The Concentration of Japanese Encephalitis Virus by Cross-Flow Ultrafiltration

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ABSTRACT

Japanese encephalitis virus (JEV) is an epidemic disease occurring not only in Japan but also in other countries in Asia. About 50,000 cases have been reported per year in these area and the number is increasing. The fatality rate is about 30% and 50% of those who survive develop neurological sequelae. Vero cell line was adapted from adult African green monkey kidney cell by Yasumura and Kawakita in 1962. JEV was isolated from Beijine strain in Japan. These cell lines are used in Rabies and Poliomyelitis vaccines at present and certified with safety. In this experiment, Vero cells were first grown in T-flask and then transferred to Roller bottle. The Beijine strain of JEV was inoculated the cell population reached to required density. The culture cells were harvested at 72hr. The harvested cells were then used for setting optimal cassette operating condition. Two 100kD cassettes of 50cm2 and 0.02m2 membrane area were evaluated with the condition of 4,2,0 and 6,0,0 psi. These two cassettes were compared for their efficacy at TMP 3psi. The comparison data between 4,2,0 psi (TMP 3psi) and 6,0,0 psi (TMP 3psi) showed that although flow rate was unstable with 4,2,0 psi (TMP 3psi), it performed higher recovery.

Keywords : Vero cell ; 100kD cassette ; Japanese encephalitis virus

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