

## **Aleutian mink disease virus in furbearing mammals in Nova Scotia, Canada**

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Presence of Aleutian mink disease virus (AMDV) was tested in 466 wild animals of 12 furbearing species that were trapped in 10 Nova Scotia counties. DNA was extracted from cell-free spleen homogenates by magnetic beads and presence of the virus was tested for by PCR using two primer pairs, each with three DNA volumes. Anti-viral antibodies in spleen homogenates were also tested by counterimmunoelectrophoresis (CIEP) in duplicate. Positive PCR or CIEP samples were detected in 96.9% of 64 mink, 70.5% of 61 weasels, 25.0% of 8 skunks, 18.2% of 11 otters, 10.6% of 85 raccoons and 10.0% of 20 bobcats. Samples of six fishers, 24 coyotes, 25 red foxes, 58 beavers, 45 squirrels and 59 muskrats were negative. Anti-viral antibodies were detected in 16 (25%) of the mink and one of the skunk samples, possibly due to the low antibody titer in spleen homogenates. All CIEP positive animals were also PCR positive, except for three mink and one skunk which were PCR negative. This observation could be the manifestation of persistent antibody production and short-lived viral replication which are signatures of AMDV pathogenesis. The numbers of samples amplified by the two primer pairs were significantly different, suggesting that PCR amplification failure of CIEP positive animals could be the result of differences in the sequence of viruses circulating in different animals. The results imply that the combination of CIEP and PCR using multiple primers would increase the accuracy of detecting AMDV exposure in wild animal species. Infected animals were present in all counties from which samples were collected. The high proportion of animals of so many species across the province carrying AMDV has important epidemiological ramifications and could pose a serious threat to ranched mink as well as susceptible wild animal species.