



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

positive for E. A high incidence of strains was observed in the summer and autumn. There were no significant differences in the incidence rate according to sex, age, and occupation, or in regions of the body examined. Some persons were found to carry the staphylococci of the same enterotoxin type in the same region of their bodies for 2 to 3 seasons. In addition, it was observed in some persons that enterotoxigenic strains carried in the nose or throat in the spring had a tendency to spread and to become resident in other body regions in the summer and in the autumn.

Our experiments showed that the A- and C-positive strains which originated from both food poisoning outbreaks and rats had the toxicity to induce vomiting in monkeys given intragastric injections of their culture supernatants.

From the above mentioned results, it is assumed that the enterotoxigenic *S. aureus* carried by rats (*Rattus norvegicus*) and by healthy food handlers is one of the important causative agents of human staphylococcal food poisoning outbreaks. (An outline of this study will be published in the forthcoming issue of the Japanese Journal of Bacteriology).

STUDIES ON BACTERIOPHAGE TYPING OF STAPHYLOCOCCI ISOLATED FROM CHICKENS

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