



## Carbonic Anhydrases: A Superfamily of Ubiquitous Enzymes

Guest Editor:

**Dr. Clemente Capasso**

Institute of Bioscience and  
Bioresources (IBBR), National  
Research Council, Via Pietro  
Castellino 111, 80131 Napoli, Italy

Deadline for manuscript  
submissions:

**closed (29 February 2020)**

### Message from the Guest Editor

The CA superfamily can bind molecules known as “activators” (CAA) through the middle-exit part of the active site. CAA are biogenic amines (histamine, serotonin, and catecholamines), amino acids, oligopeptides, or small proteins. CAAs enhance the catalytic constant ( $k_{cat}$ ) of the enzyme, with no effect on the  $K_M$ . CAAs may have pharmacologic applications in the therapy of memory-related disorders, neurodegenerative diseases (Alzheimer’s disease), and genetic CA-deficiency syndromes. Moreover, since most bacteria are incredibly abundant in environments that are hostile to all other forms of life, CAs from extremophiles are exciting candidates for industrial and medical applications, such as the post-combustion carbon-capture process and the realization of artificial lungs and biosensors.

This Special Issue is dedicated to all the important advances in the field of carbonic anhydrases, their inhibitors and activators, and their potential use in medical and biotechnological applications, since the CA superfamily represents a very promising target for the scientific community for its ubiquity and crucial role in many physiologic and pathologic processes.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Maurizio Battino

Department of  
Odontostomatologic and  
Specialized Clinical Sciences,  
Sez-Biochimica, Faculty of  
Medicine, Università Politecnica  
delle Marche, Via Ranieri 65,  
60100 Ancona, Italy

## Message from the Editor-in-Chief

The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), PubMed, PMC, MEDLINE, Embase, CAPlus / SciFinder, and other databases.

**Journal Rank:** JCR - Q1 (*Biochemistry & Molecular Biology*) / CiteScore - Q1 (*Inorganic Chemistry*)

## Contact Us

*International Journal of Molecular  
Sciences* Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/ijms  
ijms@mdpi.com  
X@IJMS\_MDPI