

Using the ISS to Prepare for Exploration (01)
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BIOMEX, AN EXPERIMENT ON THE ISS: PREPARING EXPLORATION OF MARS

Abstract

The proposed space experiment BIOMEX is an interdisciplinary and international space research project selected by ESA. The experiment will take place on the space exposure facility EXPOSE-R2 on the International Space Station (ISS) and is foreseen to be launched in 2012. The prime objective of BIOMEX is to measure to what extent biomolecules like pigments and cellular components are resistant to and able to maintain their stability under space and Mars-like conditions. The results of BIOMEX will be relevant for space proven biosignature definition and for the formation of a biosignature data base (e.g. the proposed creation of an international RAMAN library). The library will be useful for future space missions like projects for life detection analysis on Mars. The secondary scientific objective is to analyze to what extent terrestrial extremophiles are able to survive in space and which interaction between biological samples and selected minerals (including terrestrial, Moon- and Mars analogue varieties) can be observed under space and Mars-like conditions.