Special Issue

Urinary Titin: A Novel Biomarker for Muscle Atrophy and Catabolic Conditions

Message from the Guest Editor

Skeletal muscle atrophy is associated with aging, inactivity, poor nutrition, and diseases such as cancer, COPD, and diabetes.

Muscle cells contain contractile myofibrils, with sarcomeres as their basic units. Sarcomeres are composed of contractile proteins (actin and myosin) and the structural protein titin, which connects Z-lines and M-lines. Titin, a large elastic protein (3000–3700 kDa), acts as a molecular spring, resisting passive stretching. During muscle injury or atrophy, titin is degraded by proteolytic enzymes such as calpains and MMPs, releasing fragments into the bloodstream and urine. Serum titin fragments reflect myocardial injury and skeletal muscle atrophy, while elevated urinary titin levels are observed in muscular dystrophy and ICU patients with acute muscle atrophy.

The purpose of this Special Issue is to examine urinary titin as a biomarker by investigating its relationship with muscle status during muscle atrophy and recovery, as well as by elucidating the molecular mechanisms underlying titin degradation.

Guest Editor

Prof. Dr. Hiroshi Sakaue

Department of Nutrition and Metabolism, Tokushima University Graduate School of Biomedical Sciences, Tokushima 770-8503, Japan

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
ijms@mdpi.com

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The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

Editor-in-Chief

Prof. Dr. Maurizio Battino
Department of Odontostomatologic and Specialized Clinical Sciences, Sez-Biochimica, Faculty of Medicine, Università Politecnica delle Marche, Via Ranieri 65, 60100 Ancona, Italy

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