

The complex roles of glutathione and sulfur amino acids in human health

Glutathione (γ -L-glutamyl-L-cysteinylglycine, GSH) is a major antioxidant acting as a free radical scavenger that protects the cell from reactive oxygen species (ROS). Sulfur amino acids (SAAs), such as methionine and cysteine, play a critical role in the maintenance of health. GSH depletion as well as alterations of SAA metabolism are linked to a host of disease states including liver cirrhosis, various pulmonary diseases, myocardial ischemia and reperfusion injury, aging, Parkinson's disease, Alzheimer's disease, sepsis, and others. This book provides researchers with a comprehensive review of the biochemistry, absorption, metabolism, biological activities, disease prevention, and health promotion of glutathione and sulfur amino acids.

The twenty-two chapters explore such topics as:

- Chemistry, absorption, transport, and metabolism of GSH and sulfur amino acids
- Antioxidant and detoxification properties of GSH and sulfur amino acids, highlighting the enzymatic systems involved in antioxidant defenses
- Biological activities of GSH and sulfur amino acids and their role in modulating cell processes
- Role of GSH and sulfur amino acid deficiency and alteration in the onset of diseases and in aging
- Protective effects exerted by GSH and sulfur amino acids when used as drugs, functional foods, and nutraceuticals in humans and animals

Special attention is paid to the molecular mechanisms for the modulation of transcription factors and enzyme activities, as well as the nutritional and therapeutic significance of dietary sulfur amino acids as shown in human and animal models.

With more than 2,000 scientific references, this book provides food scientists, nutritionists, biochemists, food technologists, chemists, molecular biologists, and public health professionals with a comprehensive and up-to-date examination of glutathione and sulfur amino acids in human health and disease.

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