Tentative Outline

Special Issue for Current Medicinal Chemistry

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Sulfur-containing amino acids in cardiovascular and neural physiology, pathophysiology and pharmacology: an overview and update

Aims & Scope:

The sulfur-containing amino acids present a fascinating subject to the research in many fields. Methionine and cysteine are considered to be the principal sulfur-containing amino acids among the canonical 20 amino acids which are incorporated into proteins, where methionine is the initiating amino acid in the synthesis of almost all eukaryotic proteins. However, homocysteine and taurine are also sulfur-containing amino acids playing important roles in physiology and pathophysiology. The sulfur-containing amino acids play critical roles in protein synthesis, structure, and function, and requesting certain vitamins which play important role in the metabolism of these amino acids. Additionally, a significant number of their biochemical pathways have been described as drug targets. However, despite the great advances in our knowledge of the sulfur-containing amino acids, there are important areas where further research is required. Generally, new molecular design of sulfur-containing compounds appears as promising platform for drug development. The aim of the thematic issue is to review the importance of sulfur-containing amino acids from the cardiovascular and neural aspects – physiological, pathophysiological and pharmacological.

Keywords: Sulfur-containing amino acids, cardiovascular system, neural system.

Sub topics:

- Prevention of catecholamine induced arrhythmias by sulphur-containing amino acids.
- The Effects of Hypomethionine Diet on Morphology and Function of the Liver and Brain – Pathophysiological Mechanisms.
- Metabolic imbalance of homocysteine and hydrogen sulfide in kidney disease.
- Attenuation of diabetes-induced cardiac and subcellular defects by sulphur-containing amino acids.
- Beneficial effects of N-acetylcysteine and N-mercaptopropionylglycine on ischemia reperfusion injury in the heart.
- Sulphur-containing amino acids: protective role against free radicals and heavy metals.
- Homocysteine, homocysteine-related compounds and cardiovascular system: an overview and update.
- Sulfur-containing amino acids in seizures: current state of the art.

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