

Microbial activity affects sulfur distribution in biogenic aragonite

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Trace sulfate in marine carbonates is an important proxy for past seawater properties such as redox conditions and biological activity. In order to investigate the sensitivity of S in biogenic carbonate to earliest diagenetic impact, shells of the marine bivalve *Arctica islandica* and skeleton segments of the coral *Porites* sp. were subjected to anoxic marine bacterial culture incubation experiments. Combined fluorescence microscopy and synchrotron-based analyses revealed modified S distribution and oxidation states within the bivalve shell. In contrast, no significant alteration was detected in the coral. The present data demonstrate the potential of microbial activity to significantly influence the S distribution in biogenic carbonates during earliest diagenesis in the uppermost sediment column.

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