



Therapeutic Potential of Molecular Hydrogen in Human Diseases

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Message from the Guest Editors

Molecular hydrogen (H₂) was identified as an antioxidant that directly reduces hydroxyl radicals ($\cdot\text{OH}$) and peroxynitrite. H₂ also exerts indirect antioxidant, anti-inflammatory, and antiapoptotic effects via the regulation of gene expression. Other indirect mechanisms through which H₂ exerts its effects have been reported, such as nuclear factor erythroid-related factor 2 and various signaling pathways in cells. A target molecule of H₂ was recently identified that indicates that an oxidized form of porphyrin catalyzes the reaction of H₂ with $\cdot\text{OH}$ to reduce oxidative stress; however, the details of the mechanistic actions of H₂, including its target molecules, true clinical viability, and the appropriate doses as well as dosages for individual human diseases, are still in the initial stages.

This Special Issue is seeking contributions that will further elucidate the potential therapeutic use of H₂ in human diseases. Both in vitro cellular and in vivo animal studies are of interest. Authors are invited to submit original research articles and reviews that advance our understanding of the therapeutic potential of H₂ in the treatment of various human diseases.





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