TITLE: IDENTIFICATION AND CHARACTERIZATION OF PBV (*PICOBIRNAVIRUS*) IN WILD ANIMAL IN SANTA CATARINA, BRAZIL

AUTHORS: RECHE, P.C.D.[1]; LORENCENA, D.[2]; MUCELLINI, C. I.[2]; TAKIUCHI, E.[2]; SOUZA, A.L.F.[1]; SILVA, M.F.[1]; MILCZEWSKI, V.[1]; CLAUS, M.P.[1]

INSTITUTION: [1]INSTITUTO FEDERAL CATARINENSE, CAMPUS ARAQUARI, SC (BR 280, KM 27, CEP 89245-000, SANTA CATARINA – SC, BRAZIL). [2]UNIVERSIDADE FEDERAL DO PARANÁ, CAMPUS PALOTINA, PR (R. PIONEIRO, 2153, CEP 85950-000, PARANÁ, BRAZIL).

ABSTRACT:

The genus *Picobirnavirus* (PBV) belongs to family *Picobirnaviridae* and the nomenclature is directly related to the structural characteristics. The prefix *pico* refers to the small size of the non-enveloped virion and *birna* represents the viral genome consisting of two double stranded RNA segments (dsRNA). Based on the genetic variability of segment 2, which encodes RNA-dependent viral RNA polymerase (RdRp), PBVs are classified into two genogroups: genogroup I (GI) and genogroup II (GII). To evaluated the presence of PBV, 26 fecal samples were analyzed from wild animals from Itajaí and Joinville, cities located in the northern region of the Santa Catarina state, Brazil. The biological samples used in this study were from the following animal species: *Amazona aestiva* (blue-fronted parrot), *Ara ararauna* (blue-and-gold macaws), *Ara macao* (scarlet macaw), *Asio clamator* (striped owl), *Brotogeris tirica* (green parakeet), *Callithrix penicillata* (marmoset), *Eupsittula aurea* (king parakeet), *Ortalis guttata* (aracuan), *Pionus maximiliani* (green mayan), *Procyon cancrivorus* (crab-eating raccoon), *Puma yagouaroundi* (cat jaguarundi), *Pyrrhura* (green-cheeked parakeet), *Ramphastos dicolorus* (green-billed toucan), *Rupornis magnirostris* (roadside Hawk), *Tamandua tetradactyla* (lesser anteater), *Tupinambis merianae* (tegu lizard) e *Tyto furcata* (barn owl pellets). The dsRNA of PBV was investigated by polyacrylamide gel electrophoresis (PAGE) and RT-PCR. The RT-PCR was carried out using the primers PicoB25 and PicoB43 that amplify a 201 bp fragment of the RdRp gene of GI PBV. Due to the low sensitivity of PAGE, PBV was detected only by RT-PCR, yielding an amplicon of 201 bp (1/26; 2.6%).The only positive sample was obtained from a blue-fronted Parrot (*Amazona aestiva*), kept in captivity, without diarrhoea at the moment of sampling. Previous studies on etiology of PBV in captive animals presented lack of association of PBV with diarrhoea, suggesting that captive animals might be acting either as the reservoir or persistent asymptomatic carriers. This is the first molecular detection by RT-PCR in wild animals in Santa Catarina state, Brazil. Further studies are needed to understand the relationship of high genetic variability in the epidemiology and evolution of PBV in animals and humans, in order to contribute to the recognition of the role of these viruses in enteric disease, as well as to increase scientific knowledge about the zoonotic potential of this emergent pathogen.

Keywords: Blue-fronted Parrot; Picobirnavirus; RNA; RT-PCR; Wild animals

Development Agency: CAPES