

4th World Congress on Virology

October 06-08, 2014 Hilton San Antonio Airport, TX, USA

Parvoviruses infecting captive and wild living chimpanzees

Brozova Kristyna¹, Hrazdilova Kristyna¹, Piel Alexander K^{2,3}, Stewart Fiona A³, Petzelkova Klara J^{4,5,6} and Celer Vladimir¹

¹University of Veterinary and Pharmaceutical Sciences, Czech Republic

²University of California, La Jolla, USA

³University of Cambridge, UK

⁴Institute of Parasitology, Academy of Sciences of the Czech Republic, Czech Republic

⁵Institute of Vertebrate Biology, Academy of Sciences of the Czech Republic, Czech Republic

⁶Liberec Zoo, 460 01 Liberec, Czech Republic

Parvoviridae family contains a group of small non-enveloped viruses with ssDNA genome containing 2 or 3 ORFs that may infect large number of mammals including humans and primates. The most important and studied parvoviruses infecting primates and humans are genus *Bocavirus*, *Erythrovirus* B19 and *Parvovirus* 4 (PARV4). Antibodies against these viruses were previously detected in wild living primates. *Bocavirus* and PARV4 DNA was described in several cases in wild living chimpanzees and gorillas. Presence of antibodies and viruses itself in studied animals indicate frequent exposure. Although parvoviruses are often detected, no evidence of cross species transmission between people and primates has been described. In this study we analyze prevalence and the phylogenetic relationship of members of the *Parvoviridae* family in captive and wild living savanna-woodland chimpanzees (*Pan troglodytes schweinfurthii*) from Ugalla, Tanzania.

Nested PCR with degenerated primers annealing in NS1 gene was performed on two sets of samples. The first set of fecal samples was obtained from captive living chimpanzees (n=25), second one from wild living savanna-woodland chimpanzees (n=113). Using PCR, presence of *Bocavirus* DNA was confirmed in one captive living chimpanzee and in 13 wild living chimpanzee samples. Presence of PARV4 DNA was confirmed in one wild living chimpanzee sample.

Our phylogenetic analysis of *Bocavirus* NS1 gene revealed two distinct groups of bocaviruses circulating in wild chimpanzees, with the first group clustering with human bocavirus 1 (HBoV1), second one with HBoV3. The captive chimpanzee isolate is more related to human bocaviruses than those derived from wild living primates and raises a question of potential cross species transmission. Phylogenetic analysis of wild living chimpanzee PARV4 isolate confirmed the existence of a separated group of wild primates PARV4 isolates that form a distinct clade not related to any known human isolates.

This work was partially funded by CEITEC CZ.1.05/1.1.00/02.0068, IGA 82/2014/FVL, OP VK CZ.1.07/2.3.00/20.0300 and OP VK CZ.1.07/2.3.00/30.0014.

brozovak@vfu.cz