

Microbial abundance and species composition in the Tono subsurface biosphere based on lipid/fatty acid analyses

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Microorganisms are the agent involved in the biogeochemical processes in the subsurface biosphere. However, information about their abundance and species composition is still limited. This study presents the data on microbial abundance and species composition in sedimentary and granite rocks from the depths of ~1 km in the Tono area, central Japan. Abundance of live microorganisms based on phospholipid analysis was estimated to be 10^7 - 10^8 cells g⁻¹ dry rock. Species composition was inferred from the fatty acid composition. The Tono rocks showed the dominance by different types of sulfate-reducing bacteria (SRBs) at different depths of <1 km. This implies the 'habitat segregation' among the Tono SRBs due to various adaptation to physico-chemical parameters in the subsurface rock habitats.