

## **GAMMA-RADIATION STABILITY OF MICROBIAL COMMUNITIES IN ANCIENT PERMAFROST**

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Theoretical hypotheses concerning duration of cell viability in anabiotic state have great experimental confirmations in the field of microbial ecology. Together with scientific data about strong stability of microorganisms to extreme action of different physical and chemical factors this new information gives new chances for search for extraterrestrial life.

**Ancient permafrost samples with age about 3 Myrs were irradiated in dose up to 10 Mrad to analyze gamma-radiated stability of microbial communities inhabited. Native irradiated samples were investigated by SEM (scanning electron microscopy) analysis for detection microbial cells *in situ*. Stable bacteria were isolated from irradiated samples and studied for their temperature characteristics. Essential part of research was the atomic force microscopy (AFM) and SEM investigation of isolated strains, precisely cell morphology and some physical parameters.**