

Special Issue on **Mitochondrial Hormesis: Preserving Mitochondrial Plasticity for Healthy Aging**

CALL FOR PAPERS

Mitochondrial dysfunction, impaired mitochondrial quality control, and associated oxidative stress are both cause and consequence of a vast array of human pathologies, including the highly prevalent disorders like type 2 diabetes, cardiovascular disease, neurodegeneration, and cancer. Initial therapeutic approaches aimed at ameliorating the contribution of mitochondrial dysfunction to disease etiopathology have largely focused on the elimination of potentially harmful oxidants. Such approaches have generally proven ineffective. Most recently, mounting evidence shows that exposure to agents that induce oxidative stress and boost antioxidant defenses enhances resistance to pathological development. This has led to the proposal that the mitochondrial hormetic response can be exploited to treat age related diseases. However, independent evidence demonstrates that disease subjects have significantly reduced mitochondrial plasticity. Thus mitochondrial plasticity and homeostasis will impact on both disease etiopathogenesis and treatment strategies.

This special issue aims to provide an update on recent advances on the impact of mitochondrial plasticity in age associated metabolic diseases, including nonalcoholic fatty liver disease (NAFLD), neurodegenerative diseases, macro- and microvascular diseases, muscle atrophy, and cancer, with a focus on novel related therapeutic and diagnostic tools.

We welcome the submission of both high-quality, original research articles and review articles.

Potential topics include but are not limited to the following:

- ▶ Mitochondrial hormesis and mitochondrial plasticity: related processes and biomarkers that may predict healthy versus nonhealthy aging
- ▶ Balancing oxidative signaling in aging processes: the good and the bad
- ▶ Role of mitochondrial stress signaling and mitochondrial quality control in disease progression and response to treatment
- ▶ Metabolic signaling in aging
- ▶ Impact of exercise based interventions on mitochondrial hormesis
- ▶ Age related changes in mitochondrial physiology: frailty and metabolic plasticity
- ▶ Novel therapeutic approaches based on the regulation of mitochondrial function
- ▶ Technologies/methods to monitor mitochondria and mitochondrial dysfunction in pathological context
- ▶ Nanotechnology as a novel tool to control metabolism
- ▶ Use of metabolic markers for design of personalized treatments

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/omcl/mihorp/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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