



## Exercise Biochemistry Review

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### **Study on the Expression of Inflammatory Factor, chemotactic factor in the Repair of Skeletal Muscle Contusion in Mice**

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**Objective** *To investigate the regulation of muscle inflammatory factors and chemotactic factors during the repair of skeletal muscle contusion in mice.*

**Methods** Forty C57 male mice were needed. Eight for control group (C, n=8) and thirty-two for muscle contusion group (S, n=32). Subsequently, their gastrocnemius muscles were harvested at 0d, 1d, 3d, 7d, 14d after injury. Hematoxylin and eosin (HE) stain were used to assess the changes of muscle morphology. In addition, the gene expression of inflammatory factors and chemotactic factors was analyzed by real-time polymerase chain reaction.

**Results** 1、Morphology of skeletal muscles showed signs of regeneration at 3d post injury. The maximum amount of regeneration muscle fibers appeared during one week post contusion. Two weeks post-injury morphology of myofibers nearly recovered to normal. 2、After skeletal muscle injury, macrophage markers (CD68, CD163, CD206), a variety of inflammatory factors (IL-1, IL-6, IL-10) were up-regulated. 3、chemotactic factors (CCL2, CCL3, CCL5, CCL8, CXCL9, CXCL10, CXCL12, mRNA) were up-regulated.

**Conclusions** After skeletal muscle contusion, the expression of a variety of chemotactic factors is up-regulated, which promotes macrophage infiltration and produces a variety of inflammatory factors. They may be involved in the inflammatory response and regeneration process after skeletal muscle contusion.