



# HOKKAIDO UNIVERSITY

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## INFORMATION

Hokkaido University granted the degree of Doctor of Veterinary Medicine to Mr. Akiharu ITO on 30 September, 1970 and Mr. Tomoo ITABISASHI on March 25, 1971 under a new regulation (1962) authorizing the granting of the Doctor's degree to qualified researchers who were not graduates of the Post-Graduate School.

The authors' summaries of their theses are as follows:

### **ALPHA TOXOID OF *CLOSTRIDIUM PERFRINGENS***

Akiharu ITO

*National Institute of Health  
Shinagawa, Tokyo, Japan*

Original report of this thesis appeared in "The Japanese Journal of Medical Science & Medicine," Vol. 21, 379 (1968) and Vol. 23, 21 (1970).

### **ON THE NATURE AND ELECTROGENESIS OF A SLOW POTENTIAL RECORDED FROM THE BODY SURFACE OF THE GOAT**

Tomoo ITABISASHI\*

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The mechanism responsible for the generation of a periodic slow potential fluctuation recorded from the body surface of the goat has been investigated. The typical wave named Type II recorded during the period of non-rumination was the major subject of this study.

1) Type II was found to be associated with reticular contraction. However, the amplitude of Type II did not always correlate with the intensity of the reticular contraction. To define the major factor controlling the amplitude of Type II, the following experiments were carried out. a) When the rumino-reticular contents were replaced with either water, 0.30 M sucrose, or 0.15 M NaCl or KCl solution, the amplitude altered remarkably without any significant change in the intensity of the reticular contraction. b) Removal of the rumino-reticular contents made Type II disappear in spite of consistent reticular contrac-

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\* A part of these works appeared in *Nat. Inst. Anim. Hlth. Quart.* **4**, 92 (1964), **6**, 62 (1966) and another part will be published in the quarterly in the near future.

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

Nobutaka IDA

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Faculty of Veterinary Medicine  
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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