



Mechanism of Action for Vical's Vaxfectin(R) Adjuvant Expands Potential Applications

SAN DIEGO, Jan. 7, 2010 (GLOBE NEWSWIRE) -- Vical Incorporated (Nasdaq:VICL) announced today that systematic in vivo testing of the company's Vaxfectin(R) adjuvant shows that it increased antibody and T-cell responses primarily by stimulating the immune system rather than simply increasing vaccine uptake. The results, published in the journal *Vaccine*(1), validate encouraging results with the Vaxfectin(R) adjuvant in prior animal and human studies, and position Vaxfectin(R) as a potential "universal" adjuvant for a broad range of vaccines.

"Vaxfectin(R) has significantly enhanced immune responses in a variety of vaccine applications," said Alain P. Rolland, Pharm.D., Ph.D., Vical's Executive Vice President of Product Development, "and we designed these experiments to provide greater clarity regarding the specific mechanism of action driving these enhanced responses. We were very pleased with the results generated by the relatively new technique of gene expression profiling, which systematized the process of confirming Vaxfectin(R)'s functionality. Our new insights regarding its mechanism of action expand the opportunities to apply Vaxfectin(R) as a universal adjuvant with DNA-, protein- and peptide-based vaccines."

Vaxfectin(R) has been shown in multiple animal models to dramatically increase the antibody and T-cell immune responses to antigens expressed from plasmid DNA vaccines. Results from two Phase 1 clinical trials of Vaxfectin(R)-formulated H5N1 influenza DNA vaccines demonstrated strong antibody responses and achieved T-cell responses in 75% to 100% of subjects in various dose cohorts. Vaxfectin(R) has demonstrated similar effect with protein-based vaccines, and the formulation can be adjusted to favor specific immune responses.

The current study involved expression profiling in mice as well as real-time PCR and flow cytometry. Using DNA microarrays of 39,000 transcripts, the analyses showed a significant increase in genes involved in antigen processing and presentation, apoptosis and innate immunity pathways. In addition, local and systemic levels of cytokines driving both antibody and T-cell responses were increased. Immunohistochemistry of injected muscles also revealed an increase of infiltrated macrophages as early as 24 hours after administration.

About Vical

Vical researches and develops biopharmaceutical products based on its patented DNA delivery technologies for the prevention and treatment of serious or life-threatening diseases. Potential applications of the company's DNA delivery technology include DNA vaccines for infectious diseases or cancer, in which the expressed protein is an immunogen; cancer immunotherapeutics, in which the expressed protein is an immune system stimulant; and cardiovascular therapies, in which the expressed protein is an angiogenic growth factor. The company is developing certain infectious disease vaccines and cancer therapeutics internally. In addition, the company collaborates with major pharmaceutical companies and biotechnology companies that give it access to complementary technologies or greater resources. These strategic partnerships provide the company with mutually beneficial opportunities to expand its product pipeline and address significant unmet medical needs. Additional information on Vical is available at www.vical.com.

The Vical Incorporated logo is available at <http://www.globenewswire.com/newsroom/prs/?pkgid=5768>

This press release contains forward-looking statements subject to risks and uncertainties that could cause actual results to differ materially from those projected, including: whether Vaxfectin(R) can successfully be used as a universal adjuvant for a broad range of vaccines; whether Vical or others will pursue development of any Vaxfectin(R)-formulated vaccine candidates; whether any vaccine candidates will be safe and tolerable, or effective in eliciting immune responses; whether results in mouse studies will be predictive of results in human studies; whether formulation with Vaxfectin(R) will increase vaccine effectiveness or drive a particular type of immune response; whether any product candidates will be shown to be safe and effective in clinical trials; the timing, nature and cost of clinical trials; whether Vical or its collaborative partners will seek or gain approval to market any product candidates; whether Vical or its collaborative partners will succeed in marketing any product candidates; and additional risks set forth in the company's filings with the Securities and Exchange Commission. These forward-looking statements represent the company's judgment as of the date of this release. The company disclaims, however, any intent or obligation to update these forward-looking statements.

(1) Vilalta A et al. Analysis of biomarkers after intramuscular injection of Vaxfectin(R)-formulated hCMV gB plasmid DNA. *Vaccine* 2009; 27(52):7409-7417.

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