



Suites of branched alkanes with quaternary carbon atoms in Miocene and Cretaceous sediments from Shatsky Rise, west-central Pacific, ODP Leg 198.

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Recently, series of branched alkanes with quaternary substituted carbon atoms (BAQCs) have been reported in sediments of diverse ages (modern to Paleoproterozoic) and lithologies (black shales, mudstones, carbonates, phosphorite nodules; Kenig et al., 2003, 2005; Greenwood et al., 2004). The widespread distribution of these compounds, the specificity of their structures and carbon numbers, and their antiquity suggests that they represent bacterial lipids that survive in sediments because they are difficult to metabolize or biodegrade.

The focus of this study is four sediments from Shatsky Rise in the west-central Pacific – three from the lower Aptian (1207B-44R-1 76-77 cm, 1207B-44R-1 103-104 cm, 1214A-23R-1 5-7 cm) that were deposited during oceanic anoxic event 1a, and a condensed clay-rich interval from the early Miocene (1208A-35X-2 100-101 cm). All contain series of 2,2-dimethyl-, 3,3-diethyl-, 3-ethyl-3-methyl-, 5-ethyl-5-methyl-, 5,5-diethyl-, and other branched alkanes that are prominent constituents of three of the samples. The relative abundance of these compounds in the aliphatic hydrocarbon fractions extracted from the lower Aptian sediments seems to increase as their C_{org} contents decrease, consistent with their presumed refractory nature.

References cited:

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