SUNSHINE VIRUS, A NOVEL PARAMYXOVIRUS FOUND IN AUSTRALIAN PYTHON

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ABSTRACT

For decades, Australian veterinarians have been presented with snakes displaying neurorespiratory signs. In most cases, the cause remains elusive. Australian veterinarians provided 463 samples (swabs, tissue and blood) to be screened by one of the authors (THH) for the presence of viruses and nine were isolated from five snakes from two collections. One of these isolates was selected for further testing and through the use of high-throughput sequencing, was identified as a novel paramyxovirus.¹ Phylogenetic analysis clustered this virus within the family Paramyxoviridae but outside of both subfamilies. The virus was named Sunshine virus after the geographical origin of the first isolate: the Sunshine Coast of Queensland, Australia.

PCR primers were designed that could detect Sunshine virus in various clinical sample types. This enabled animals that were infected with Sunshine virus to be identified and clinical data that is associated with Sunshine virus infection could then be described. Sunshine virus has so far only been detected in pythons. Clinical signs, when present, are typically non-specific (e.g. regurgitation, lethargy, inappetance) and/or can be localized to the neurological and/or respiratory systems but there was a poor correlation between infection with Sunshine virus and the presence of clinical signs. Not all snakes with Sunshine virus face imminent death. Gross pathology was usually unremarkable. Histopathological findings consisted primarily of white matter spongiosis and gliosis of the hindbrain with a mild bronchointerstitial pneumonia. Sunshine virus was detected most often in samples of brain.

LITERATURE CITED