Special Issue

Role of Mitochondrial Metabolism in Kidney Disease

Message from the Guest Editor

Mitochondrial metabolism is increasingly recognized as a key regulator of kidney health, with growing evidence linking metabolic dysfunction to the progression of kidney disease. As the powerhouse of the cell, the mitochondria in kidney tubular cells play a pivotal role in meeting the high metabolic demands for renal function, particularly under pathological conditions. Mitochondrial metabolites, such as TCA cycle intermediates and their precursors, not only control ATP production but also act as signaling molecules that regulate oxidative stress, hypoxic responses, DNA methylation, chromatin modification, and immune modulation. These processes enable mitochondria to maintain functional harmony with the rest of the cell. The aim of this Special Issue is to showcase original research and comprehensive reviews that delve into the role of mitochondrial metabolites in kidney disease development. We hope that contributions from expert laboratories will deepen our understanding of how mitochondrial metabolism shapes kidney health and inspire further exploration in this critical field. We look forward to your contributions.

Guest Editor

Dr. Huihui Huang

Division of Nephrology, Beth Israel Deaconess Medical Center (H.H.), Harvard Medical School, Boston, MA, USA

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Cells
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
cells@mdpi.com

mdpi.com/journal/cells

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Message from the Editorial Board

Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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Dr. Alexander E. Kalyuzhny
Dental Basic Sciences, University of Minnesota, 308 Harvard St. SE, Minneapolis, MN 55455, USA

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