Oxidative Medicine and Cellular Longevity

Hindawi

Special Issue on

Natural Bioactive Products with Antioxidant Properties Useful in Neurodegenerative Diseases

CALL FOR PAPERS

Neurodegenerative diseases (NDs) constitute a large group of pathological conditions, characterized by a progressive loss of neuronal cells, which compromises motor and/or cognitive functions. The most common NDs are Alzheimer's disease (AD), amyotrophic lateral sclerosis (ALS), Parkinson's disease (PD), and Huntington's disease (HD). The causes of these pathologies are multifactorial and not fully understood, but it is well known that factors related to aging and to the overproduction of free radical and reactive oxygen species lead to oxidative stress and to cell death, which are extremely related. Whereas oxidative stress plays an unquestionable and central role in the NDs, the control of free radicals and reactive oxygen species levels represents an interesting and promising strategy to delay neurodegeneration and attenuate the associated symptoms.

In this context, several natural bioactive compounds isolated from plants, fungi, and algae, among others, and also synthetic compounds inspired by natural scaffolds, which presents antioxidant properties, including vitamins C and E, anthocyanins, and phenolic compounds (flavonoids, coumarins, and polyphenols), are extensively described as potential palliative agents of neurodegenerative symptoms. In vitro and in vivo studies performed with extracts and fractions of plants and with isolated natural bioactive compounds evidence the role of these substances in the modulation of the cellular redox balance and in the reduction of the formation of reactive oxygen species originating from oxidative stress, demonstrating thus their great value as antioxidant agents and cellular protectors.

In this special issue, we invite researchers to contribute review articles as well as original research articles concerning the use of natural bioactive compounds (extracts, fractions, or isolated compounds) and related synthetic compounds with antioxidant properties, useful in preventing the symptoms of aging and neurodegenerative disorders.

Potential topics include but are not limited to the following:

- Use of natural bioactive compounds (extracts, fractions, or isolated compounds) with antioxidant activity for the treatment of neurodegenerative pathologies
- Foods with antioxidant properties capable of ameliorating neurodegenerative symptoms
- Use of natural products as prototypes of new antioxidant drugs for the treatment of neurodegenerative diseases
- Theoretical and computational studies in natural and synthetic bioactive compounds against neurodegenerative diseases
- Studies of the cellular and molecular mechanisms associated with oxidative stress generated by natural and synthetic bioactive products in NDs
- Pharmacological and toxicological effects of natural bioactive compounds: in vitro and in vivo studies of NDs
- Clinical or preclinical studies showing bioactive compounds properties in the treatment of NDs
- Technological strategies used to enhance the effects of bioactive compounds against NDs

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

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

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