

Microorganisms and microbial activities in hydrothermal systems in the Toyoha mine

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Hydrothermal sub-vent system in deep sea is characterized by high pressure, high temperature, no visible light, concentrated heavy metals, and steep gradient of molecular oxygen concentration. We are interested in the oxygen gradient that provides a variety of habitats for anaerobic, microaerobic and aerobic microorganisms. In the present study, we studied microorganisms and microbial activities of hydrothermal system of the Toyoha mine located in Hokkaido, regarding it as a model of the hydrothermal sub-vent system. We found that a microaerobic microbial activity generated a metal sulfide-like black material and then extinguished it, along with the microbial growth. Our finding suggests the possibility that this microbial activity is involved in the biomineralization in the Toyoha mine.