ISOLATION OF FELINE IMMUNODEFICIENCY VIRUS FROM DOMESTIC CATS

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Attempts were made to isolate feline immunodeficiency virus (FIV) from 23 domestic cats showing various clinical signs. T-lymphotropic viruses with Mg^{++}-dependent reverse transcriptase (RT) were isolated from 2 cats with chronic stomatitis.

Virus isolation was achieved by cocultivation of peripheral blood lymphocytes (PBL) from the cats that were positive for feline leukemia virus (FeLV) p27 antighn by ELISA, with concanavalin A-stimulawed PBL from normal cats. A cytopathic effect (CPE) consisting of ballooning degeneration and giant cell formation was noted in the cell cultures within 3–10 days of cocultivation. Cytopathic changes were associated with the appearance of Mg^{++}-dependent RT in the culture fluids. The cell cultures showing CPE and RT activity were negative for FeLV p27 antigen. Electron microscopy of the RT-positive cultures revealed virus particles of morphologically typical lentivirus.

Blood from one of the cats from which the viruses were isolated was experimentally inoculated into 2 normal cats. Both inoculated cats were positive for FeLV p27 antigen 21 days after the inoculation, showed immunodeficiency-like syndrome, and died 70 days after the inoculation. FIV-like viruses were also isolated from these cats by cocultivation of PBL and the cultures were negative for FeLV antigen. Experimental infection with FIV or FeLV alone has not caused immuno deciciency-like syndrome. These findings suggest that FeLV may play an important role as a cofactor for the exhibition of immunodeficiency syndrome.