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Unlocking the Mysteries of Muscle Metabolism in the Animal Sciences

Guest Editors:

Prof. Dr. David E. Gerrard

School of Animal Sciences,
Virginia Tech, Blacksburg, VA
24061, USA

Dr. Sally E. Johnson

School of Animal Sciences,
Virginia Tech, Blacksburg, VA
24061, USA

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Message from the Guest Editors

Muscle growth or meat production is a complex biological process that results from the orchestration of a hierarchy of anabolic and catabolic events that are tightly synchronized with nutrient availability. When muscle cells ‘sense’ that energy substrates and amino acids are available, protein accretion and muscle growth proceeds. Conversely, when nutrient assets are limiting, either through gaps in management strategies, or during times of redirected nutrient partitioning as is the case with compromised health status or heat stress, muscle growth is curtailed, or even reversed if the insult is severe enough. To address these varied stimuli, muscle cells utilize highly integrated signaling cascades to sense and respond to nutritional cues in their residential niches. The existence and integration of these pathways are poorly understood but identification of novel processes will further empower animal scientists to monitor changes in metabolic status of growing tissues and inevitably foster discovery of new strategies for improving the efficiency of animal growth.



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Editor-in-Chief

Dr. Amedeo Lonardo

1. Formerly Director of the Simple Operating Unit "Metabolic Syndrome", Azienda Ospedaliero-Universitaria, 41126 Modena, Italy
2. Formerly Professor of Internal Medicine, School of Specialization of Allergology and Clinical Immunology, University of Modena and Reggio Emilia, 41121 Modena, Italy

Message from the Editor-in-Chief

The metabolome is the result of the combined effects of genetic and environmental influences on metabolic processes. Metabolomic studies can provide a global view of metabolism and thereby improve our understanding of the underlying biology. Advances in metabolomic technologies have shown utility for elucidating mechanisms which underlie fundamental biological processes including disease pathology. *Metabolites* is proud to be part of the development of metabolomics and we look forward to working with many of you to publish high quality metabolomic studies.

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Contact Us

Metabolites Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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