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Amoebae in carbonate precipitating microenvironments in karst caves

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In karst caves several different microniches are inhabited with different microorganisms composing complex consortia. Through their biologic functions, microbes alter the chemistry of their microhabitat, and are involved in both rock-building and rock-weathering processes. Although many different protozoan species have already been identified in caves, their presence and biodiversity in various carbonate precipitating microenvironments in karst caves have not yet been thoroughly examined. In such bacterially rich environments several species of free-living amoebae were identified. Interestingly, the potentially pathogenic *Acanthamoeba castellanii* genotype T4 and *Hartmannella vermiformis*, which both can serve as vectors for intracellular pathogenic bacteria, were isolated from the alkaline environment of a cave pool with floating calcite rafts. Another peculiar biolithogenic carbonate structure with diverse species composition are stromatolitic stalagmites located in an illuminated cave entrance resulting from the abiotic carbonate deposits and partly of biolithogenic activity of cyanoprokaryotes. In this complex consortium an amoeba was isolated which might represent a new species, because it displays only a low sequence identity to all the amoebae which sequences are available to date. Moreover, it is worth to mention that vahlkampfiids were identified from weathered limestone where sometimes secondary carbonate precipitation in pores and on surface occurs.