

Dengue Virus Polypeptide Sequences and T Cell Epitopes

Researchers at the La Jolla Institute for Immunology have identified and characterized novel Dengue virus (DV) polypeptides and T cell epitopes that can be used to activate an anti-DV CD8⁺ T cell response or an anti-DV CD4⁺ T cell response.

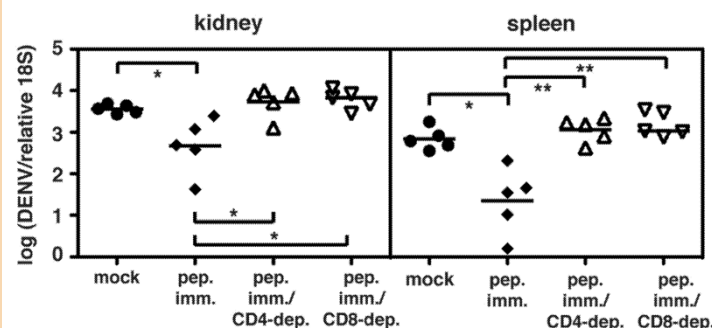
Dengue virus (DV) is a mosquito-borne RNA virus in the Flaviviridae family. The four serotypes of DV (DV 1-4) share approximately 65-75% homology at the amino acid level. Infections with DV can be asymptomatic or cause diseases ranging from dengue fever (DF) to dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS). DF and DHF/DSS are a significant cause of morbidity and mortality worldwide, and they most often occur in individuals experiencing a secondary infectious with a heterologous DV serotype, suggesting the immune response contributes to pathogenesis. Therefore, a DV vaccine is a global public health priority. However, vaccine development has been challenging as a vaccine should protect against all four DV serotypes.

As such, researchers at LJI have identified and characterized novel Dengue virus (DV) peptides including T cell epitopes and structural and non-structural polypeptide sequences, subsequences, and modifications. These peptides and sequences can be used to elicit anti-DV CD8⁺ T cell responses and anti-DV CD4⁺ T cell responses. They are useful for the design of novel vaccine compositions to provide protection against DV infections and can also be used as a therapeutic to provide treatment for DV infections.

ADVANTAGES:

- Novel DV polypeptides/T cell epitopes that elicit both CD8⁺ and CD4⁺ T cell response
- Useful for the design of novel vaccine constructs or therapeutics

CD8⁺ and CD4⁺ T Cell Polypeptides and Epitopes from Dengue Virus



Peptide immunization with CD4⁺ T cell epitopes results in enhanced DV2 clearance