Special Issue

Mitochondrial Energy Metabolism in Cells and Tissues

Message from the Guest Editor

Mitochondrial energy metabolism plays a critical role in maintaining cellular and tissue homeostasis, as mitochondria are the primary source of ATP production through oxidative phosphorylation. This energy supports essential physiological functions such as muscle contraction, neuronal activity, and cellular signaling. Beyond energy production, mitochondria are involved in regulating metabolic pathways, redox balance, and apoptosis. Dysregulation of mitochondrial energy metabolism is implicated in various diseases, including neurodegenerative disorders, cardiovascular diseases. and metabolic syndromes. Adequate regulation of mitochondrial energy metabolism is crucial for cellular health, and this is maintained by sophisticated quality control mechanisms. This Special Issue will focus on the intricate processes governing mitochondrial energy metabolism in cells and tissues, exploring how dysregulation contributes to disease and how targeting mitochondrial quality control mechanisms offers therapeutic potential. We invite submissions addressing recent advances in mitochondrial dynamics, mitophagy, and biogenesis, as well as their roles in health and disease.

Guest Editor

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Message from the Editor-in-Chief

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