



Oxidative Stress in Renal Health

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Message from the Guest Editor

Oxidative stress occurs due to the increase in ROS and RNS inside the cells. Among ROS, superoxide anions are significant as they are predominantly produced by NADPH-oxidase, with NOX4 being the most common isoform in the kidney. Therefore, precise regulation of redox homeostasis is critical for normal cellular function, particularly because changes in redox homeostasis contribute to the progression of CKD. Usually, inhibition of enzymatic and non-antioxidant antioxidant mechanisms leads to excessive production of ROS and RNS, causing inflammation. During inflammatory processes, ROS are produced by activated leukocytes which further increase oxidative stress. Thus, a vicious cycle is established between inflammation and oxidative stress. High levels of angiotensin II, reduced levels of nitric oxide, and hypertension also increase ROS in CKD. Hence, the recovery of redox homeostasis is being investigated as a potential therapeutic option to delay the progression of CKD.





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Message from the Editor-in-Chief

It has been recognized in medical sciences that in order to prevent adverse effects of "oxidative stress" a balance exists between prooxidants and antioxidants in living systems. Imbalances are found in a variety of diseases and chronic health situations. Our journal *Antioxidants* serves as an authoritative source of information on current topics of research in the area of oxidative stress and antioxidant defense systems. The future is bright for antioxidant research and since 2012, *Antioxidants* has become a key forum for researchers to bring their findings to the forefront.

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