

Picornaviridae: 26 Genera, 46 Species and Growing...

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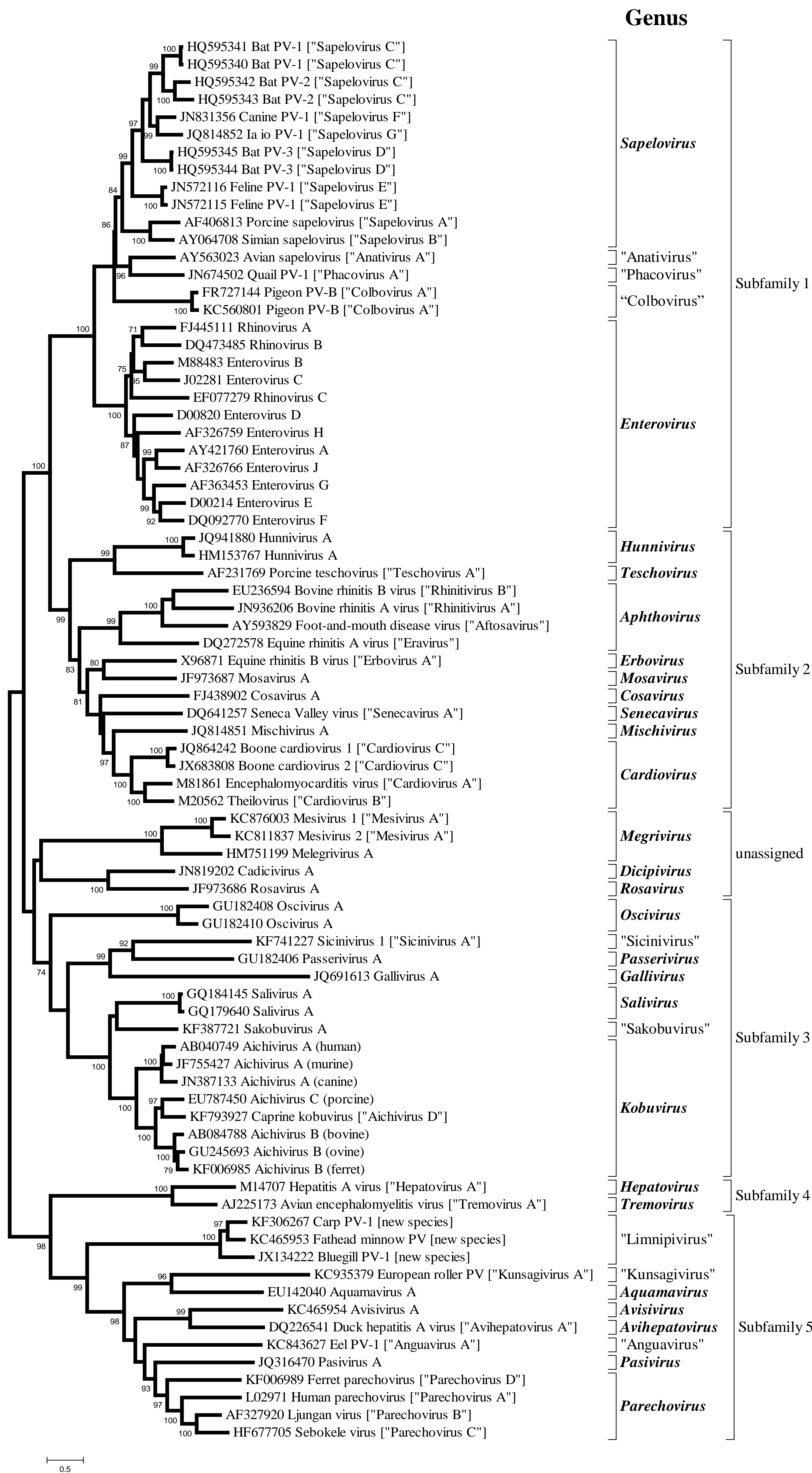


Fig. 1. Maximum Likelihood tree showing the relationships between the capsid proteins of picornaviruses. The best aa substitution model was mtREV with freqs. (+F) with gamma distributed with invariant sites (G+I) as estimated in MEGA 6.06. Proposed new or renamed species are shown between square brackets and quotation marks. Proposed new genera are indicated to the right inside quotation marks. The same general relationships are also evident on a tree of the 3D polymerase (data not shown). Species names should be in italics, but due to limitations in MEGA this was not possible.

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Current picornavirus classification

The family *Picornaviridae* currently contains 37 species grouped into the following 17 genera: *Aphthovirus*, *Aquamavirus*, *Avihepatovirus*, *Cardiovirus*, *Cosavirus*, *Dicipivirus*, *Enterovirus*, *Erbovirus*, *Hepatovirus*, *Kobuvirus*, *Megrivirus*, *Parechovirus*, *Salivirus*, *Sapelovirus*, *Senecavirus*, *Teschovirus* and *Tremovirus*.

A further nine genera (*Avisivirus*, *Gallivirus*, *Hunnivirus*, *Mischivirus*, *Mosavirus*, *Oscivirus*, *Pasivirus*, *Passerivirus* and *Rosavirus*) and their constituent species await final ratification by the full International Committee on Taxonomy of Viruses (ICTV) membership (voting closes on the 18th March 2014). This will bring the total number of species to 46 and genera to 26 (Fig. 1).

Renaming of species to remove host names

The further renaming of picornavirus species to both remove host names and to provide consistency between names is under discussion within the Study Group. This has been achieved for the genus *Enterovirus* with the removal of human, bovine and porcine names. We hope to extend this to others, for example, *Porcine sapelovirus* to *Sapelovirus A*, *Simian sapelovirus* to *Sapelovirus B*, *Human parechovirus* to *Parechovirus A*, *Porcine teschovirus* to *Teschovirus A*, etc. Alongside this species such as *Ljungan virus* would become *Parechovirus B*, etc.

Future genus and species proposals

Another 20 candidate species have been described some of which may form at least another eight genera. Four recently described picornaviruses (PV) of fish, i.e. eel PV (Fichtner et al., 2013), bluegill PV (Barbknecht et al., 2013), carp PV (Lange et al., 2014) and fathead minnow PV (Phelps et al., 2014), each a candidate new species, probably fall into two novel genera. Picornaviruses of birds, i.e. pigeon PV B (Kofstad & Jonassen, 2011), quail PV (Pankovics et al., 2012) and European roller PV (Boros et al., 2013) also represent candidate new species belonging to distinct genera. Other viruses found in wild pigeons (mesiviruses; Phan et al., 2013) may belong to the genus *Megrivirus*, while some viruses of bats (Lau et al., 2011; Wu et al., 2012), cats (Lau et al., 2012) and dogs (Woo et al., 2012) are probably members of the *Sapelovirus* genus.

All names are provisional and still under discussion, so should not be used in publications without qualification.

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