

Environmental response in bacteria to an applied magnetic field

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Metabolic changes in living cells under various magnetic fields should be considered in closed-ecology on planets.

Magnetic fields may induce multiple effects in biological systems, including change in DNA replication or RNA transcription and modification of ion and protein flow across membranes. In recent years, influences of various electromagnetic fields on cell and organisms have been investigated by many researchers. However, the detailed mechanisms in the effects of magnetic field on organisms are still controversial.

In this study, we had focused on influences of the magnetic field on environmental microbes. Some bacteria susceptible to the applied magnetic field were isolated from the soil. To investigate expression changes of intracellular proteins involved in regulating cell growth by the applied magnetic field, cellular proteins in the bacteria cultured under the applied magnetic field were analyzed by SDS-polyacrylamide gel electrophoresis.

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