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Studies of the expression of subunits α2 and β1 of Na^+/K^+-ATPase, α1S (L-type) Ca^{2+}-channel, and SERCA 1/2/3 of Ca^{2+}-ATPase of phasic and postural rat muscles in a model of hypogravity using the method of fluorescent microscopy

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Abstract

© 2016, Pleiades Publishing, Ltd.Using fluorescent microscopy, we found decreased expression of the β1 subunit of Na+/K+-ATPase and subunits of Ca2+-ATPase, increased expression of the α1S subunit of the L-type Ca2+-channel, and no changes in the expression of the α2 subunit of Na+/K+-ATPase in rat postural muscle under the conditions of modeled hypogravity. In the phasic muscle, we observed decreased expression of the β1 subunit, which was similar to that found in the postural muscle, whereas the other studied parameters remained without alterations. However, a decrease in the fluorescence intensity of the β1 subunit was insignificant due to a high variability of data. Thus, hypogravity negatively influenced primarily those skeletal muscles that are responsible for static load.

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Keywords

Ca -ATPase 2+, hypogravity, L-type Ca -channel 2+, Na /K -ATPase + +, skeletal muscle