

## Differing utilization of nitrate nitrogen in shallow-water benthic foraminiferal cells under oxic/anoxic conditions

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Some benthic foraminiferal species have been reported to respire nitrate under dysoxic conditions. However, it is still unknown whether they can actually respire nitrate or symbiotic bacteria contribute to the nitrate respiration. We incubated a shallow water benthic foraminifera, *Ammonia beccarii*, under oxic or anoxic conditions to see their nitrate utilizations. We added nitrate intermittently to the cultured bottles and incubated them for 1 month. After the incubation, we measured the  $\delta^{15}N$  of amino acids from cytoplasm and organic matters embedded in carbonate test. The measured nitrogen isotopic ratios indicated that enhanced utilization of nitrate under anoxic conditions. Trophic levels of *A. beccarii* under anoxic conditions suggest large contribution of prokaryotes to the observed nitrate utilizations.

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