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ANTIGENIC ANALYSIS OF FLAVIVIRUS WITH MONOCLONAL ANTIBODIES
AGAINST NEGISHI VIRUS

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The antigenicity of 5 flaviviruses was examined by 10 monoclonal antibodies against Negishi virus, which belongs to the tick-borne encephalitis (TBE) complex of Flavivirus. The flaviviruses used for antigenic analysis were Negishi and Langat viruses of TBE complex, 3-Arch virus of the tick-borne group, Japanese encephalitis virus (JEV) of the mosquito-borne group and Apoi virus of an unknown vector group. Monoclonal antibodies prepared from ascitic fluid, which was obtained from BALB/c mice injected with cloned cells intraperitoneally, were used for the hemagglutination-inhibition (HI) and neutralization (N) tests.

The results were summarized as follows :

1) The results of cross HI and N tests revealed that Negishi and Langat were closely related antigenically, and that 3-Arch virus was located antigenically between TBE complex and JEV. Moreover Apoi virus may be classified as belonging to the mosquito-borne encephalitis group by results showing an antigenically close relationship between JEV and Apoi virus.

2) Most of the monoclonal antibodies which had high HI activity against Negishi virus did not reveal N activity. No HI activity was observed in the monoclonal antibodies having N activity to Negishi virus. These results suggested that the hemagglutination-related antigenic site might be different from the neutralization-related antigenic site in Negishi virus.

3) Six monoclonal antibodies which had HI and N activities against JEV were classified into 3 groups by competitive binding assay. This result suggested that at least 3 antigenic determinants existed in the JEV antigen related to HI and N.