



# HOKKAIDO UNIVERSITY

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## INFORMATION

Hokkaido University granted the degree of Doctor of Veterinary Medicine to Mr. Yoshitsugu KAWASHIMA and Mr. Katsuya HIRAI on 20 December 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:

### THE LYMPH SYSTEM IN RODENTS\*

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The present study was undertaken in an effort to clarify the location and number of the lymph nodes, and their draining areas in hamsters, Mongolian gerbils, mice and rats. The results may be summarized as follows.

1) a Four strains of hamsters (Golden, Cream, APA and ACN) were investigated. There are 12 lymphocenters (parotid, mandibular, deep cervical, axillary, mediastinal, dorsal thoracic, lumbar, iliac, superficial inguinal, coeliac, cranial mesenteric, popliteal) which are comprised of 13 groups of lymph nodes.

b In Mongolian gerbils there are 14 lymphocenters (parotid, mandibular, deep cervical, axillary, mediastinal, lumbar, iliac, subiliac, superficial inguinal, sacral, coeliac, cranial mesenteric, caudal mesenteric, popliteal) which are comprised of 16 groups of lymph nodes.

c Seven strains of mice (AKR, BALB/cAnN, C3Hf·HeN, C57BL/6N, DBA/2N, BDF1, ICR-JCL) were investigated. There are 14 lymphocenters (mandibular, deep cervical, axillary, mediastinal, bronchial, lumbar, iliac, subiliac, superficial inguinal, sacral, coeliac, cranial mesenteric, caudal mesenteric, popliteal) which are comprised of 15-19 groups of lymph nodes.

d Three strains of rats (Fisher-344/N, Wister-Imamichi, Sprague Dawley-JCL) were investigated. The number of lymphocenters in rats is the same as in mice and these are comprised of 20-21 groups of lymph nodes.

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\* Original paper of this article will be published in Science Bulletin of the Faculty of Agriculture, University of the Ryukyus in the near future.

2) The average number of whole lymph nodes in 15 strains is as follows.

Hamsters	{	36: ACN, APA
		38: Golden
		40: Cream
Mongolian gerbil:		38
Mice	{	34: AKR
		36: DBA/2N, ICR-JCL, BDF1
		38: C3Hf/HeN, C57BL/6N
		43: BALB/cAnN
Rats	{	75: Wister-Imamichi
		78: Fisher-344/N
		92: Sprague Dawley-JCL

3) The number of lymph nodes is smaller in rodents than in domestic animals and some of the courses of the lymph vessels in rodents are fairly similar to those in reptiles and birds. It may be said that the rodent lymph system is considerably primitive, but that the lymph system of family *Muridae* (mice and rats) is more advanced than family *Cricetidae* (hamsters and Mongolian gerbils).

**STUDIES ON *CORYNEBACTERIUM RENALE* WITH SPECIAL  
REFERENCE TO NUTRITION AND GENETICS**

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Original report of this thesis appeared in "The Japanese Journal of Veterinary Research", Vol. 15, 121 (1967), "The Japanese Journal of Veterinary Science", Vol. 31, 149 (1969) and "The Journal of Bacteriology", Vol. 101, 1086 (1970).