

Interactive comment on “Experimental fossilisation of viruses from extremophilic Archaea” by F. Orange et al.

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The present study investigated the mineralization (with Si) of 2 types of viruses displaying different morphologies and likely, different surface reactivity. The results of this study are interesting in the sense that they show that different silicification patterns occur in the presence of 2 different viruses and that their potential preservation and interpretation in the geological record are problematic. However, the results remain preliminary at best since the authors did not take into account the role played by the chemistry of the media in both experiments. Both media are saturated with respect to silica (no saturation indices are shown), but what is the speciation of Si in the media? What is the pH? How did it evolve over time? As a result, the differences observed by the authors cannot be solely ascribed to the fact that 2 different viruses were used. In

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addition, the authors do not seem to be aware of recent papers on the mineralization of viruses in natural environments (see papers by Kyle et al, 2008) and of a study on the surface reactivity of a bacteriophage (Daughney et al, 2004). Minor comments are below;

Why was the final concentration of Si in the media estimated instead of measured? What is the composition of the media used for the 2 viruses experiments? What is PEG 6000?

Additional references

Kyle et al., 2008. Virus Mineralization at Low pH in the Rio Tinto, Spain. *Geomicrobiol. J.* 25, 338 - 345

Kyle et al., 2008. Viruses in granitic groundwater from 69 to 450 m depth of the Äspö hard rock laboratory, Sweden. *ISME*, 2, 571–574

Daughney et al., 2004. Adsorption and precipitation of iron from seawater on a marine bacteriophage (PWH3A-P1). *Marine Chem.*, 91, 101-115.

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