LATENT INFECTION OF FELINE HERPESVIRUS 1 IN THE TRIGEMINAL GANGLIA OF EXPERIMENTALLY INOCULATED CATS

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To provide information on the molecular aspects of latent infection of cats with feline herpesvirus 1 (FHV-1), the trigeminal ganglia of latently infected cats were analyzed for the presence of FHV-1 nucleic acids by *in situ* hybridization.

Five cats experimentally infected with FHV-1 showed clinical signs of rhinotracheitis. After recovery from the acute phase of the disease, 2 of these cats were treated with dexamethasone, resulting in reshedding of FHV-1 and a brisk secondary antibody response to the virus. It was thus confirmed that these cats were latently infected with FHV-1.

For identification of the immediate-early (IE) gene of FHV-1, dot blot hybridization was performed using RNA extracted from cycloheximide-treated CRFK cells infected with FHV-1, and riboprobes. An IE transcript of FHV-1 was localized within the inverted repeat between map units 0.769 and 0.835. A single band of IE transcript of approximately 5.4 kilobases (kb) was detected by Northern blot analysis.

FHV-1-specific nucleic acids were detected in the neuronal nucleus in the trigeminal ganglia of two of four latently infected cats by *in situ* hybridization. The positive signals were found with probes that extended from 0.750-0.789 map units of the FHV-1 gene, an area of approximately 5.9 kb. This positive reaction occurred only with the riboprobes of which the direction of transcription was opposite to that of IE mRNA. By Northern blot analysis, a FHV-1 specific transcript of approximately 2.1 kb in size was detected in the trigeminal ganalia of a latently infected cat. These results indicate that transcription of FHV-1 genome is restricted during the latent phase of infection, and that the direction of transcription of 2.1 kb RNA is opposite to the IE mRNA.