



AUTOIMMUNE THERAPEUTIC

NKG2D Biologic to Reduce Immune Cell Activation

Brief Description of Technology

A multimeric decoy to block activation of NKG2D and treat autoimmune and inflammatory diseases, and for use in vaccine development.

BUSINESS OPPORTUNITY

Exclusive license
Sponsored research

TECHNOLOGY TYPE

Protein
Biologic
Drug delivery
Inflammatory disease
Autoimmune
Vaccine

STAGE OF DEVELOPMENT

Preclinical *in vivo*
Preclinical *in vitro*

PATENT INFORMATION

WO 2017083545

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Technology Overview

Dr. Strong and Dr. Prlic have developed a multimeric NKG2D decoy that will bind all NKG2D ligands and block the NKG2D pathway. NKG2D is a receptor expressed by immune cells which activates the immune cell upon ligand binding. While stimulation of NKG2D can be beneficial in some circumstances, its activation is associated with several autoimmune and inflammatory diseases such as rheumatoid arthritis, inflammatory bowel disease [IBD], and graft versus host disease [GVHD]. NKG2D stimulation can also dampen the effectiveness of vaccine administrations. Blocking NKG2D stimulation can reduce immune cell activation as a treatment for autoimmune diseases, and for increasing vaccine efficacy.

Applications

- Therapeutic for autoimmune and inflammatory diseases
- Vaccine development

Advantages

- Blocks NKG2D immune response
- Pan-NKG2D ligand masking through multiple ligand binding positions allows for lower dose with single therapeutic, in contrast with antibody-based therapeutics

Market Overview

Estimated that 50 million Americans have an autoimmune disease. In 2001, National Institutes of Allergy and Infectious Diseases [NIAID] estimated that annual autoimmune disease treatment costs were greater than \$100 billion.

Investigator Overview

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