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Inhibition of Histone Deacetylases 4 and 5 Reduces Titin Proteolysis and Prevents Reduction of TTN Gene Expression in Atrophied Rat Soleus Muscle after Seven-Day Hindlimb Unloading

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Abstract

The effect of HDACs 4 and 5 on the level of atrophy, calpain-1 and titin content, and TTN gene expression in rat soleus after 7-day gravitational unloading (hindlimb suspension model) was studied. The development of atrophic changes induced by gravitational unloading in rat soleus was accompanied by an increase in the calpain-1 content, an increase in titin proteolysis, and a decrease in the mRNA content of the protein. Inhibition of HDACs 4 and 5 did not eliminate the development of unloading-induced atrophy but significantly prevented proteolysis of titin and the decrease in the TTN gene expression.

Keywords: TTN; s: gravitational unloading; skeletal muscle; titin.

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