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[ADVANCED](#)[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(273K\)\]](#) [\[References\]](#)**Exercise-related novel gene is involved in myoblast differentiation**Mitsuhiro TAKAHASHI¹⁾ and Shunichiro KUBOTA¹⁾

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ABSTRACT

In this study we tried to identify new genes or proteins in skeletal muscle induced by exercise. We analyzed alterations of protein expression in mouse gastrocnemius muscles induced by swimexercise using two dimensional gel electrophoresis and mass spectrometry. Nine spots were significantly altered between control and swim groups. One of the four protein spots whose expression was decreased was identified as functionally unknown "expressed sequence AI854635" gene. The AI854635 gene has C2H2 type zinc finger motif, and is considered to be a transcription factor. The mRNA of AI854635 gene was expressed in skeletal muscle, brain, kidney, and thymus. To elucidate the function of the AI854635 gene we analyzed mRNA expression levels during C2C12 myoblast differentiation. C2C12 myoblast began to form myotube around 20 h after the initiation of differentiation. The mRNA expression levels of AI854635 gene was significantly induced around 6 h and increased till 48 h, indicating a pivotal role in myoblast differentiation. Although the significance of decreased expression of AI854635 gene induced by swim-exercise is not clear, we found that this gene is involved in myoblast differentiation.

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