THERAPEUTIC, TOOL

Pre-clinical and Clinical Development of Serotherapy for Cytomegalovirus (CMV) Reactivation after Transplantation

Brief Technology Description

Methods and tools to treat CMV reactivation in immunosuppressed patients using serotherapy

BUSINESS OPPORTUNITY
Exclusive licence
Non-exclusive license
Sponsored research

TECHNOLOGY TYPE
Therapeutic
Tool

STAGE OF DEVELOPMENT
Preclinical *in vivo*

PATENT INFORMATION
WO2019104384A1

INVESTIGATOR OVERVIEW
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Technology Overview

Cytomegalovirus (CMV) is a common virus that infects 50-80% of the population by age 40. Although symptoms are generally mild in patients with healthy immune systems, infection or reactivation of CMV is associated with significantly lower survival after transplantation. Despite monitoring and preemptive antiviral therapy, 50-70% of CMV seropositive transplant patients experience CMV reactivation and 5-10% develop life-threatening end-organ CMV disease. CMV infection and reactivation is currently treated with antiviral drugs or using adoptive T cell immunotherapy to mitigate the impact of infection and reduce disease. However, antiviral therapies are limited by toxicity and the emergence of drug resistant CMV strains. Using a novel mouse model of CMV reactivation, Hutch researchers found that anti-CMV antibodies produced by the humoral immune response are sufficient to inhibit or prevent CMV reactivation prior to the generation of antigen-specific T cell responses. Specifically, CMV serotherapy confers high level protection and is effective even during GVHD if strain specific antibodies are used.

Applications

- Serotherapy can be used to inhibit or prevent CMV reactivation in immunosuppressed subjects, including subjects receiving hematopoietic or solid organ transplants

Potential Advantages

- Reduced toxicity compared to antivirals and avoidance of drug resistance

Market Overview:

The global cytomegalovirus treatment market is expected to reach 335.49 million USD by 2025.