

## Sulfur isotopic study of microbial activity in deep granitic rocks

# Teruki Iwatsuki[1], Yuki Murakami[2], Takeshi Naganuma[3], Hiroshi Satake[4]

[1] JNC-TGC, [2] Biosphere Science, Hiroshima Univ., [3] Appl. Biol. Sci., Hiroshima Univ., [4] Environ. Chem., Toyama Univ.

Sulfur isotopic investigation has been carried out to evaluate the microbial activities in deep granitic rocks at the Tono area. Sulfur isotope ratios of sulfate ion and pyrite range from +5 - +30 permil, -4 - +68 permil-CDT, respectively. The reverse correlation between sulfur isotope ratio and concentration of sulfate ion possibly suggests the microbial reduction process. Sulfur isotopic fractionation factor was estimated as an approximate value  $R_{34}\text{-sulfide} / R_{34}\text{-sulfate} = 0.983 \pm 0.034$ . There is the possibility that pyrite precipitations enriched in  $^{34}\text{S}$  are result in intense reduction of sulfate ion.