

# INHIBITOR OF DENGUE VIRUS ENTRY TARGETING THE DOMAIN I AND II INTERFACE OF THE VIRAL ENVELOPE PROTEIN



Florida Gulf Coast University is currently seeking companies interested in commercializing a novel inhibitor of dengue virus entry. Dengue virus is the causative agent of the most important mosquito transmitted viral disease. Infections cause dengue fever, dengue break bone fever, dengue hemorrhagic fever, and dengue shock syndrome. The World Health Organization estimates that there are currently 50 million cases per year world wide. The number of cases, the severity of cases, and the geographical range of this disease are increasing every year. There are no approved drug treatments or vaccines for this disease. Florida Gulf Coast University researchers have developed a rationally designed small peptide inhibitor that targets the domain I and II interface of the dengue-2 Envelope protein and prevents virus entry into cultured target cells. This inhibitor is non-toxic in tissue culture systems and inhibits viral entry at low concentrations.

## APPLICATIONS

Highly active and specific inhibitor of dengue-2 virus.

## ADVANTAGES

- Rationally designed molecular structure
- Well characterized mechanism of action
- Non-toxic in cell culture
- No other approved inhibitors or vaccines against dengue virus

## THE TECHNOLOGY

This technology utilizes a rationally designed small peptide to interfere with the function of the dengue virus Envelope protein. Viral Envelope proteins mediate entry of the virion genome into new target cells. Blocking the function of the Envelope protein prevents virus infection. This is a proven technology for the development of viral inhibitors. A different peptide inhibitor with activity against the HIV Envelope protein is approved for use in the US and Europe.

## THE INVENTORS

Drs. Scott F. Michael, Sharon Isern, and Joshua M. Costin are faculty in the Department of Biological Sciences and members of the Biotechnology Research Group at Florida Gulf Coast University. Drs. Michael, Isern, and Costin received their Ph.D. degrees from the Johns Hopkins University, the University of Alabama at Birmingham, and Tulane University, respectively. Their collaborative research interests include the study of virus evolution, virus entry mechanisms, viral drug resistance, and the development of novel viral entry inhibitors.

## CONTACT

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