Microbial community analysis of subsurface hydrothermal environments in Toyoha mine, Hokkaido.

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About 10⁵ cells ml-1 of microbes was found in hydrothermal vein in Toyoha mine, Hokkaido. Predominant microbes were expected to be thermophilic and aerobic. MPN analysis implied that hydrothermal water emitted from drilled hole had been contaminated with many mesophilic aerobic microbes from creek water used as circulation water for drilling. Thermophilic sulfate-reducer was also found in several other points inside the mine, but its population was less than 10¹ cells ml-1. Further morecular and cellular analyses are now under going for elucidating whole microbial ecosystem of this hydrothermal subsurface biosphere.

About 10⁵ cells ml-1 of microorganisms was found in hydrothermal vein in Toyoha mine (Hokkaido Pref., Japan). Predominant microbes were expected to be thermophilic and aerobic. These microbes were able to grow under aerobic condition at temperature beyond 65 C. MPN analysis implied that hydrothermal water emitted from drilled hole at Stn. C had been contaminated with many mesophilic aerobic microbes brought from creek water used as circulation water for drilling. Thermophilic sulfate-reducer was also found in several other points inside the mine, but its population was less than 10¹ cells ml-1. Further morecular and cellular analyses, such as PCR-phylogenetic analysis, fluorescent in situ hybridization and dot blot hybridization, are now under going for elucidating whole microbial ecosystem of this hydrothermal subsurface biosphere.