



## **Monovalent Dengue Vaccine Against All Four Dengue Serotypes**

**INVENTION:** Investigators have designed a universally recognized dengue sequence based upon 100 dengue envelope protein sequences from both subtypes 1 and 2. This sequence allows for the conservation of epitopes from all strains of dengue from a particular group and results in protection against all dengue viruses using a single sequence. This universal sequence should also provide immunity to future strains of the pathogen.

### **APPLICATIONS:**

- Broadly protective vaccine for current and emerging Dengue serotypes

### **ADVANTAGES:**

- Single vaccine prM-E insert elicits high titer neutralizing antibodies against all 4 serotypes of DENV.
- Antigen can be expressed as a recombinant protein, RNA, or DNA based vaccines as well split and live attenuated vaccines.
- Antigen can be expressed in viral vectors and viral like particles

**STAGE OF DEVELOPMENT:** mouse and non-human primate data available

**BACKGROUND:** Dengue is a mosquito-borne, viral infection that causes a severe flu-like illness (dengue fever), and sometimes a potentially lethal complication called dengue haemorrhagic fever. There are currently 2.5 billion people living in dengue endemic regions with roughly 100 million annual cases of dengue fever and hundreds of thousands of cases of dengue hemorrhagic fever and dengue shock syndrome. No vaccines are currently available against any of the four Dengue virus serotypes (DENV). Vaccine production is hampered because if an individual is immunized against one type of Dengue virus, that person is not protected from the other 3 viruses. In fact, low levels of the antibodies produced in response to vaccination may actually increase the risk for a more severe disease during a secondary infection due to a phenomenon known as antibody mediated enhancement.

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**PATENT STATUS:** Provisional Patent Applications filed

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**TECHNOLOGY ID:**