



# HOKKAIDO UNIVERSITY

Title	A SEARCH FOR SUSCEPTIBLE CELLS TO AVIAN ENCEPHALOMYELITIS (AE) VIRUS
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was used.

4) Moisture content (1.42 to 3.71%) of the dried vaccine from CDP, containing sodium glutamate as the single medium, did not influence the protective effect of the suspending medium, when the vaccine was exposed at high temperature (100°C, 60 minutes). In peptone, also, the relation between the protective effect of its medium and the moisture content (0.11 to 4.24%) was not shown.

5) In the preservation process at 45°C, the protective effect of sodium glutamate or peptone as the single medium in the dried vaccine from CDP was not affected by the moisture content from 0.65 to 4.07% in the former and 1.23 to 3.03% in the latter.

Hokkaido University granted the degree of Master of Veterinary Medicine to the following 8 graduates of the Post-Graduate School on March 25, 1968.

The authors' summaries of their theses are as follows:

### **A SEARCH FOR SUSCEPTIBLE CELLS TO AVIAN ENCEPHALOMYELITIS (AE) VIRUS**

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(Summary of Masters thesis written under direction of Dr. S. MIURA)

This report is a study of embryo-adapted avian encephalomyelitis (AE) virus was initiated to determine its cytopathogenic effect on various selected tissue cell cultures.

The following cell types were used in this study. (1) Primary cultures of the following chicken cells: glia cells, embryo whole brain cells, whole embryo fibro-blasts, embryonic cells of the heart, liver, kidney, lung, intestine and spleen. (2) Primary cultured kidney cells from the monkey, calf and pig. (3) Fifteen established cell lines: HeLa, HeLa S-3, FL, FL-17-M, E 10, E 38, 1035, HEp 2, G<sub>2</sub>, MS, MK<sub>2</sub>, Vero, L, JTC-5 and SK.

A summary of our results follows:

1) During the first seven days after inoculation with the AE virus ( $10^{4.5}$  EID<sub>50</sub>/0.1 ml), diluted to  $10^0 \sim 10^5$ , no cytopathogenic effect (CPE) was observed in the above-mentioned 27 cell types.

2) No CPE was seen following three serial passages of the virus in embryonic lung and monkey kidney cells. We also found no CPE developed on primary cell cultures of embryonic heart, liver, kidney and intestine or following 5 serial passages in these cell lines.

3) One of the 5 AE susceptible embryonated eggs which were inoculated with a culture of fifth serial passage embryonic brain cells developed typical lesions seen in AE infected chick embryos. However, no indication of virus multiplication was observed in the cell cultures from embryonic heart, liver, kidney, intestines or whole embryos, nor in the fifth passages of the established cell lines.

4) CPE and hemadsorption activity of the Newcastle disease virus were not affected by the AE virus cultured on kidney cells, embryonic liver cells or the following established cell lines (HeLa, HeLa S-3, FL, HEp 2, G<sub>2</sub>, MS, MK<sub>2</sub>, L, JTC-5 and SK).

5) AE virus plaque formation did not occurred on FL-17-M, G<sub>2</sub>, MS, Vero and L cell cultures.

6) The fluorescent antibody technique was used to detect viral antigens in primary cultures of whole brain and embryonic kidney, liver, heart, lung and intestines, and the established cell lines (HeLa, FL-17-M, HEp 2, G<sub>2</sub>, MK<sub>2</sub>, Vero, L, JTC-5 and SK). However, no specific AE virus antigen was found in any cells.

## **THE EFFECT OF COLD EXPOSURE UPON THE URINE VOLUME AND SODIUM-, POTASSIUM- AND PHOSPHORUS- EXCRETION IN THE URINE OF RABBITS**

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(Summary of Masters thesis written under direction of Dr. S. HOSOYA)

Many researchers have investigated the problem of seasonal variation of water and mineral metabolism. Although they have not been able to arrive at a definite conclusion, many of them have suggested that the cause is the seasonal variation of the air temperature.

I planned to determine whether the air temperature has any effect on water and mineral metabolism by using cold exposure experiments. The first step was to study the effect of cold upon the urine volume and sodium-, potassium- and phosphorus-excretion. Male rabbits were exposed to 2.5°C for 8 days, 10°C for