

## Special Issue

# Biological Activities of Antioxidant Selenoproteins

### Message from the Guest Editor

Selenoproteins are key determinants of redox balance and antioxidant defense across biological systems. Their activities are essential in animal physiology, where they contribute to the protection against oxidative stress, modulation of immune and inflammatory pathways, regulation of energy metabolism, and maintenance of tissue homeostasis. This Special Issue aims to highlight recent progress in understanding the antioxidant properties and biological activities of selenoproteins. We are particularly interested in contributions that expand knowledge beyond animal models, exploring the influence of selenoproteins on microbial systems, including commensal and pathogenic bacteria. Emerging evidence suggests that selenoproteins may affect bacterial growth, oxidative stress resistance, and metabolic activity, thereby shaping the composition and functionality of the microbiota. This Special Issue seeks to advance the field of redox research and to emphasize the translational potential of antioxidant selenoproteins in health and disease.

#### Keywords:

selenoproteins  
selenium metabolism  
microbial redox regulation  
bacteria–host redox interactions  
oxidative stress  
antioxidant defense

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## About the Journal

### 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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