

Immunology

CAR-NK Therapy for Lupus

Brief Description of Technology

Human Natural Killer cells expressing chimeric antigen receptor that targets aberrant immune system signaling that is involved in auto-antibody production associated with Systemic Lupus Erythematosus.

TECHNOLOGY ID

2017-0902

BUSINESS OPPORTUNITY

Exclusive License

TECHNOLOGY TYPE

Biologic Therapy

PATENT INFORMATION

Provisional Filed

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Technology Overview

Systemic Lupus Erythematosus (SLE) is one of more than 80 disease states that evolve from immune system dysregulation. Advances in the understanding of the genetics and pathobiology of SLE are leading to a new generation of advanced biologics in development to target specific sources of dysfunction. Researchers at Cincinnati Children's Hospital have combined chimeric antigen receptor technology with new discoveries in the regulation of adaptive immunity to target a specific cell component of the immune system. This novel approach is expected to target aberrant signaling between follicular helper T cells and the germinal center B cells that are central to the development and maintenance of pathogenic auto-antibody secretion that contributes to the development of SLE. This technology equips the NK cell with a potent, complementary activity that is expected to dampen auto-antibody production in SLE.

Applications

Treatment of SLE and other autoimmune diseases with a follicular helper T cell component, such as Sjogren's Syndrome, rheumatoid arthritis, spondyloarthritis and type 1 diabetes.

Advantages

- Multiple NK cell source options with prior clinical data (e.g. NK-92; donor NK, or iPSC)
- Proven CAR technology element combined with a well-characterized target

Market Overview

Lupus Foundation of America estimates there are 1.5 million people in the US with some form of lupus and 5 million worldwide, with an estimated 16K new cases per year.

Investigator Overview

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