

## *Infectious Diseases*

# Antibody modification platform for infectious diseases

### Brief Description of Technology

Antibody modification technique that expands protective role during pregnancy and early infancy.

#### TECHNOLOGY ID

2021-0210

#### BUSINESS OPPORTUNITY

Exclusive License or Sponsored Research

#### TECHNOLOGY TYPE

Antibody

#### PATENT INFORMATION

PCT Filed

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### Technology Overview

Cincinnati Children's Hospital researchers in the Division of Infectious Diseases have developed a chemical modification approach for antibody development that may expand the scope of antibody-mediated protection during pregnancy and the neonatal period when T-cell mediated immunity is immature. A long-standing tenet of Immunology is that humoral immunity and cell-mediated adaptive immunity have non-overlapping roles, but many questions remained about how host defense is fine-tuned and implemented to mitigate vulnerability to infection during pregnancy and early life. For decades, immunologists believed that intracellular pathogens evaded antibody protection. Ground-breaking research has now shown that specific chemical modifications allow antibodies to play an alternate role in fetal protection by stimulation of immunity via receptor-mediated pathways that respond specifically to deacetylated sugars. This modification is a key element of a unique vertical immunity transfer strategy employed by pregnant mothers to provide an additional pathway to protect babies from intracellular infections. This newly characterized pathway may represent a platform for antibody modification that leads to improved therapies for bacterial and viral pathogens during and after pregnancy.

### Applications

This technology is an antibody modification technique that produces antibodies with expanded capabilities for intracellular pathogens and related infectious diseases.

### Advantages

\*Novel antibody modification for pregnancy/neonatal infectious disease therapy \*Provides pathway for expanded scope of Ab-mediated protection in neonates \*Adapts novel techniques for expanding Ab protection to intracellular pathogens

### Investigator Overview

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