

## **Abstract Title**

Investigating the presence of canine distemper virus in free-ranging skunks in Prince Edward Island, Canada

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## **Abstract Content**

Canine distemper virus (CDV), also known as canine morbillivirus, is an RNA virus that affects various canid species and carnivores worldwide, with a mortality rate of ~50 % in unvaccinated dogs. Free-ranging skunks with CDV typically present with a history of neurologic or respiratory signs, weakness/lethargy, or sudden death. These clinical signs overlap with those seen in other diseases, including skunk adenovirus-1 (SkAdv-1), an emerging pathogen in Canadian skunks. Skunk adenovirus-1 is a DNA virus that infects numerous wildlife species, sometimes causing necrotizing bronchointerstitial pneumonia and tracheitis. In a previous study, skunk samples were screened for SkAdv-1, which was not detected in skunks with pulmonary lesions (n = 5). This study aims to screen spleen and lung samples from free-ranging, SkAdv-1 negative skunks in Prince Edward Island (PEI), Canada, for CDV. The hypothesis is that skunks with respiratory lesions negative for SkAdv-1 will be positive for CDV. A complete postmortem examination was performed on free-ranging skunks submitted to the Canadian Wildlife Health Cooperative, Atlantic Region, between 2020 and 2022, with duplicate tissue samples collected in formalin and stored at -80 °C. Lung and spleen from 49 skunks from PEI will be screened for CDV using RT-PCR. First, raw RNA is extracted from the tissues and DNase-treated to remove genomic DNA

contamination. Next, DNase-treated RNA is reverse-transcribed into complementary DNA and then undergoes PCR. The results of the PCR are visualized using gel electrophoresis. The results of this study will help further define the range of pathogens present in the free-ranging skunk population of PEI.

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