



LIPID COMPOSITION AND MICROBIAL DIVERSITY OF CARBONATE CRUSTS AND MUD VOLCANO DEPOSITS IN THE SOROKIN TROUGH, NE BLACK SEA

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In order to identify prokaryotes involved in AOM, a combination of lipid biomarker analysis, compound-specific carbon isotopic measurements, and 16S rRNA gene sequences was used. Four methane-related carbonate crusts, pelagic sediments and mud volcanic deposits were collected from Odessa, NIOZ and Kazakov mud volcanoes investigated during the 11th Training Through Research expedition (2001) in the Sorokin Trough, NE Black Sea. Strongly depleted archaeal and bacterial SR lipids directly indicate an incorporation of methane-derived carbon into their biomass. Chemotaxonomic and isotopic data suggest that microbial diversities involved in AOM are different among examined carbonates and sediments. This was complementary confirmed by denaturing gradient gel electrophoresis (DGGE) using specific primers for archaea and bacteria. Evidently, this study has implications for identifying additional microbial assemblages involved in AOM subsequently inducing precipitation of carbonates in a various gas-venting environments.