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Impaired Mitochondrial Bioenergetics under Pathological Conditions

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Message from the Guest Editors

Mitochondria are the powerhouse of cells, but mitochondrial dysfunction causes energy depletion and commits the cell to die in a variety of diseases. The altered oxidative phosphorylation and ion homeostasis are associated to ROS production resulting from the disassembly of respiratory supercomplexes and electron transfer chain disruption. In pathological condition the dysregulation of mitochondrial homeostasis promotes Ca^{2+} overload in the matrix and ROS accumulation, which induce the mitochondrial permeability transition pore formation responsible for the mitochondrial morphological changes linked to membrane dynamics and ultimately cell death. Finally, studies on the impaired mitochondrial bioenergetics in pathology could provide molecular tools to counteract diseases associated with mitochondrial dysfunctions.

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Message from the Editor-in-Chief

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