Is a broadly effective dengue vaccine even possible?

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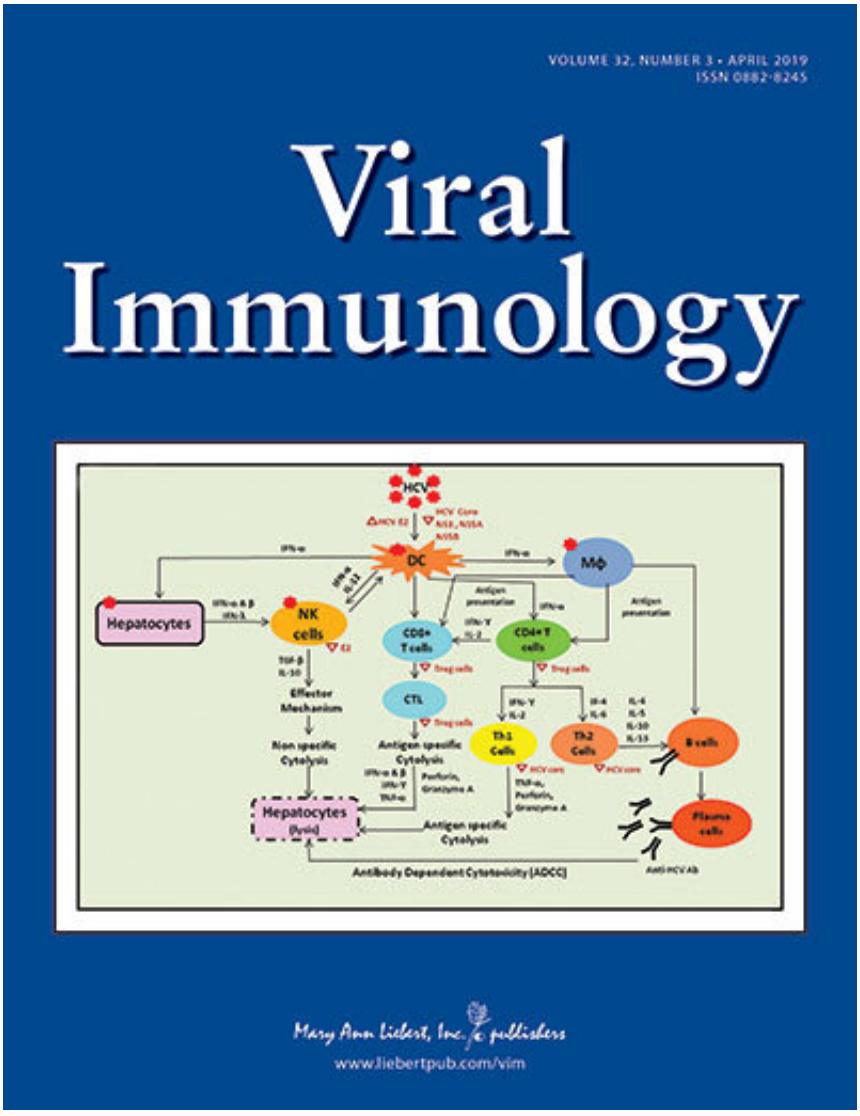

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Dengue is on the rise, with about 20,000 patients dying each year from this mosquito-borne disease, yet despite ongoing efforts a broadly effective dengue vaccine is not available. The complex challenges, current status of dengue vaccine development, and whether an effective vaccine is even possible are the focus of a thought-provoking article published in *Viral Immunology*.

The article entitled "Effective Dengue Vaccines: A Pipe Dream?" was coauthored by Lázaro Gil and Laura Lazo, Center for Genetic Engineering and Biotechnology (CIGB), Havana, Cuba. The authors note the 10-fold increase in dengue cases compared to the previous decade and review the efforts to develop a dengue vaccine, including extensive animal studies and clinical trials that led to approval of Sanofi-Pasteur's Dengvaxia. This vaccine, however, has a limited use profile, as it can actually increase the risk of severe dengue under some circumstances and cannot, for example, be given to children less than nine years of age. In light of the re-emergence of viral diseases such as measles, rubella, and polio, the authors suggest that a live attenuated dengue vaccine would likely require booster doses.

Based on the past experimental evidence, the authors conclude that an effective dengue vaccine is possible, but remains a substantial challenge, and they suggest rethinking several existing concepts in the ongoing effort to develop dengue vaccine candidates.

David L. Woodland, Ph.D., Editor-in Chief of *Viral Immunology* and Adjunct Member of the Trudeau Institute in Saranac Lake, NY, states: "The recent Food and Drug Administration approval of the first licensed dengue vaccine, Dengvaxia, is a major step forward in the control of dengue. But the disease is complex, and Dengvaxia can result in severe side effects in certain circumstances. The excellent review by Gil and Lazo highlights the complex issues surrounding dengue virus vaccines."

Medical Xpress

More information: Lázaro Gil et al, Effective Dengue Vaccines: A Pipe Dream?, *Viral Immunology* (2019). DOI: 10.1089/VIM.2019.0044

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