# Special Issue

## Mitochondria as a Therapeutic Target for Anti-Cancer Drugs

### Message from the Guest Editor

Recent research indicates that cancer is fundamentally a metabolic disease, driven by various degrees of mitochondrial dysfunction and metabolic alterations. In cancer cells, several metabolic alterations are evident, such as increased aerobic glycolysis (the Warburg effect), deregulated pH levels, impaired lipid metabolism, increased ROS production and compromised enzyme activities. These metabolic changes lead to an acidic extracellular environment, which promotes inflammation and creates conditions favorable for cancer progression. Furthermore, cancer cells exhibit increased glutamine-driven lipid biosynthesis, which upregulates pathways involved in the initiation of tumorigenesis and metastasis. Additionally, hyperpolarized mitochondria are associated with the malignancy and aggressiveness of cancer cells, correlating with their invasive capabilities. Investigations of the complex metabolic and cellular changes in cancer cell mitochondria could help understand the progression of carcinogenesis and reveal potential pathways for targeted therapies designed to disrupt these processes and suppress cancer growth.

### Guest Editor

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