



HOKKAIDO UNIVERSITY

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tion. c) The manual movement of the resting reticulum caused slow potential fluctuations in synchronization with the movement. d) Type II was always accompanied by electrical burst discharges recorded from the reticular wall. However, the bursts were not always accompanied by the slow potential. These results suggest that Type II may be an event associated with the positional shift of the reticulum and its contents.

2) Model experiments were carried out to test this idea. It was found that an electrostatic field, originating from the stomach model, existed around the model, and that the movement of the model in the field caused a slow potential like Type II.

3) It is proposed that an electrostatic field may exist, originating mainly from a bio-electrical potential gradient observed across the rumino-reticular wall, and that Type II may be induced by a disarrangement of this field.

Hokkaido University granted the degree of Master of Veterinary Medicine to the following 7 graduates of the Post-Graduate School on March 25, 1971.

The authors' summaries of their theses are as follows:

ON THE PURITY OF CHICKEN TROPOMYOSINS

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Chicken tropomyosins were prepared by the method of Bailey from the pectoralis muscle, heart muscle and the muscle of the gizzard, and their purities were examined by immunological techniques.

The results obtained were as follows:

1) All the preparations of the tropomyosins showed the presence of several antigenic substances by double diffusion tests.

2) The pectoralis muscle tropomyosin was separated into the main component and the minor one enriched with nucleic acid by the column chromatography of a Sepharose 4B in 5 M urea-1 mM 2-mercaptoethanol.

3) The main peak chromatographed by a Sepharose 4B was further separated to three components by the column chromatography of a Sephadex G-100 in 5 M urea-1 mM 2-mercaptoethanol. In one of these three components, the middle peak showed a single diffused band by the double diffusion test. This

component showed the same mobility to reduced tropomyosin on the electrophoresis of acrylamide gel in 5 M urea-1% 2-mercaptoethanol at pH 8.3.

4) A single component was not obtained from the preparations of heart and gizzard tropomyosins.

CHARACTERIZATION OF MULTIPLICATION OF AVIAN ENCEPHALOMYELITIS VIRUS IN CHICK EMBRYO BRAIN CELL CULTURES

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1) In the cell cultures of a chick embryo brain (CEB) inoculated with large doses ($10^{5.0} \sim 10^{4.0}$ EID₅₀/0.3 ml) of embryo-adapted avian encephalomyelitis virus (AEV), initial multiplication of the virus was observed later than 12 hours post-inoculation. Maximum virus titers of the cell-culture fluids ($10^{3.2} \sim 10^{4.5}$ EID₅₀/ml) were obtained 2 days after inoculation and those of the cell phase ($10^{3.3} \sim 10^{2.4}$ EID₅₀/0.3 ml) were obtained almost one day before. When smaller inocula ($10^{1.0} \sim 10^{3.0}$ EID₅₀/ml) were used, the time to the peak of multiplication was prolonged. In any case, after having reached maximum virus titers, titers of $10^{2.5} \sim 10^{3.0}$ EID₅₀ per ml (cell-culture fluids) persisted. AEV antigen, stained directly by the fluorescent antibody (FA), was not detected in the cells.

2) Two strains and one field isolate of non-embryo-adapted AEV multiplied in the CEB cell cultures. Growth curves of the virus and other findings were the same as those observed in the experiments with smaller inocula of the embryo-adapted virus.

3) The change of virus infective titers in the brain cell cultures from chick embryos which had been infected with the embryo-adapted virus various days after incubation was almost the same as that in the cell cultures inoculated with the same virus. However, in the cell cultures from heavily infected embryos, viral antigen was detected by the FA test from the initial stage of the cultivation. Thereafter, the antigen-positive cells decreased in number and disappeared within about 10 days after the onset of cultivation. On the other hand, when cultured cells were derived from chick embryos which had been inoculated with the virus 3 days before the cultivation, the antigen-positive cells were not observed throughout. No cytopathic effect occurred, no plaque was produced and no inclusion body was detected in the infected cultured cells throughout the above-