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Serious environment tolerance in cyanobacteria, Nostoc sp. HK-01

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We have already reported the growth of terrestrial cyanobakuterium, Nostoc sp., on the Martian Regolith Simulant (MRS) and its vacuum tolerance as one of our challenges in this century to inhabit Mars. Here, we examined high-temperature tolerance, UV tolerance, gamma-ray tolerance, heavy particle beam tolerance of Nostoc sp.HK-01 to indicate it's survivability in space-environment. All the cyanobacterial cells could live under the environment, high temperature, UV, gamma-ray, heavy particle beam. After the exposed cell, they are difficult to live under the environment,high tempereture in 24h. The several severe environment tolerances in the dry material, cyanobacteria, Nostoc sp. HK-01, were investigated for future space utilization and an environment of some emergency situation.