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WOSP
Short and Long-Term Effects of Microgravity on the Development of Rotifers and Nematodes

esa EADS SPACE NASA LABEN

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N-USOC: The mission of the Norwegian User Support and Operation Centre (N-USOC) is to provide qualified support to International Space Station (ISS) related life science activities in general and the EMCS in specific.

EMCS: The European Modular Cultivation System (EMCS) is an ESA gravitational biology payload to be operated on board the U.S. "Destiny" Laboratory on the ISS.

WOSP: One of the experiments selected to be conducted/ performed in the EMCS is WOSP. In this experiment, two aquatic microscopic metazoan species will be cultivated inside the EMCS on the ISS, the rotifer *Macrotrachela quadricornifera* and the nematode *Panarolaimus rigidu.* The aim of the experiment is to determine the effect of microgravity on the developmental process (both species are early determined) and on the morphology of the animals (both are eutelic). The species are launched in anhydrobiotic conditions. In space, re-hydration is started in the Hydration chamber by adding the culture medium. The number of animals and their well-being are checked by means of the camera provided by the EMCS facility (magnification 0x to 50x). From the 10th to the 15th day of culture, eggs will be removed and transferred to a new culture chamber in order to start the second generation. Animals in the original culture chamber will be transferred to a dedicated chamber equipped with a filter and dehydrated under controlled humidity conditions (three days at 98% RH and then maintained at 30-40% RH). The procedure will be repeated in order to have a multigenerational experiment. The hardware developer for WOSP is EADS Space Transportation, Friedrichshafen, Germany.

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