Template for Taxonomic Proposal to the ICTV Executive Committee

To merge two existing Genera

Code† 2005.264V.04 To remove from the existing genus in the family°*

the following species:

- Human rhinovirus A
- Human rhinovirus B
- And tentative species
- Bovine rhinovirus 1 (BRV-1)
- Bovine rhinovirus 2 (BRV-2)
- Bovine rhinovirus 3 (BRV-3)

Code† 2005.265V.04 To assign the species above in the existing genus:* in the family°*

Code† 2005.266V.04 To remove the existing genus:* in the family°*

† Assigned by ICTV officers
° leave blank if inappropriate
* repeat these lines and the corresponding arguments for each genus created in the family

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Old Taxonomic Order

<table>
<thead>
<tr>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>Type Species</th>
</tr>
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<tbody>
<tr>
<td>Picornaviridae</td>
<td></td>
<td>Enterovirus</td>
<td></td>
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<tr>
<td>Picornaviridae</td>
<td></td>
<td>Rhinovirus</td>
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New Taxonomic Order

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ICTV-EC comments and response of the SG

Argumentation to merge and rename the genus

Historically, the human pathogens enteroviruses and rhinoviruses have been classified into separate genera (Enterovirus and Rhinovirus respectively), largely on the basis of classical criteria such as pathogenicity and the acid stability of enteroviruses/lability of rhinoviruses. Sequence analysis reveals that there are no significant differences in genome organisation or particle structure (Kitamura et al., 1981; Stanway et al., 1984; Laine et al., 2005). In both the standard regions used for picornavirus taxonomy (P1 and 2C+3CD) species representing these genera are much more closely related that those representing other distinct Picornaviridae genera (Figure 1). Also, in the P1 region, the genera are not monophyletic. Furthermore, it has recently been found that in sequence terms human rhinovirus 87 is in fact an acid labile member of the species Human enterovirus D, suggesting that acid stability/lability is not always a reliable classification criterion (Blomqvist et al., 2002; Savolainen et al., 2002). Thus, it is difficult to justify the current Enterovirus/Rhinovirus division and it is proposed to merge these genera, giving a single genus, Enterovirus.

Origin of the proposed new genus name

The name Enterovirus is unchanged.

References


Annexes:

Figure 1: Phylogenetic trees showing the relationships between the species and genera of the family Picornaviridae. (a) Protein P1 and (b) Protein 2C+3CD. The Neighbor-joining trees were produced and bootstrapped (1000 replicates) using CLUSTALX and an amino acid weight matrix (BLOSUM). The trees were drawn using TreeView v1.5.2. Only bootstrap values of >90% are indicated. Figure taken from the 8th Report.