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Therapeutic Significance of Heme Oxygenase Induction or Inhibition

Guest Editors:

Prof. Dr. Luca Vanella
Department of Drug and Health Sciences, Section of Biochemistry, University of Catania, Catania, Italy

Dr. Marco Raffaele
Department of Drug Sciences, University of Catania, Catania, Italy

Deadline for manuscript submissions:
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Message from the Guest Editors

Dear colleagues,

A heme oxygenase (HO) system consists of two different isoforms, HO-1, the inducible form, and HO-2, the constitutive form. Both isozymes catalyze the rate-limiting step in heme degradation, resulting in the formation of biliverdin with the concurrent release of carbon monoxide (CO) and iron. HO-1 induction by drugs, polyphenols, and a variety of stimuli, such as low-grade inflammation and oxidative stress, is mediated by the nuclear factor erythroid 2-related factor 2 (Nrf2). HO plays a key role as a cytoprotective system and as an endogenous antioxidant system by scavenging reactive oxygen species (ROS) and preventing apoptosis during stress conditions. However, recently, it has been shown that a HO system may possess important biological functions beyond its enzymatic activity. The up-regulation of HO-1 and its cellular localization could presumably reduce the efficacy of chemotherapeutic agents in the treatment of several cancers.

Prof. Luca Vanella
Dr. Marco Raffaele
Guest Editors

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Biomolecules Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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