

Mechanism of satellite cell regulation by myokines

Furuichi, Yasuro, author

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Abstrak

Skeletal muscle stem cells, known as satellite cells, participate in postnatal skeletal muscle growth, regeneration, and hypertrophy. They are quiescent in the resting state, but are activated after muscle injury, and subsequently replicate and fuse into existing myofibers. The behavior of satellite cells during muscle regeneration is regulated by extrinsic factors, such as the extracellular matrix, mechanical stimuli, and soluble factors. Myokines, muscle-derived secretory factors, are important regulators of satellite cell activation, proliferation, and differentiation. It is well known that muscle injury induces the release of various growth factors from myofibers, and these growth factors affect satellite cells. It has recently been shown that myokines secreted from myofibers without cell damage also regulate satellite cell functions. Here, we summarize myokines with known roles in the regulation of satellite cells and the mechanism underlying this regulatory process.