

Special Issue on Molecular Mechanisms of Natural Antioxidant Compounds with Neuroprotective Effects

CALL FOR PAPERS

The search for natural compounds with potential health benefits is increasingly important, attaining special relevance when focused on diseases with alarmingly growing rates, such as neurodegenerative diseases. For example, Alzheimer's disease (AD) is expected to affect more than 100 million individuals by 2050, while neurodegenerative diseases in general are estimated to surpass cancer as the second cause of death among elderly by 2040.

Neuropathology is often related to oxidative stress, inflammatory response, and neurotoxic factors. Common synthetic drugs against neurodegenerative diseases often involve acetylcholinesterase and—to a lesser extent—butyrylcholinesterase inhibitors. However, these therapeutic agents do not alter the disease course substantially enough and either are associated with critical side effects, such as depletion of the neurotransmitter substrate and an altered response in the surviving neurons, or lose their effectiveness after extended use.

Natural compounds with pharmacological and antioxidant activities might be suitable candidates for neuroprotective purposes. In fact, natural bioactive compounds, such as sterols, phlorotannins, carotenoids, or sulphated polysaccharides, have previously been reported as having this particular type of bioactivity. However, their *in vivo* activity is often limited by their limited bioavailability and their insufficient delivery to the brain.

This special issue welcomes original research and review articles focusing on the molecular mechanism of action of natural-based antioxidant compounds and the development of effective delivery systems to improve their bioavailability.

Potential topics include but are not limited to the following:

- ▶ Natural sources of bioactive compounds with neuroprotective effect
- ▶ Antioxidant potential of plants
- ▶ Therapeutic potential of medicinal mushrooms for the management of neurodegenerative disease
- ▶ Antioxidant activities of algae
- ▶ Emerging extraction techniques of bioactive compounds for potential application in neuroprotection
- ▶ Purification and structural elucidation of targeted bioactive compounds with antioxidant, anti-inflammatory, and cytotoxic properties
- ▶ Structure-activity relationship of neuroprotective compounds
- ▶ Biosynthetic pathways
- ▶ Protected delivery mechanisms
- ▶ *In vitro*, *ex vivo*, or *in vivo* evaluation of neuroprotective effects
- ▶ Antioxidant activity
- ▶ Neuroprotective assays in cell lines
- ▶ Cognitive tests

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

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

Lead Guest Editor

João C. M. Barreira, Polytechnic Institute of Bragança, Bragança, Portugal
jbarreira@ipb.pt

Guest Editors

Isabel C. F. R. Ferreira, Polytechnic Institute of Bragança, Bragança, Portugal
iferreira@ipb.pt

Beatriz P. P. Oliveira, University of Porto, Porto, Portugal
beatoliv@ff.up.pt

Rosane M. Peralta, State University of Maringá, Maringá, Brazil
rmperalta@uem.br

Submission Deadline

Friday, 31 May 2019

Publication Date

October 2019