



This form should be used for all taxonomic proposals. Please complete all those modules that are applicable (and then delete the unwanted sections). For guidance, see the notes written in blue and the separate document "Help with completing a taxonomic proposal"

Please try to keep related proposals within a single document; you can copy the modules to create more than one genus within a new family, for example.

MODULE 1: **TITLE, AUTHORS, etc**

<b>Code assigned:</b>	<b>2014.012aV</b>	(to be completed by ICTV officers)
<b>Short title:</b> Rename one (1) genus and twenty-five (25) species in the family <i>Arenaviridae</i> (e.g. 6 new species in the genus <i>Zetavirus</i> )		
<b>Modules attached</b> (modules 1 and 9 are required)	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input checked="" type="checkbox"/> 9 <input checked="" type="checkbox"/>	

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**List the ICTV study group(s) that have seen this proposal:**

A list of study groups and contacts is provided at <http://www.ictvonline.org/subcommittees.asp> . If in doubt, contact the appropriate subcommittee chair (fungal, invertebrate, plant, prokaryote or vertebrate viruses)

ICTV *Arenaviridae* Study Group (Michael Buchmeier, Remi Charrel, Christopher S. Clegg, Sebastien Emonet, Jean-Paul Gonzalez, Igor S. Lukashevich, Clarence J. Peters, Sheli R. Radoshitzky, Victor Romanowski, Maria S. Salvato, Joseph L. DeRisi, Mark D. Stenglein, and Juan C. de la Torre)

## ICTV-EC or Study Group comments and response of the proposer:

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EC Comments: the decision was Uc. The committee would prefer removal of accents from species names to improve searchability.

Response by the ASG: The members of the *Arenaviridae* Study Group have discussed this issue at length. We respectfully disagree with the EC's preference. The consensus opinion of the group is that species names should be written correctly and that international languages need to be respected, especially in regard to decisions of the *International Committee on Taxonomy of Viruses*. We find English centrism inappropriate, in particular in regard to the fact that arenaviruses that cause severe human disease and whose names contain diacritical marks are exclusively endemic in Spanish/Portuguese-speaking countries, which use extended Latin alphabets. We consider our duty as scientists to defend all sciences, including linguistics and the art of writing. We cannot prevent mistakes made by authors, publishers or database programmers, although in today's Unicode-driven world it is not difficult anymore to accommodate diacritics in programming and certainly not in writing. Moreover, as scientists we should certainly not add voluntary faults.

Regarding searchability, we would like to bring to the EC's attention the fact that diacritical marks get automatically removed in PubMed, GenBank, and most other databases that currently cannot handle diacritics. For instance, a search for the correct "Pichindé" in PubMed yields 222 results; likewise a search for the incorrect "Pichinde" yields the same 222 results. On the other hand, a Google search using the incorrect "Pichinde" yields only 35,400 results, whereas a search with the correct "Pichindé" yields more than 86,000 results – i.e., including diacritics does not affect scientific searches but *increases* general searchability.

Comments by the EC to the ASG Response: As you know, there has been a very extensive discussion of this problem amongst members of the old EC (who made the original decision) and members of the new (2014-2017) EC. I will not bore you with what became, in my opinion, a very semantic discussion. My view is that the EC should direct proposers to restrict themselves to the 26 letter Latin alphabet in order to name virus species. However, I also recognise that it is unreasonable to insist upon this, retrospectively. Therefore, I will accept the modified proposal as it stands and recommend approval by the EC. Unfortunately, I know that there are some very strong views amongst the EC members on this point and, again, it might get delayed until the 2015 meeting.

**Response by the ASG:** We are delighted and thank the Subcommittee Chair for accepting TP 2014.012. We do not foresee problems with this proposal during EC discussions this year for the following reasons:

- The ASG prepared its proposal based on existing ICVCN Rules as requested by the ICTV. At the time of proposal writing, submission, and presently, the ICVCN does not specify diacritical marks to be problematic. The only Rule in regard to taxon names that applies is ICVCN 3.13 ("Subscripts, superscripts, oblique bars and non-Latin letters may not be used in taxon names"), which implicitly states that the alphabet to be used for taxa is the Latin one. As all letters containing diacritical marks proposed by us are Latin letters, derived from Latin-American languages, we do not see our proposal in violation of the current Code.
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## ICTV-EC or Study Group comments and response of the proposer:

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- Only five of the proposed species names are affected by this issue, whereas the majority of the proposed species names and the proposed genus name should be acceptable for the EC without any further changes given that there were no problems seen with them. Importantly, the five proposed names affected by this issue (*Amaparí mammarenavirus*, *Junín mammarenavirus*, *Paraná mammarenavirus*, *Pichindé mammarenavirus*, and *Sabiá mammarenavirus*) are not entirely novel names with new diacritics being introduced – instead, the diacritics already exist in three ICTV-accepted species names (*Junín virus*; *Paraná virus*; *Sabiá virus*; see 9<sup>th</sup> ICTV Report – the other two are corrections). The current valid standing of these three species names indicate that diacritics have been acceptable to the ICTV EC in the past, and also that diacritics would continue to exist in arenavirus taxon names even if the current proposal would be tabled by the EC (i.e. tabling it would not solve a possible issue for the time being).

The ASG recognizes that some EC members are uncomfortable with diacritical marks, although it remains unclear to us which complication would actually arise from their use. Quite possible the larger virology community will ignore diacritics, in which case the status quo would match the position of the EC members who are uncomfortable with diacritical marks, while the ICTV continues to correctly spell international words, thereby leading by example. However, the ASG is prepared to revisit this issue once a) a proposal to exclude diacritical marks from taxon names is accepted by the EC and later ratified and b) if that same proposal stipulates the retrospective removal of diacritics in already existing taxon names (which would be somewhat at odds with the “stability principle” of taxon names, however). If such a proposal results in a change in the Code, the ASG will of course abide by it, revisit names in question, and, most likely, replace names that in normal writing require diacritics with novel names that do not (rather than just remove diacritics). In addition, novel developments in arenavirus taxonomy might require large reorganizations that could make names that contain diacritics obsolete.

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Date first submitted to ICTV:

7/2/2014

Date of this revision (if different to above):

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MODULE 8: **NON-STANDARD**

Template for any proposal not covered by modules 2-7. This includes proposals to change the name of existing taxa (but note that stability of nomenclature is encouraged wherever possible).

non-standard proposal

Code	<b>2014.012aV</b>	(assigned by ICTV officers)
<p><b>Title of proposal:</b> in the family <i>Arenaviridae</i> change the name of genus <i>Arenavirus</i> to <i>Mammarenavirus</i> and convert the names of its constituent species to a binomial format, by appending the name <i>Mammarenavirus</i> to each existing name</p>		

**Text of proposal:**

The recent discovery of phylogenetically distinct arenaviruses in snakes (Stenglein *et al.*, 2012; Bodewes *et al.*, 2013, 2014; Hetzel *et al.*, 2013, 2014) challenged the current taxonomy of the family *Arenaviridae*. Pairwise sequence comparison (PASC) and other analyses of the genomes of these viruses revealed the need for the establishment of a second genus in the family *Arenaviridae*, which currently includes only one genus for mammalian arenaviruses, *Arenavirus*. The rationale for the creation of this second genus, *Reptarenavirus*, is outlined in a separate proposal that has been submitted in parallel.

The creation of a second genus in the family *Arenaviridae* creates an ambiguity in regard to the words “arenaviral”, “arenavirus”, and “arenaviruses” – as all three words could refer to members of the entire family *Arenaviridae* (members of the genera *Arenavirus* and *Reptarenavirus*) or only to those of the genus *Arenavirus*. We therefore propose to change the genus name *Arenavirus* to remove the ambiguity. In line with the name *Reptarenavirus* (sigil of “reptile” and “arenaviruses”), we propose the name *Mammarenavirus* for the genus for all currently known mammalian arenaviruses (sigil of “mammals” and “arenavirus”):

*Arenavirus* → *Mammarenavirus*.

At the moment, all accepted arenavirus species names are identical in spelling to the names of their virus members and only differ by presence or absence of italics and/or capitalization (e.g., the species *Lassa virus* is the taxonomic home for Lassa virus; the species *Lymphocytic choriomeningitis virus* is the taxonomic home for lymphocytic choriomeningitis virus). Consequently, species and virus names are constantly confused. To remove this ambiguity, we propose to replace the current species names with non-Latinized binomial names distinct from virus names (van Regenmortel *et al.*, 2010) :

Current (ICTV-accepted) species name	Proposed species name	Name of virus member	
<i>Allpahuayo virus</i>	<i>Allpahuayo mammarenavirus</i>	Allpahuayo virus	
<i>Amapari virus</i>	<i>Amapari mammarenavirus</i>	Amapari virus	
<i>Bear Canyon virus</i>	<i>Bear Canyon mammarenavirus</i>	Bear Canyon virus	
<i>Chapare virus</i>	<i>Chapare mammarenavirus</i>	Chapare virus	
<i>Cupixi virus</i>	<i>Cupixi mammarenavirus</i>	Cupixi virus	
<i>Flexal virus I</i>	<i>Flexal mammarenavirus</i>	Flexal virus	

<i>Guanarito virus</i>	<i>Guanarito mammarenavirus</i>	Guanarito virus	
<i>Ippy virus</i>	<i>Ippy mammarenavirus</i>	Ippy virus	
<i>Junín virus</i>	<i>Junín mammarenavirus</i>	Junín virus	
<i>Lassa virus</i>	<i>Lassa mammarenavirus</i>	Lassa virus	
<i>Latino virus</i>	<i>Latino mammarenavirus</i>	Latino virus	
<i>Lujo virus</i>	<i>Lujo mammarenavirus</i>	Lujo virus	
<i>Luna virus</i>	<i>Luna mammarenavirus</i>	Luna virus	
<i>Lymphocytic choriomeningitis virus</i>	<i>Lymphocytic choriomeningitis mammarenavirus</i>	lymphocytic choriomeningitis arenavirus	
<i>Machupo virus</i>	<i>Machupo mammarenavirus</i>	Machupo virus	
<i>Mobala virus</i>	<i>Mobala mammarenavirus</i>	Mobala virus	
<i>Mopeia virus</i>	<i>Mopeia mammarenavirus</i>	Mopeia virus	
<i>Oliveros virus</i>	<i>Oliveros mammarenavirus</i>	Oliveros virus	
<i>Paraná virus</i>	<i>Paraná mammarenavirus</i>	Paraná virus	
<i>Pichinde virus</i>	<i>Pichindé mammarenavirus</i>	Pichindé virus	
<i>Piritai virus</i>	<i>Piritai mammarenavirus</i>	Piritai virus	
<i>Sabiá virus</i>	<i>Sabiá mammarenavirus</i>	Sabiá virus	
<i>Tacaribe virus</i>	<i>Tacaribe mammarenavirus</i>	Tacaribe virus	
<i>Tamiami virus</i>	<i>Tamiami mammarenavirus</i>	Tamiami virus	
<i>Whitewater Arroyo virus</i>	<i>Whitewater Arroyo mammarenavirus</i>	Whitewater Arroyo virus	

## MODULE 9: **APPENDIX**: supporting material

additional material in support of this proposal

### **References:**

Bodewes, R., Kik, M.J.L., Raj, V.S., Schapendonk, C.M.E., Haagmans, B.L., Smits, S.L., and Osterhaus, A.D.M.E. (2013). Detection of novel divergent arenaviruses in boid snakes with inclusion body disease in The Netherlands. *J. Gen. Virol.* 94, 1206–1210.

Bodewes, R., Raj, V.S., Kik, M.J.L., Schapendonk, C.M., Haagmans, B.L., Smits, S.L., and Osterhaus, A.D.M.E. (2014). Updated phylogenetic analysis of arenaviruses detected in boid snakes. *J. Virol.* 88, 1399–1400.

Hetzel, U., Sironen, T., Laurinmäki, P., Liljeroos, L., Patjas, A., Henttonen, H., Vaheri, A., Artelt, A., Kipar, A., Butcher, S.J., et al. (2013). Isolation, identification, and characterization of novel arenaviruses, the etiological agents of boid inclusion body disease. *J. Virol.* 87, 10918–10935.

Hetzel, U., Sironen, T., Laurinmäki, P., Liljeroos, L., Patjas, A., Henttonen, H., Vaheri, A., Artelt, A., Kipar, A., Butcher, S.J., et al. (2014). Reply to “Updated phylogenetic analysis of arenaviruses detected in boid snakes.” *J. Virol.* 88, 1401.

Stenglein, M.D., Sanders, C., Kistler, A.L., Ruby, J.G., Franco, J.Y., Reavill, D.R., Dunker, F., and Derisi, J.L. (2012). Identification, characterization, and in vitro culture of highly divergent arenaviruses from boa constrictors and annulated tree boas: candidate etiological agents for snake inclusion body disease. *mBio* 3, e00180–00112.

Van Regenmortel, M.H., Burke, D.S., Calisher, C.H., Dietzgen, R.G., Fauquet, C.M., Ghabrial, S.A., Jahrling, P.B., Johnson, K.M., Holbrook, M.R., Horzinek, M.C., Keil, G.M., Kuhn, J.H., Mahy, B.W., Martelli, G.P., Pringle, C., Rybicki, E.P., Skern, T., Tesh, R.B., Wahl-Jensen, V., Walker, P.J., and Weaver, S.C. (2010). A proposal to change existing virus species names to non-Latinized binomials. *Arch. Virol.* 2010 155, 1909-1919.

### **Annex:**

Include as much information as necessary to support the proposal, including diagrams comparing the old and new taxonomic orders. The use of Figures and Tables is strongly recommended but direct pasting of content from publications will require permission from the copyright holder together with appropriate acknowledgement as this proposal will be placed on a public web site. For phylogenetic analysis, try to provide a tree where branch length is related to genetic distance.

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