Subgenomic Replicons of the Flavivirus Dengue

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Technology description

Dengue virus, with its four serotypes Den-1 to Den-4, is the most important member of the Flavivirus genus with respect to infection of human producing diseases that range from flu-like symptoms of dengue fever (DF) to severe or fatal illness of dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS). Dengue outbreaks continue to be a major public health problem in densely populated areas of the tropical and subtropical regions, where mosquito vectors are abundant. This invention relates to the construction of all four types of dengue subgenomic replicons (chromosome and plasmid which contain genetic information necessary for their own replication) containing large deletions in the structural region (C-preM-E) of the genome. Immunization using these replicons should be effective in eliciting not only a humoral-mediated immune response but also a cell-mediated immune response.

Application area

Prevention of severe and/or fatal human disease caused by dengue virus, a major health concern in tropical and subtropical regions

Advantages

These replicons should be safer than a live attenuated vaccine because they cannot cause disease in the host and they should be better than subunit vaccines because they can replicate in the host.

Institution

NIH - National Institutes of Health

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com