



## **Molecular Mechanism of pH Regulation: From Physiology to Pathology**

Guest Editor:

**Dr. Inyeong Choi**

Department of Cell Biology,  
Emory University School of  
Medicine, Atlanta, GA 30322, USA

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### **Message from the Guest Editor**

The pH in the extracellular fluid is normally maintained at 7.4, equivalent to one H<sup>+</sup> ion per 25 million water molecules. Despite such extremely low levels, H<sup>+</sup> has profound effects on function as it binds to proteins and alters their structure and properties. A variety of proteins including receptors, signal transduction molecules, enzymes, and structural proteins can be altered in their function by H<sup>+</sup>, thereby interfering with their cellular and systemic roles. Maintaining normal pH is frequently challenged by both physiological and pathological conditions. Numerous proteins are inhibited by high H<sup>+</sup> levels, and thus acidification inhibits cellular activity. Severe acidification is deleterious to normal cells, causing cell death. However, acidification can be adversely beneficial under some pathological conditions. The current special issue focuses on the progress towards understanding the molecular mechanism of pH regulation under physiological conditions and its involvement in pathogenesis. The topic is open to original studies, reviews, and new methodologies, ranging from molecular and cellular level to integrated organ system.





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Department of  
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delle Marche, Via Ranieri 65,  
60100 Ancona, Italy

## Message from the Editor-in-Chief

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MDPI, St. Alban-Anlage 66  
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