



Photorespiration and Reactive Oxygen Species (ROS)

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Message from the Guest Editors

Photorespiration, a plants-specific metabolism, is initiated by the oxygenase reaction of ribulose-1,5-bisphosphate carboxylase/oxygenase (Rubisco), which competes with the carboxylase reaction for CO₂ assimilation. However, under suppression of CO₂ assimilation by environmental stress, it functions as an alternative energy sink to avoid electron accumulation in the electron transport chain which can result in the generation of reactive oxygen species (ROS) and oxidative damages in photosynthetic machineries. In addition, photorespiration is one of the ROS-generating process in plant metabolic pathways, which suggests to be a signaling pathway for oxidative stress.

The understanding of photorespiration in plants has advanced significantly and multiple roles have been proposed. This Special Issue “Photorespiration and Reactive Oxygen Species (ROS)” aims to further update our knowledge about photorespiration, especially focusing on the relationship with oxidative stress. We welcome the latest research in physiology, biochemistry, and comprehensive omics analysis, as well as multifaceted reviews to date.





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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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