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Oculus Innovative Sciences Announces Results From Anti-Inflammatory Study Using Microcyn(R) Technology

PETALUMA, Calif.--(BUSINESS WIRE)--

Oculus Innovative Sciences, Inc. (NASDAQ:OCLS) today announced that International Immunopharmacology has published results from a company-sponsored study evaluating the impact of the Microcyn(R) Technology, a super-oxidized oxychlorine compound, on degranulation and cytokine release in mast cells. A reprint of the study can be viewed online: <http://www.oculusis.com/articles/mastcells.pdf>.

It is well established that studies on mast cell physiology are useful in identifying possible therapeutic targets for allergic/inflammatory diseases. Inflammation, often associated with certain open wounds, can delay wound healing if not controlled.

The study explored the effects of Microcyn Technology on the activation and secretion processes of mucosal-type murine bone-marrow-derived mast cells after Fc(epsilon)RI triggering using IgE-antigen. Data compiled by the study researchers at the pharmacobiology department of Cinvestav and at the cell therapy unit at the National Institute of Rehabilitation, both in Mexico City, suggest that Microcyn(R) super-oxidized solution may inhibit the cell machinery for secretion of histamine and pro-inflammatory molecules induced by IgE-antigen receptor crosslinking in vitro.

Cells were incubated in serial dilutions of Microcyn(R) for a short period of time before being activated. The in vitro test results showed that a single application of Microcyn(R) inhibited degranulation of mast cells for up to 12 hours without affecting the cell's viability or other normal physiological processes.

The results suggest that Microcyn inhibits mast cells from releasing histamine and cytokines, which are the primary catalysts in inducing inflammation. "This is an exciting finding since it further describes Microcyn Technology's mode of action within the wound bed, which distinguishes our technology from others in the market," said Hoji Alimi, Oculus founder and CEO.

"Since Microcyn(R) interfered with the secretory pathway of mast cells without inhibiting gene expression or synthesis of proteins, it could be considered a "true" mast cell stabilizer," said Dr. Claudia Gonzalez-Espinosa, one of the paper's authors.

Dr. Andres Gutierrez, director of medical affairs for Oculus, added, "Identifying the mechanism of action of Microcyn relative to mast cells could further define novel targets in the intricate pathways that are dysregulated by mast cell degranulation." The fact that Microcyn is a pH-neutral solution is important because any potential applications would likely

involve the skin and very sensitive tissues in the nose, eyes, oral cavity, lungs and peritoneal cavity.

About Mast Cells

Mast cells are present in most tissues in the vicinity of blood vessels, and are especially prominent near the boundaries between the outside world and the body's internal systems. These boundary areas include the skin, mucosa of the lungs and digestive tract, as well as in the mouth, conjunctiva and nose.

In allergic reactions, mast cells remain inactive until an allergen, such as the saliva of the mosquito or the pollen of ragweed, binds to the IgE antibody (Immunoglobulin E), which is already present on the exterior of the mast cell. Once this occurs, a chain reaction is set in motion.

When activated, a mast cell rapidly releases its characteristic granules and various hormonal mediators into the interstitium. These include preformed mediators (such as histamine), newly formed lipid mediators and pro inflammatory cytokines.

Histamine dilates blood vessels, makes them leaky, and activates the endothelium. This leads to local edema (swelling), warmth, redness, and the attraction of other inflammatory cells to the site of release. It also irritates nerve endings (leading to itching or pain). Cutaneous signs of histamine release are the "flare and wheal" reaction. The bump and redness immediately following a mosquito bite are a good example of this reaction, which occurs seconds after challenge of the mast cell by an allergen.

The allergic reaction of the mast cells is oftentimes beneficial in that it helps to prevent infection and even promote healing of injured tissues. However, problems occur when the mast cells overreact thus creating allergic and chronic inflammatory diseases.

About Oculus

Oculus Innovative Sciences is a biopharmaceutical company that develops, manufactures and markets a family of Microcyn Technology-based products intended to help prevent and treat infections in chronic and acute wounds. Oculus' platform technology, called Microcyn, is a non-irritating, small molecule oxychlorine compound that is designed to treat a wide range of pathogens, including antibiotic-resistant strains of bacteria, viruses, fungi and spores.

Oculus' principal operations are in Petaluma, California, and it conducts operations in Europe, Latin America and Japan through its wholly owned subsidiaries, Oculus Innovative Sciences Netherlands B.V., Oculus Technologies of Mexico, S.A. de C.V. and Oculus Japan K.K. Oculus' website is www.oculusis.com.

Forward-Looking Statements

Except for historical information herein, some matters set forth in this press release are forward-looking within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, including statements about our ability to replicate the results of the test in clinical trials, if at all, or for such trials or other tests to establish the conclusions suggested by the results of the test. These forward-looking statements are identified by the use of words such as "suggest," "could involve," "could be considered," "intended," and

"designed," among others. These forward-looking statements are based on Oculus Innovative Sciences, Inc.'s current expectations. Investors are cautioned that such forward-looking statements in this press release are subject to certain risks and uncertainties inherent in the Company's business including risks inherent in the development and commercialization of potential products, the risk that scientific data may not be sufficient to meet regulatory standards or receipt of required regulatory clearances or approvals, the Company's future capital needs, and its ability to obtain additional funding and other risks detailed from time to time in the Company's filings with the Securities and Exchange Commission including the quarterly report on Form 10-Q for the quarter ended December 31, 2006 and Form 10-K for the fiscal year ended March 31, 2007. Oculus Innovative Sciences disclaims any obligation to update these forward-looking statements.

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Source: Oculus Innovative Sciences, Inc.