STUDIES ON EXPERIMENTAL INFECTION WITH NEGISHI VIRUS IN MICE AND TRANSMISSION OF THE VIRUS TO TICKS

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This report deals with the experimental infection of Negishi virus in mice and the transmission of the virus to ticks.

The results obtained were as follows.

1) After intraperitoneal inoculation, the LD_{50} values of the virus suspension were $10^{7.0}$/0.1 ml in 2 week-old mice and less than $10^{2.6}$/0.1 ml in 8 week-old mice. The time intervals until death were prolonged with aging in the mice of different weeks of age which were inoculated with lower concentration of the virus.

2) The LD_{50} values obtained by subcutaneous inoculations were similar to those obtained by the intraperitoneal inoculations mentioned above. The neutralization test applied to the sera of surviving mice showed the presence of an inapparent infection.

3) In the three week-old mice inoculated subcutaneously with the virus, the virus was detected first in the spleen, second in the small intestine, third in the brain and in the large intestine, fourth in the kidneys and the lymph nodes, and fifth in the serum. The highest titer of the virus was obtained from the brain.

4) Suckling mice were inoculated intraperitoneally with Negishi virus, and the virus titer in the blood reached approximately $10^{5.0}$ PFU/ml of the 5th day after inoculation.

5) An apparent infection was demonstrated in the mice administrated the Negishi virus perorally.

6) The larvae of *Ixodes persulcatus* were fed to the viremic suckling mice. The virus was detected up to two weeks after engorging.

7) A total of 4266 ticks belonging to 4 species in 2 genera were collected from 4 districts in Hokkaido. In the 174 pools of the 4266 tick examined, there was no successful virus isolation.