

Special Issue

Mitochondrial Plasticity in Cancer

Message from the Guest Editor

Mitochondria in cancer cells utilize a broad range of metabolic pathways to fuel the electron transport chain (etc.) for ATP production. Many studies have shown fatty acid can serve as a major energy source for different cancers. In addition, other tumors exhibit increased utilization of oxidative phosphorylation (OXPHOS) for ATP production compared to normal tissue. Moreover, glutamine oxidation, usually driven by the oncogene MYC, plays a critical role in energy production and promoting tumor growth in multiple cancer types. Mitochondrial energy reprogramming is also involved in the regulation of oncogenic pathways via mitochondria-nucleus retrograde signaling and post-translational modification of oncoproteins. In addition, neoplastic mitochondria can engage in crosstalk with the tumor microenvironment. Mitochondria can change their activity in response to external stimuli for better survival of cancer cells, leading to a very plastic phenotype. Therefore, an enhanced understanding of the importance and plasticity of mitochondria in metabolic reprogramming of cancer cells has become a novel hallmark of cancer.

Guest Editor

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