

The uniqueness of the dry heat tolerance of akinetes of terrestrial cyanobacterium *Nostoc* sp. HK-01

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Terrestrial cyanobacteria are useful for enabling bio-chemical circulation in closed bio-ecosystems, which is achieved through their photosynthetic ability, nitrogen fixing ability and utility as a food. Dried colonies of the terrestrial cyanobacterium *Nostoc* sp. HK-01 have a high tolerance to vacuum, UV, gamma-rays, heavy particle beams, and extreme temperatures. Tolerance to extraterrestrial environments is important for transportation in space. *Nostoc* sp. HK-01 was adopted as a biological material for space exposure experiments ("TANPOPO" mission), because of their high environmental tolerances. *Nostoc* sp. HK-01 has several different types of cells in its life cycle. We have revealed that the akinete (dormant cell) cell type of *Nostoc* sp. HK-01 shows tolerance to dry heat. In this study, we tested the dry heat tolerances of cyanobacterial akinetes of several species. We will discuss the uniqueness of the dry heat tolerance of *Nostoc* sp. HK-01.

Keywords: Akinete, Dry heat tolerance, *Nostoc* sp. HK-01, Terrestrial cyanobacteria