

Microbial ecosystems of thermoacidophilic archaea and archaeal ether lipids as biomarkers

Fumio Kitajima[1], Tasuku Akagi[2], Masaru Tanimoto[3], Tatsushi Murae[4]

[1] Earth and Planetary Sci., Kyushu Univ., [2] Fac. Agricul., Tokyo Univ. Agricul. & Technol., [3] Earth and Planetary Sci., Kyushu Univ, [4] Earth and Planetary Sci, Kyushu Univ.

The hot spring, Yunono-Jigoku (pH5.80), is not suitable for acidophiles, however, the inhabitation of Sulfolobus-like thermoacidophiles and preservation of archaeal ether lipids in the sediment were proved. These thermoacidophiles survived in soil at room temperature for at least six months. Hence, the thermoacidophiles can easily spread from a hot spring to other far apart hot springs. Carbon isotopic discrimination between the substrates and the heterotrophically grown cells of Sulfolobus sp. from Beppu and the close relative of Sulfolobus from Unzen, did not show such large fluctuation depending on substrates as *Fusarium solani* (Fungus) shows. The discrimination did not quite differ from those of the eubacteria, *Pseudomonas aeruginosa* and *Escherichia coli*.