



**For Immediate Release**

## **Argos Therapeutics Publishes Approach to Improving Dendritic Cell-Based Immunotherapy**

**-Paper Published in the *Journal of Immunotherapy*-**

**DURHAM, N.C. – October 9, 2008** – Argos Therapeutics today announced the publication of a paper in the October 2008 issue of the *Journal of Immunotherapy* demonstrating that the Company's process of maturing dendritic cells (DC) electroporated with antigen-encoded messenger RNA (mRNA) is capable of driving long-term, stable expansion of cytolytic antigen-specific T cells that express effector/memory phenotype. These T cells also exhibited much higher functional activity, suggesting improved T cell avidity. This approach is part of the Company's Arcelis™ technology, a proprietary platform for creating personalized immunotherapies for HIV, other infectious diseases, and cancer.

IL-12 is the primary cytokine that can influence the development of cell-mediated immunity, and one of the most potent inducers of IL-12 from maturing DCs is the combination of IFN- $\gamma$  and the agonistic ligand to CD40. Additionally, it has been shown that sequential rather than simultaneous delivery of inflammatory and CD40L signals can influence the immunopotency of mature dendritic cells. With this in mind, Argos researchers compared four different protocols for maturing DCs electroporated with antigen-encoding mRNA. Only DCs receiving a combination of inflammatory signals (TNF- $\alpha$  and IFN- $\gamma$ ), to partially mature the cells, followed by CD40 stimulation via electroporation with CD40L mRNA (PME-CD40L process) drove the long-term expansion of cytolytic, antigen-specific T cells that displayed effector/memory phenotype.

"Dendritic cells are the most effective antigen-presenting cells, and they require the appropriate maturation and activation signals to optimally present antigens to T cells in order to drive a pro-inflammatory immune response," said Charles Nicolette, Ph.D., Chief Scientific Officer of Argos. "Argos' approach of generating DCs electroporated with CD40L RNA, combined with the appropriate timing for delivery of the inflammatory signal, was able to deliver the instruction set needed to induce the long-term expansion of antigen-specific cells with strong cytolytic activity. This process generates a potent pro-inflammatory CTL response that provides further validation for dendritic cell-based immunotherapies with the potential to achieve clinically meaningful treatments for infectious diseases and cancer."

The abstract, titled, "*Cytokine maturation followed by CD40L mRNA electroporation results in a clinically relevant dendritic cell product capable of inducing a potent pro-inflammatory CTL response*," was authored by David M. Calderhead, Mark A. DeBenedette, Helen Ketteringham,

Alicia H. Gamble, Joe M. Horvantinovich, Irina Y. Tcherepanova, Charles A. Nicolette and Don G. Healey.

**About the Arcelis™ Technology**

Arcelis is Argos' proprietary technology for personalizing RNA-loaded dendritic cell immunotherapies for HIV, other infectious diseases, and cancer. This platform is based on optimizing a patient's own (autologous) dendritic cells to trigger a pathogen- or tumor-specific immune response. To address the challenge of the unique genetic profile of each patient's disease and the genetic mutations of that disease, Argos loads the autologous dendritic cells with a sample of messenger RNA ("mRNA") isolated from their disease. Through this process, dendritic cells can potentially prime immune responses to the entire antigenic repertoire, resulting in an immunotherapeutic that is customized to the patient's specific disease. The development of Arcelis is part of Argos' broad collaboration with Kyowa Hakko Kirin Co., Ltd.

**About Argos Therapeutics, Inc.**

*Argos is an immunotherapy company developing new treatments for cancer, infectious and autoimmune diseases, and transplantation rejection. The Company has generated multiple platform technologies and a diverse pipeline of products based on its expertise in the biology of dendritic cells - the master switch that turns the immune system on or off.*

[www.argostherapeutics.com](http://www.argostherapeutics.com)

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