



## **Immune Design Announces the Grant of Two Principle Technology Patents and a Recent Publication in the Proceedings of the National Academy of Sciences.**

SEATTLE, WA -- (GLOBE NEWSWIRE)—Immune Design today announced that the United States Patent and Trademark Office (USPTO) has granted two patents covering both of the Company's principal technologies; GLA, a synthetic vaccine adjuvant, and ID-LV, a novel vector engineered to selectively target human dendritic cells and enhance the potency and duration of the induced cellular immune response.

Immune Design is an exclusive licensee of both U.S. 8,273,361, having broad claims that cover any vaccine that incorporates GLA as an adjuvant, as well as U.S. 8,273,345, having claims focused on use of ID-LV for delivery of cancer antigens, which is the Company's first clinical indication for the technology. These patents have terms that expire in 2028, and 2027 respectively.

"These granted patents represent an important milestone for Immune Design," stated Carlos Paya, M.D., Ph.D., Immune Design's president and chief executive officer. "Immune Design's goal is to protect the commercial potential of our technologies as we advance products into the clinic. These patents validate the novelty of our breakthrough technologies".

GLA is a clinical stage synthetic Toll Receptor 4 agonist that –in isolation- activates dendritic cells *in vivo* and is a potent inducer of a Th1 type immune response. When combined with antigen it promotes not only a strong and broad humoral immune response (see manuscript publication announcement below), but more importantly it induces an effective cellular immune response against the antigen. Thus, it is being developed both as a standalone agent that can yield new therapeutics for variety of diseases, and as a vaccine adjuvant for preventive and therapeutic vaccines.

ID-LV is a breakthrough vector that is a first in class agent as it selectively delivers *in vivo* antigens and other molecules in the form of DNA to human dendritic cells. Significant effort has been invested over the last 5 years to engineer a vector with features that overcome the limitations that current vectors undergoing clinical development as cancer therapeutics or new infectious diseases vaccines have. Due to its unique ability to induce powerful and long lasting cytotoxic T cells –the ultimate immune effector cell to target and eliminate cancer cells- against tumor antigens, it is initially being advanced to the clinic in cancer indications of significant unmet need.

## Patent Details

– U.S. Patent number 8,273,361, granted September 25, 2012, entitled “Vaccine Composition Containing Synthetic Adjuvant,” relates to vaccine compositions that contain the adjuvant GLA. The patent is owned by the Infectious Disease Research Institute (IDRI) and licensed to Immune Design for worldwide exclusive rights to research, develop and commercialize GLA in a number of indications. IDRI retains worldwide exclusive rights to GLA for selected diseases affecting predominately the developing world. GLA patent coverage has also been issued in Europe.

– U.S. Patent number 8,273,345, granted September 25, 2012, entitled “Targeted Gene Delivery to Dendritic Cells,” relates to methods of delivering a lentivirus encoding a tumor antigen to dendritic cells and elicit an antigen-specific cytotoxic T-cell response. The patent is owned by the California Institute for Technology (Caltech) and licensed to Immune Design for worldwide exclusive rights.

Additional information regarding these patents can be found on the USPTO website.

## Recent Publications of Immune Design Technologies

Recently, research involving the use of GLA as a molecular adjuvant for influenza was published in the Proceedings of the National Academy of Sciences, PNAS, disclosing the adjuvants ability to enhance protective immunity against the avian H5N1 influenza virus. This work was performed by Dr. Christopher Clegg, of TRIA Bioscience, in collaboration with Immune Design. The authors demonstrate that a single dose of recombinant H5N1 protein antigen adjuvanted with GLA-formulated in a stable emulsion (SE)—protected animals from exposure to a lethal strain of H5N1 virus. Moreover, it not only accelerated and enhanced the induction of the primary immune response, but it also protected against a second and different strain of H5N1. The broadened immune response elicited by the GLA-SE vaccine may better protect against new emerging H5N1 viruses and may prove useful for the development of flu vaccines that are more potent and require less antigen, which could help maximize the global supply of influenza vaccines. GLA is currently undergoing clinical evaluation in influenza H5N1 vaccine trials in humans.

Further information about the publication can be found on the PNAS website, <http://www.pnas.org/content/current> Article #12-07308: “Adjuvant solution for pandemic influenza vaccine production,” by Christopher H. Clegg et al.

## About Immune Design Corp.

Immune Design is a privately held biotechnology company based in Seattle, Washington and formed in 2008 to bring together some of the world’s leaders in the field of molecular immunology to develop therapeutic vaccines for the treatment of infectious and malignant disease. The company employs advanced and leading edge methods to precisely control the activation and context of antigen

presentation by dendritic cells in order to shape the desired adaptive immune response. This goal is accomplished through the application of two proprietary technology platforms that activate the immune system by distinct mechanisms.  
[www.immunedesign.com](http://www.immunedesign.com)

#### About IDRI

IDRI is a Seattle-based not-for-profit organization committed to applying innovative science to the research and development of products to prevent, detect, and treat infectious diseases of poverty. By integrating capabilities, including early stage drug discovery, preclinical testing, manufacturing, and clinical trials, IDRI strives to create an efficient pathway bringing scientific innovation from the laboratory to the people who need it most.  
[www.idri.org](http://www.idri.org)

#### About TRIA Bioscience

TRIA Bioscience is a Seattle based biotechnology company engaged in the discovery and commercialization of innovative products for infection and chronic disease.  
[www.triabioscience.com](http://www.triabioscience.com)

Additional information can be found on the company's website at  
[www.immunedesign.com](http://www.immunedesign.com).  
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