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## Letter to the Editor

## Reply to “Misconceptions and misinformation about bats and viruses”



Firstly, we welcome the letter of Puechmaile et al about our review article (Bonilla-Aldana et al., 2021). We agree that bats have received considerable attention as potential reservoirs of several zoonotic viruses, which is the main focus of our narrative review article. Nevertheless, although highlighted for the SARS-CoV-2/COVID-19 situation, this emerging coronavirus has not been the only concern over the last decades regarding bats. We strongly disagree in the wrong and biased appreciation of Puechmaile et al regarding our article. We include information based on multiple sources; we cited 94 articles from multiple journals so far, multiple authors and countries, related to studies and other reviews of different natures, which is usually above the number of included references for a narrative review, as our article is. We developed a review article, not a “study” as incorrectly stated by Puechmaile et al. Secondly, this is a narrative review (not a systematic review).

Certainly we were informed about the correspondence you sent to the Journal, before the current letter, asking “retraction” of our review article, which request was clearly dismissed by the Journal and the Editors. As the letter was directed to a preproof version of our manuscript (not a definitive version, an article in press that still may undergo enhancements and in which the text could still change), we considered many of the suggestions of the initial letter, and as Puechmaile et al clearly stated, we substantially amended and expanded our article, even considered their recommended articles. We included references suggested. We accepted their comments for the article's improvement, similar to what occurs during peer-review processes, and we cited many of the references suggested by Puechmaile et al, in addition to other new references cited. Especially with SARS-CoV-2/COVID-19, over the last months, new significant references have been published (Nazir et al., 2021), and this is not only a controversial topic, as is derived from the concern of Puechmaile et al, but rapidly changing, as multiple studies on it are under development (Motayo et al., 2020; Streicker and Gilbert, 2020; Schlottau et al., 2020; Wacharapluesadee et al., 2021; Kia et al., 2021). We acknowledge some typos present in the final version, inadvertently uncorrected during the proofs stage.

Regarding nomenclature, we have to repeat that the main focus of our review is on the viral infectious diseases that have been reported in bats in different sources, cited, not on taxonomy. We clearly included the Yinpterochiroptera and Yangochiroptera subdivision (Bonilla-Aldana et al., 2021). In addition, we mentioned the other two. Those additional classifications exist, no matter consensus or agreement on their use or reference by Puechmaile et al. Although for biologists, bat evolution, ecology and taxonomy is interesting, that, again, is not the focus of our review article. Viral infectious agents

present or reported in bats are, doubtless, a matter of concern for public health, where we agree more studies are certainly needed over time (Coertse et al., 2021).

Our article is not a systematic review, is a narrative review on the available information in cited papers. We agree that for some of the viruses, as we clearly stated in the article, their role still needs to be fully confirmed and understood. Particularly, transmission chains still need more study. We wanted to call attention to and raise the awareness of the potential viral threats that may come from bats, some of them clearly undeniable, as is the case in rabies. Puechmaile et al misinterpreted the section on this virus. Clearly in urban areas human cases of rabies are fundamentally related to domestic animals such as dogs, but in wild natural habitats, wild animals such as bats are related and involved in the transmission of rabies in other animals (livestock) and humans.

As we clearly stated, we provided an updated narrative review, showing information on a wide range of viral pathogens that have been reported in bats. Specific articles focused on particular pathogens also have been published and are available. More studies certainly are needed to clarify specifically in detail the relative importance, transmission methods, and impact of viral pathogens that may be present, including not only those already reported, but also new emerging pathogens that deserve more studies by multidisciplinary teams of researchers, collaborating in a constructive way, in *pro* of the global public health, given the importance that pathogens, such as SARS-CoV-2, represent for the humankind. Anyone trying to make science, in any group of infectious diseases, should be more open, less rigid and less dogmatic, and consider to work friendly and collaboratively, including experts in infectious from multiple backgrounds as we did in this article. Otherwise you will only stand from a personal biased point of view, as some biologists such as Puechmaile et al did with their negative comments. Finally, we do not blame the bats for the SARS-CoV-2 and other viral epidemics and pandemics, but the impact of human activity on wildlife conservation, among many other anthropogenic and non-anthropogenic interplaying factors (Turcios-Casco and Cazzolla Gatti, 2020).

**Conflict of interest**

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