



VACCINE DEVELOPMENT

Vaccine Epitopes Elicit Specific Tissue Resident Memory T Cells to Treat HSV-2 Infection

Brief Description of Technology

HSV-2 epitopes used as immunogenic compositions to elicit and localize HSV-2-reactive CD8 and CD4 tissue resident memory T cells to protect against and treat HSV-2 infection.

BUSINESS OPPORTUNITY

Exclusive license
Sponsored research

TECHNOLOGY TYPE

Therapeutic
Vaccine

STAGE OF DEVELOPMENT

Preclinical *in vitro*

PATENT INFORMATION

Patent pending

INVESTIGATOR

Lawrence Corey, MD
Clinical Research Division
David Koelle, MD
University of Washington

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Tech ID: 18-007
partnering@fredhutch.org
206-667-4304

Technology Overview

Herpes Simplex Virus type 1 (HSV-1) and type 2 (HSV-2) are sexually transmitted infections that are significant causes of human morbidity. HSV-2 targets are the causative agent of recurrent genital herpes lesions, and are associated with increased pregnancy risks [e.g., spontaneous abortion and premature birth], as well as three-fold increased risk of HIV infection. Majority of HSV-2 infections are asymptomatic, resulting in unparalleled patient transmission to uninfected partners. Current FDA licensed antiviral therapies require continual use to suppress symptomatic outbreaks and viral shedding. Drs. Corey and Koelle's research focuses on harnessing CD8 and CD4 tissue resident memory (TRM) cells left behind at sites of resolved HSV infection to prevent reinfection. These HSV-2 epitopes bound by CD8 and CD4 TRM cells are used to treat HSV-2 infection, reduce risk of HSV-2 infection, and induce an immune response against HSV-2.

Applications

- Vaccination for prevention and treatment of HSV-2 infection
- Treatment of chronic viral infections
- Prevents genital ulcer disease and neonatal herpes-related mortality

Advantages

- Reduces reinfection
- Interrupts HIV transmission

Market Overview

According to the World Health Organization, 417 million people between the ages of 15 and 49 are HSV-2 infected, with 60 million residing in the United States alone. The genital herpes treatment market is expected to surge and reach a market size greater than USD 2.4 billion by 2027 with an anticipated CAGR of 4.4% between 2017 and 2027. The ever-growing burden and pervasive spread of the disease is driving market growth, especially in the Middle East and Africa, which has the highest growth rate and highest market share.