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Six novel gammaherpesviruses of Afrotheria provide insight into the early divergence of the Gammaherpesvirinae.

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Source

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Abstract

The Afrotheria represent an early branching of placental mammals. Only two herpesviruses from Afrotheria have been previously identified, and the genus Proboscivirus in the subfamily Betaherpesvirinae has been proposed for them. Six novel gammaherpesviruses were identified in four species in the superorder Afrotheria by detection and analysis of their DNA polymerase genes. Elephantid herpesvirus 3 (ElHV3) and Elephantid herpesvirus 4 (ElHV4) were identified from conjunctival swabs from Asian elephants (Elephas maximus). ElHV3 was also found in a vaginal swab from one elephant with vaginitis. Elephantid herpesvirus 5 (ElHV5) was identified from vaginal swabs of two Asian elephants with vaginal plaques. Elephantid herpesvirus 6 was discovered in a conjunctival swab from an African elephant (Loxodonta africana). Procavid herpesvirus 1 (PrHV1) was found in spleen and conjunctival swabs of rock hyrax (Procavia capensis). Trichechid herpesvirus 1 (TrHV1) was identified from skin and buffy coats of Florida manatees (Trichechus manatus latirostris). ElHV3 and ElHV4 form a distinct cluster, and ElHV5, ElHV6, TrHV1, and PrHV1 form a second cluster. These viruses may have codiverged with their host species. Phylogenetic analysis of these novel herpesviruses suggests that two separate groups of gammaherpesviruses may have codiverged with the Afrotheria.

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