

Analysis of amino acid in a terrestrial cyanobacterium, *Nostoc* sp. HK-01, under the harsh environment

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Habitation in extraterrestrial environments such as on Mars is one of our challenges. We have been studying future space agriculture to provide food and oxygen for habitated areas in extraterrestrial environments. A cyanobacterium, *Nostoc* sp. HK-01, is highly tolerant to extraterrestrial environments. We have already confirmed that *Nostoc* sp. HK-01 was able to grow for long time on Martian regolith simulant in a laboratory experiment. We have already reported that *Nostoc* sp. HK-01 produces a high level of amino acids but the amount of each amino acid has not yet been analyzed under harsh environments. Here, we investigated the relationship between the amount of amino acid and the intensity of light in *Nostoc* sp. HK-01 for future extraterrestrial agricultural purposes.

Keywords: Amino acid, light environment, *Nostoc* sp. HK-01, Space Agriculture