



## Carbonic Anhydrases as Key Biocatalysts in CO<sub>2</sub> Dynamics: From Biochemistry to Biomedical and Biotechnological Applications

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### Message from the Guest Editor

Carbon dioxide is the end product of aerobic catabolism in many organisms, from simple unicellular organisms to mammals and humans. It is also the starting point of many anabolic and biosynthetic processes in simple or complex organisms, thus occupying a central role in carbon-based life.

The CA superfamily contains at least seven classes of CAs, namely  $\alpha$ -,  $\beta$ -,  $\gamma$ -,  $\delta$ -,  $\zeta$ -,  $\eta$ -, and  $\theta$ -CAs, in a typical example of convergent evolution. One goal of this Special Issue is to highlight the newest contributions towards the elucidation of structure, catalytic properties and physiological roles played by these different CAs within their host organisms, with an emphasis on understanding their unique properties and structural similarities, but especially the differences between different members induced by adaptation to the specific environments in which they operate.

Another goal of this Special Issue is to present new studies regarding the role played by the 15  $\alpha$ -CAs in humans and their contribution to key physiological and pathological processes, as well as the impact of the inhibition and activation of these  $\alpha$ -CAs in human health.





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## Message from the Editor-in-Chief

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