

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Biology in Space (7)

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JAPANESE SPACE LIFE SCIENCE EXPERIMENTS ONBOARD THE KIBO IN 2008-2010, AND
BEYOND

Abstract

After the activation and initiation of the Japanese experiment module “KIBO”, many utilization activities has started in the KIBO Pressurized Module. The Japan Aerospace Exploration Agency (JAXA) has carried out several space life science experiments onboard KIBO, using newly developed experiment hardware. The following experiments were already conducted in 2008-2010.

*Rad Gene; Gene Expression of p53-regulated Genes in Mammalian Cultured Cells after Exposure to Space Environment

*LOH; Detection of Changes in LOH Profile of TK mutants of Human Cultured Cells

*Dome Gene; Control of Cell Differentiation and Morphogenesis of Amphibian Culture Cells

*Microbe-I; Microbial dynamics in International Space Station (Part 1)

*Rad Silk; Integrated Assessment of Long-term Cosmic Radiation Through Biological Responses of the Silkworm, *Bombyx mori*, in Space

*Space Seed; Life Cycles of Higher Plants under Microgravity Conditions

*CERISE; RNA Interference and Protein Phosphorylation in Space Environment using the Nematode *Caenorhabditis elegans*

Through the experiments JAXA and the science teams has overcome many difficulties such as occasional hardware anomaly and operational restrictions unique to manned space activities. Japanese astronaut stayed onboard the KIBO and worked not only for the ISS assembly but also for scientific activities. This paper will present progress and accomplishments in the Japanese space life science experiments and hardware, and also describe integration activities on the ground which play an important role for successful space experiments. This paper will also introduce the future plan of the Japanese space life sciences onboard the KIBO.