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Fossil caries in a Pliocene rodent with a plausible instance of in situ preservation of bacterial remains

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An interesting case of a caries-affected area where bacterial remains were plausibly preserved in situ was found in an isolated tooth of the Plio-Pleistocene dormouse *Glis sackdillingensis* (Rodentia, Gliridae). The sample is 2.9–2.6 million years old, and may be the only described case of a dental pathological condition preserved in a fossil together with the microbial pathogen responsible for its development. The tooth was investigated using various complementary techniques such as Scanning Electron Microscopy with Energy Dispersive Spectroscopy, Microtomography, and Light Microscopy. Available data on dietary habits and lifestyle of modern dormice are extrapolated to explain the origin of the infection. The results of the investigation are presented within the wider context of the fossil record of dental infections and other microbe-related diseases in vertebrates. Possible methodological reasons for the lack of similar reports are also discussed.

Key words: Rodentia, Gliridae, Plio-Pleistocene, enamel caries, bacterial infection.

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