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A purified inactivated Japanese encephalitis virus vaccine made in Vero cells

A K Srivastava [1], J R Putnak, S H Lee, S P Hong, S B Moon, D A Barvir, B Zhao, R A Olson, S O Kim, W D Yoo, A C Towle, D W Vaughn, B L Innis, K H Eckels

Affiliations

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Abstract

A second generation, purified, inactivated vaccine (PIV) against Japanese encephalitis (JE) virus was produced and tested in mice where it was found to be highly immunogenic and protective. The JE-PIV was made from an attenuated strain of JE virus propagated in certified Vero cells, purified, and inactivated with formalin. Its manufacture followed current GMP guidelines for the production of biologicals. The manufacturing process was efficient in generating a high yield of virus, essentially free of contaminating host cell proteins and nucleic acids. The PIV was formulated with aluminum hydroxide and administered to mice by subcutaneous inoculation. Vaccinated animals developed high-titered JE virus neutralizing antibodies in a dose dependent fashion after two injections. The vaccine protected mice against morbidity and mortality after challenge with live, virulent, JE virus. Compared with the existing licensed mouse brain-derived vaccine, JE-Vax, the Vero cell-derived JE-PIV was more immunogenic and as effective as preventing encephalitis in mice. The JE-PIV is currently being tested for safety and immunogenicity in volunteers.

Related information

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tested for safety and immunogenicity in volunteers.
FAU - Srivastava, A K
AU - Srivastava AK
AD - Walter Reed Army Institute of Research, Division of Communicable Disease
Immunology, 503 Robert Grant Avenue, Silver Spring, MD 20910, USA.
FAU - Putnak, J R
AU - Putnak JR
FAU - Lee, S H
AU - Lee SH
FAU - Hong, S P
AU - Hong SP
FAU - Moon, S B
AU - Moon SB
FAU - Barvir, D A
AU - Barvir DA
FAU - Zhao, B
AU - Zhao B
FAU - Olson, R A
AU - Olson RA
FAU - Kim, S O
AU - Kim SO
FAU - Yoo, W D
AU - Yoo WD
FAU - Towle, A C
AU - Towle AC
FAU - Vaughn, D W
AU - Vaughn DW

FAU - Innis, B L
AU - Innis BL
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AU - Eckels KH
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