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Mitochondrial Dysfunction in Kidney Diseases

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Message from the Collection Editor

Mitochondria satisfy the high metabolic needs of the kidney and efficiently combat kidney injury-induced stresses. Mitochondrial structural and functional aberrations are widely reported during both acute kidney injury (AKI) and chronic kidney disease (CKD). Mitochondrial dysfunction is an early event during kidney injury and exerts a critical role in exaggerating inflammation during AKI. Defects in mitochondrial quality control and bioenergetics are also known to promote progression of CKD.

The production of new mitochondrial networks and recycling of dysfunctional mitochondria via mitophagy are crucial and help in maintaining the metabolic status and sense and respond to different triggers and oxidative stress. Balance between mitochondrial fusion and fission processes also influences mitochondrial structure and functions. Therapeutic approaches that help in regulating mitochondrial health have the potential to attenuate kidney diseases.

We invite submissions on mitochondrial-associated molecular pathways, mitochondrial dynamics (fusion/fission) and mitophagy during AKI and CKD, and mitochondria-targeted potential therapeutic strategies.



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Topical Collection



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