

Special Issue on **Plant-Based Compounds and Their Derivatives: Antioxidants and Enzyme Inhibitors**

CALL FOR PAPERS

Plant-based chemical compounds as well as their semisynthetic derivatives may have influence on a lot of processes in human body that are catalysed by different enzymes in cells. These enzymes, such as hyaluronidases (Hyal), metalloproteinases (MMPs), acetylcholinesterase (AChE), and butyrylcholinesterase (BuChE), cause irreversible changes in organism leading to the development of several human ailments. Many current concepts of pharmacotherapy underline the importance of plant-based compounds and their semisynthetic derivatives as inhibitors of enzymes. Despite the fact that many natural compounds had been studied as the enzyme inhibitors, a majority of studies were done without an assessment of the mechanism of action and kinetic parameters (KM and Vmax). Another problem is the enzyme activity unit (U), which is different in different studies. To obtain the reliable results, the same units for one disease should be established, in in vitro conditions.

Free radicals may be created as a product of enzymatic reaction. It is important to search for compounds acting as enzyme inhibitors and antioxidants at the same time. Therefore, apart from the inhibition of enzymes, this special issue includes research on free radical scavengers. As far, we know little about interactions between antioxidants and enzyme inhibitors. Whether the same compounds may play as antioxidant and enzyme inhibitors in cells at the same time or not? Therefore, designing such trials remains very challenging for researchers.

The objective of this special issue is to highlight the discovery as well as pharmacological evaluation of plant-based antioxidants and enzymes inhibitors and search for correlation between these properties. A large number of compounds (both phenolic and nonphenolic (low-molecular and lipophilic terpenes)) remain unexplored with respect to their antienzymatic and antioxidant properties.

We invite researchers to contribute original research articles and comprehensive reviews on the identification and evaluation of new or known compounds as enzymes inhibitors and antioxidants. An evaluation of the structure-activity relationship (SAR), their potential pharmaceutical application for developing new drugs, and explaining the mechanism of action will be appreciated.

Potential topics include but are not limited to the following:

- ▶ The impact of plant-based compounds, semisynthetic derivatives, and extracts on an activity of different enzymes and their mechanism of action of compounds
- ▶ The interactions between antienzymatic and antioxidant activity of phenolics and nonphenolics
- ▶ A use of metabolomic techniques for an identification of the enzyme inhibitors and antioxidants
- ▶ In vivo and in vitro studies on antienzymatic and antioxidant activity
- ▶ The structure-activity relationship

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/omcl/pbcd/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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