



HOKKAIDO UNIVERSITY

Title	STUDIES ON SUSCEPTIBILITY OF MINK TO INFLUENZA VIRUSES : SEROLOGICAL EVIDENCE OF HUMAN INFLUENZA VIRUS INFECTION IN MINK, CONTACT INFECTION OF MINK WITH AVIAN INFLUENZA VIRUSES, AND APPLICATION OF MINK FOR EVALUATION OF INFLUENZA VACCINE
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STUDIES ON SUSCEPTIBILITY OF MINK TO INFLUENZA VIRUSES
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CONTACT INFECTION OF MINK WITH AVIAN INFLUENZA VIRUSES,
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Katsunori OKAZAKI

*Department of Hygiene and Microbiology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo, Japan*

During the period from July to November 1981, 42 out of 130 young mink of a flock were found to possess antibodies to influenza viruses, A/Bangkok/1/79 (H3N2) and A/Kumamoto/37/79 (H1N1), which were currently prevailing human influenza virus strains. Seroconversion against A/Bangkok/1/79 was found in 12 mink from August to November. These findings suggest that infection with these human influenza viruses was present in this flock during the summer and autumn, the non-prevalent season in man.

Contact infection of mink by different subtypes of avian influenza virus was examined. Five out of 6 viruses tested were recovered from the recipients. A/duck/Hokkaido/8/80 (H3N8) was recovered for 10 days from the nasal swabs of one of the two recipients and for 2 days from the animal. A/duck/Miyagi/47/77 (H11N4) was recovered from the nasal swabs of two recipients tested for 5 or 8 days. One of these showed antibody response at a low titer. A/swan/Tottori/42/80 (H7N7) was recovered for a few days from the nasal swabs of 3 recipients of 4 pairs tested. A/duck/Miyagi/95/77 (H8N4) and A/duck/Miyagi/54/76 (H5N3) were recovered from nasal swabs or respiratory organs of 2 recipients of the 4 pairs examined. No detectable antibodies were found in these mink. A/duck/Niigata/747/79 (H9N2) was not recovered from any of the recipients. Success of contact infection and the period of virus recovery from the recipient depended on the virus replication in the donor.

Since the mink were found to be highly susceptible to influenza viruses, they were used in a preliminary experiment for evaluation of influenza vaccine. The mink immunized with trivalent ether-split vaccine for human use produced serum HI antibodies. The vaccinated mink, however, shed the virus after challenge with a strain which was contained in the vaccine for the same period as that of the non-vaccinated mink. This finding may indicate that serum HI antibodies may not play an important role in the protection of mink from influenza virus infection.