CLONING OF FELINE HERPES VIRUS 1 GENOME DNA AND ITS APPLICATION FOR *IN SITU* HYBRIDIZATION

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A serological survey of feline rhinotracheitis in cats captured in Sapporo was carried out by the ELISA test. Anti-feline herpes virus 1 (FHV–1) antibodies were detercted in 33% of serum samples from 30 cats. Especially in adult cats, 50% were seropositise. The results, thus, revealed that FHV–1 is highly prevalent in the cat population in Sapporo.

In order to provide information on the mechanism of latent infection with FHV–1, an assay system using *in situ* hybridization was established for the purpose of detection of FHV–1 genome DNA in infected cells. Purified viral DNA was cleaved with the restriction endonuclease, Sal I, and the resulting fragments were cloned into plasmid pUC 18 or pUC 19 with *Escherichia coli* strain K12 JM109 as a host. Out of 602 recombinant *E. coli* strains, 188 clones which contained 13 different DNA fragments as Sal I inserts were isolated. The cloned DNA fragments and the full-length viral genome DNA were used as probes for *in situ* hybridization. By using the established hybridization system, viral DNA was detected in the ocular and nasal mucosa of acutely infected cats but not in those of the cats that had recovered from experimental infection with FHV–1. Viral DNA was detected in the trigeminal ganglia of recovered cats significantly as compared with those of control cats, in which a small number of nonspecific silver grains were observed.

These findings indicate that FHV–1 replicates in the ocular and nasal mucosa in acute infection, and suggest that FHV–1 persists in the trigeminal ganglia during the latent phase.