

Short Academic Abstract

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M.S.

Veterinary Pathobiology

Phylogenetic Characterization of Canine Distemper Viruses Detected in Naturally Infected North American Dogs

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Graduation Term Winter 2006

In 2004, diagnosis of Canine distemper virus (CDV) infection was established in seven dogs by the presence of lesions, immunohistochemical staining for CDV antigen, and detection of CDV RNA by RT-PCR. To further characterize the CDV strains detected, gene sequences were determined for the hemagglutinin (H), fusion (F) protein and phosphoprotein (P) genes. A total of 4,508 bases were sequenced for the CDV strains detected from each of four cases. Two strains were found to have essentially identical sequences. Phylogenetic analysis suggested an evolutionary relationship between sequences detected in these two strains and those of phocine distemper virus 2 and other CDV strains not previously detected in the United States. Clear phylogenetic relationships were not established for viruses detected in the two additional cases. Importantly, the three CDV strains detected were demonstrated to be genetically distant from known vaccine strains and strains previously reported in the United States.