

First Record of Paralytic Rabies in Tapir (*Tapirus terrestris*) in Argentina

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INTRODUCTION

Surveillance of pathogens in wildlife is an essential component of the One Health approach, particularly for rabies monitoring. Due to its zoonotic nature and the economic impact on livestock, maintaining epidemiological surveillance to detect and control outbreaks in animals and prevent human cases is essential and therefore a key factor in progressing towards the goal of eliminating dog-transmitted rabies by 2030. This study reports a case of rabies in a 12-year-old male *Tapirus terrestris* housed at the Guaycolec Wildlife Station, Formosa, Argentina.

METHODS

The animal exhibited progressive neurological signs, as limb paralysis, dysphagia, and nystagmus, leading to its death. A complete necropsy was performed, and the brain was sent to the laboratory. Direct immunofluorescent (DIF), virus isolation in cell culture and mice, conventional and real time PCR were performed. Molecular diagnosis was performed using real-time RT-PCR, conventional PCR, sequencing by Sanger and phylogenetic analysis with MEGA X.



Figure 1: Neurological signs such as pedaling and opisthotonus can be observed.

RESULTS

Agent detection techniques were positive (Figure 2). Histopathological studies revealed a nonsuppurative encephalitis (Figure 3.1), with lymphocytic perivascular cuffs in the grey matter (Figure 3.2), focal gliosis (Figure 3.3) and neuronal vacuolization, with acidophilic intracytoplasmic inclusion bodies (Figure 3.4, arrow).

Both, genetic and antigenic characterization techniques related the sample to variant 3 (Figure 4).

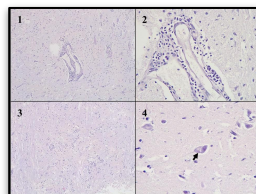


Figure 3: Brain (gray matter) with nonsuppurative encephalitis (hematoxylin&eosin).

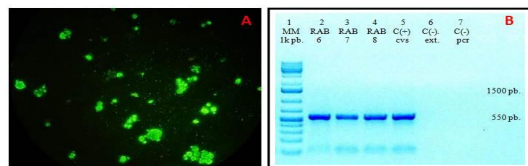
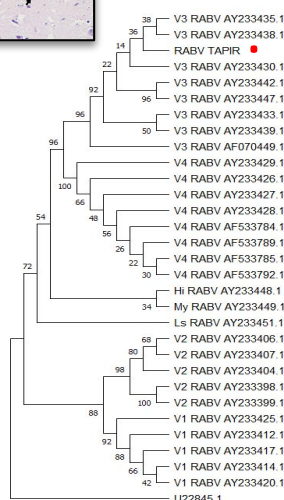


Figure 2: A. DIF of isolated in BHK-21. B. Conventional PCR result by agarose gel electrophoresis. Lane N°1: leader, lane N°2,3 and 4: processed sample of the tapir, lane N°5: positive control and lane N°6: Negative control. In the samples and positive control an amplicon of 550 pb is observed, according to the primer (3S and 304) used, that amplify the last segments of the nucleoprotein.

Figure 4: The phylogenetic analysis was carried out with representatives of each variant. The sequences used are identified with their Genbank accession number. The analyzed isolate is identified with a red dot, and is genetically close to variant 3.



CONCLUSION

This finding reinforces the need to maintain wildlife epidemiological surveillance systems to detect and control rabies virus circulation. Rescue centers play an important role in receiving specimens from human-wildlife interface areas. Early detection of wildlife cases is critical to prevent rabies spread and to develop effective control strategies in both natural and urban environments.