

65th International Astronautical Congress 2014

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

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DESMIN CONTENT AND TRANSVERSAL STIFFNESS OF THE LEFT VENTRICLE
CARDIOMYOCYTES AND SKELETAL MUSCLE FIBERS OF THE MICE AFTER 30-DAY
SPACEFLIGHT BIOSATELLITE BION-M1

Abstract

The aim of this study was to determine transversal stiffness of the cortical cytoskeleton and cytoskeletal protein desmin content of the left ventricle cardiomyocytes, soleus and tibialis anterior muscle fibers of the mice after 30-days space flight biosatellite BION-M1 (Russia, 2013). The dissection was made after 13–16.5 hours after landing. Transversal stiffness was measured in relaxed and calcium activated state by atomic force microscope. Desmin content was estimated by using western-blot, expression level of the gene, coding desmin, - by real time PCR. The results indicate that, transversal stiffness in relaxed and activated states of the left ventricle cardiomyocytes and soleus muscle fibers did not differ from the control level. Transversal stiffness of the tibialis muscle fibers in relaxed and activated state was increased in the mice group after space flight. At the same time, desmin content and expression level of its gene did not differ from the control level. The work was supported by RFBR-grant 13-04-00755a.