

Special Issue

Mitochondria in Human Health and Disease

Message from the Guest Editor

Mitochondria are the powerhouses of the cell, generating over 90% of a cell's energy requirements by way of oxidative phosphorylation in the respiratory chain. The mitochondria host several other important metabolic processes, such as Krebs cycle, α -oxidation of fatty acids, and heme biosynthesis, playing a central role in cellular events. Mitochondria are also involved in oxidative stress, redox regulation, in apoptosis, in immunomodulation, and in ageing. Mitochondria receive and integrate intracellular signals, contributing to the orchestration of cellular functions. Novel mitochondria-associated molecules have also been discovered, uncovering new roles of mitochondria in the regulation and fine-tuning control of cellular metabolism. Interestingly, mitochondrial dysfunction is associated with many pathological conditions such as cancer, myopathies, and metabolic, cardiovascular, and neurodegenerative diseases. Thus, mitochondria are considered to be important therapeutic targets for these highly prevalent diseases. We will highlighting recent novel findings on the characterization of the biochemical and molecular mechanism underlying mitochondrial functions.

Guest Editor

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