean Retina Meeting continues its tradition of exciting clinical and research presentations combined with lively discussion. Noteworthy presentations have included one of the first presentations on PDT therapy, as well as one the first presentations concerning anti-VEGF therapy for wet AMD. This year's 11th biannual meeting is being held in Chania, Crete and features topics such as Advances in Vitreoretinal Diseases, Diagnostics, Pharmacotherapy, Surgical Instrumentation and Basic Research. For more information about the conference, visit www.aegeanretina.gr.

About ACU-4429

ACU-4429 utilizes Acucela's proprietary visual cycle modulation (VCM) technology, and is designed to prevent or inhibit the generation of toxic by-products of the visual cycle that can lead to degenerative eye conditions like dry AMD. Preclinical data indicate that ACU-4429 slows the rod visual cycle, resulting in decreased accumulation of a toxic by-product that is the precursor of lipofuscin, which are deposits of toxic substances. The chronic accumulation of lipofuscin has been implicated in degenerative retinal diseases. ACU-4429 is administered to patients as an oral, daily pill rather than by injection into the eye, which is typical of many current eye therapeutics.

About Acucela Inc.

Acucela Inc. is a clinical-stage biotechnology company focused on leveraging promising science in visual cycle modulation (VCM) to develop new methods for treating blinding eye diseases that affect tens of millions of people worldwide. The company's orally-delivered VCM therapies, which selectively target cells within the retina to protect visual acuity, have the potential to be used to treat several devastating eye diseases, including dry age-related macular degeneration (AMD), retinopathy of prematurity, Stargardt disease and diabetic retinopathy. Acucela is also developing, with Otsuka Pharmaceutical, Rebamipide ophthalmic suspension, which is a Phase 3 product candidate for dry eye. For more information, please visit www.Acucela.com.

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