

The effect of β -escin on skeletal muscle regeneration.

Abstract

The dissertation presents the results of investigation aimed to elucidate the effect of β -escin on skeletal muscle regeneration. The experiments carried out in vitro in cultured myoblasts and in rats have revealed the positive effect of β -escin on skeletal muscle regeneration. β -escin attenuates inflammation and post-inflammatory fibrosis in regenerating muscles and affects the pro-inflammatory and anti-inflammatory macrophage populations infiltrating the damaged muscle. β -escin inhibits TNF α -induced activation of p50 and p65 factors associated with the NF κ B pathway, reduces MMP9 synthesis, and increases ALDH activity in myoblasts. Importantly, the beneficial effect of β -escin is more prominently expressed in slowtwitch muscles with limited regenerative capacity.

Keywords: ALDH, C2C12, escin, MMP, myoblasts, NF κ B, p50, p65, skeletal muscle regeneration, TNF α