



# HOKKAIDO UNIVERSITY

Title	EXPERIMENTAL STUDIES ON MORPHOLOGY OF RAT OVIDUCTAL EPITHELIUM
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Hokkaido University granted the degree of Doctor of Veterinary Medicine to the following 4 researchers on 25 March, 1977 under a new regulation (1962) authorizing the granting of the Doctor's degree to qualified researchers who were not graduates of the Graduate School of Veterinary Medicine.

The titles of their theses and other information are as follows :

**ACTIVE IMMUNIZATION OF PIGLETS WITH AN ATTENUATED  
STRAIN OF TRANSMISSIBLE GASTROENTERITIS VIRUS**

Susumu FURUUCHI

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Original reports of this thesis appeared in "Infection and Immunity" Vol. 13, 990~992 (1976) and "American Journal of Veterinary Research" Vol. 37, 1401~1404 (1976).

**EXPERIMENTAL STUDIES ON MORPHOLOGY  
OF RAT OVIDUCTAL EPITHELIUM**

Jae Hyun LEE

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Histological, transmission and scanning electron microscopical studies on the epithelium of the rat oviduct were carried out during the normal sexual cycle and after hormone treatment (17  $\beta$ -estradiol and progesterone).

1) The oviductal epithelium during the normal sexual cycle generally comprised four types of cells: ciliated cells (CC); secretory cells with short microvilli (SSC); secretory cells with long microvilli (LSC); and secretory cells of the junctura part (JC).

2) According to the distribution of these cells, the oviduct may be distinguished into five segments. The length of each segment significantly varied during the sexual cycle and did not accord with the ranges of traditional segments.

3) The cilia formation of CC was more accelerated after estradiol treatment than after the progesterone one, but a balance between estrogen and progesterone was required for the maintenance of the cilia.

4) The formation of secretory granules of SSC was severely inhibited with single

hormonal treatment, but the inhibition was more severe with progesterone than with estradiol.

5) LSC did not show a great change after estradiol or progesterone treatment, although the formation of secretory granules was somewhat accelerated with progesterone treatment.

6) The formation of secretory granules of JC was severely accelerated after estradiol treatment, while completely inhibited with progesterone.

7) It was suggested that three types of secretory cells, SSC, LSC, and JC, of the rat oviductal epithelium may be different cell types, and that JC was a new type of secretory cells.

A part of this thesis appeared in "Japanese Journal of Veterinary Research" Vol. 24, 77~86 (1976) and Vol. 25 (1977) (in press).

**BACTERIOLOGICAL, ECOLOGICAL AND FOOD HYGIENIC  
STUDIES ON *STAPHYLOCOCCUS AUREUS* ORIGINATED FROM  
RATS (*RATTUS NORVEGICUS*) AND HUMAN BEINGS**

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Ecological and food hygienic studies on the carriers of *Staphylococcus aureus*, especially enterotoxigenic strains in rats (*Rattus norvegicus*) and human beings, were performed to clarify the significance of rats and human beings as causative sources in staphylococcal food poisoning outbreaks.

The carrier rates of enterotoxigenic staphylococci were 7.6% in 488 urban rats found in town houses, and 10.3% in 291 insular rats found on an island not inhabited by human beings. Out of 584 *S. aureus* cultures, 86 (14.7%) proved to be positive for enterotoxins; 41 strains were positive for A, 1 for B, 39 for C, 4 for D, and 1 for A+C+D. None were positive for E. Enterotoxin A was produced by 84% of the "urban rat" strains. Most of the enterotoxigenic strains were isolated from the caecal and rectal contents and the dorsal skin. No significant changes in the incidence rate were recorded throughout the seasons observed.

One hundred healthy food handlers in a station lunch maker were examined for enterotoxigenic staphylococci in each season. Enterotoxigenic strains were detected in 88 (22.0%) out of a total number of 400 persons. Out of 249 isolates, 135 (54.2%) proved to be positive for enterotoxins; 16 strains were positive for A, 9 for B, 35 for C, 57 for D, 3 for A+B, 2 for A+C, 8 for B+D, and 5 for A+C+D. None were