

## Infectious Disease

# Use of CXCR3 Inhibitors for Reducing and Preventing Preterm Birth and Pregnancy Complications

## Brief Description of Technology

Methods and compositions related to reducing the risk of or preventing fetal wastage by administering CXCR3 inhibitors.

### TECHNOLOGY ID

2014-1005

### BUSINESS OPPORTUNITY

Exclusive License or Sponsored  
Research

### TECHNOLOGY TYPE

Therapeutic Target

### PATENT INFORMATION

PCT Filed

### LEARN MORE

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## Technology Overview

With an estimated 2.6M cases occurring annually, stillbirth remains a pressing global health problem and it is suggested that maternal infection is an important causative factor. Dr. Way has discovered that neutralizing the CXCR3 receptor successfully inhibited fetal-specific T cells in a pregnant subject and prevented fetal wastage under both infection and non-infection contexts. He has shown, in a *Listeria monocytogenes* (Lm) model, that fetal wastage requires recruitment of inflammatory cells that promote fetal-specific T cells to infiltrate the maternal-fetal interface. Essential to this process is the T-cell chemokine receptor CXCR3, which when inhibited or removed genetically, prevented fetal wastage. This protection against fetal wastage and in utero Lm invasion is maintained even after initiating CXCR3 neutralization after infection. These results suggest blocking CXCR3 may represent a more universal approach for mitigating immune-mediated pregnancy complications.

## Applications

- Therapeutic treatment to prevent infection induced fetal wastage
- Implications for non-infectious pregnancy complications (preeclampsia)

## Advantages

Addresses underlying immunological factors driving maternal fetal tolerance, which appear to play a significant role in pregnancy complications.

## Market Overview

Potential markets this technology may impact include stillbirths, preterm births, and preeclampsia. Worldwide: 15M babies are born preterm each year, and associated complications are the leading cause of death of children under five. 10M women develop preeclampsia each year, and 76K die from preeclampsia and related hypertensive disorders. US: ~24K stillbirths occur each year, which is more than 10 times as many deaths as SIDS.



# Investigator Overview

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