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Author(s)	UJIMASA, Yuki
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SEROEPIDEMIOLOGICAL SURVEY OF CHLAMYDIAL INFECTION  
IN *RATTUS NORVEGICUS*

Yuki UJIMASA

*Department of Veterinary Public Health  
Faculty of Veterinary Medicine  
Hokkaido University, Sapporo 060, Japan*

A seroepidemiological survey was performed by detecting antibodies against chlamydiae in sera from *Rattus (R.) norvegicus*. Sera were collected from *R. norvegicus*, including house rats as wild rodents and white rats as experimental animals. The former were caught in two refuse dumping sites in the town of Kami-iso and the city of Tomakomai in Hokkaido, and the latter were received from two institutes for animal experiment in Tokyo (T) and Sapporo (H). Antibody in sera was examined by the indirect fluorescent antibody technique (IFA). The antigen for IFA was prepared from *Chlamydia psittaci* strain Izawa-1 propagated in Vero E6 cells.

IFA antibody titers distributed into two groups in sera from house rats in the Tomakomai area. One group had high titers of 1:8 or higher and the other had low titers below 1:8. In contrast, the titers of the sera from white rats of H accumulated at a peak of 1:4 or lower, which differed from the distribution pattern in the Tomakomai area. Thus, house rats in the Tomakomai area were regarded as a group infected with chlamydiae, and the titers of 1:8 or higher were judged to be positive according to the distribution pattern here.

In the house rats from Kami-iso, the positive rate in IFA was 33.6% (45/134) from 1983 to 1987. This result shows that the rat population in the Kami-iso area has been continuously contaminated with chlamydiae. In 1986, however, the positive rate in the young group (under 6 months of age) was much lower than that in the old group (above 7 months of age). This result suggests that chlamydial infections hardly existed in 1986.

The positive rate in house rats in the Tomakomai area was 53.1% (43/81), and 7 samples with a titer of 1:64 or higher were detected in the positive sera. Therefore, the house rats in the Tomakomai area were highly contaminated with chlamydiae.

In sera from the white rats in H, the positive rate was 11.1% (2/18) and the highest titer was only 1:8. On the other hand, the positive rate was 7.6% (15/197) in the white rats from T. The positive rate, however, increased from 4.6% (8/175) in 1984 to 31.8% (7/22) in 1987. When the positive rates were compared among different strains of rats from T in 1987, the rate in SHR rats was 60.0% (6/10), much higher than that in Wistar rats, which was 8.3% (1/12). These results indicate that chlamydial epidemic had recently occurred in the SHR rats in T.