

Special Issue on
**Natural Bioactive Compounds for Enhancing Memory
 and Cognitive Functions**

CALL FOR PAPERS

Brain aging is a critical risk factor in most neurodegenerative cases characterized by memory impairment and disorientation, particularly in Alzheimer's disease, which occurs with the loss of neuronal structure and function, especially in the hippocampus and neocortex. Selective elimination of axons, dendrites, and their branches, even without the death of the parent neurons, is a common scenario in acute and chronic neurodegeneration. The loss of synaptic architecture and functional synaptic plasticity are also important triggering factors for destroying memory functions in the brain.

Endogenous neurotrophic factors are crucial not only to support neuronal development but also to restore damaged neuronal networks in the brains of individuals suffering from acute and chronic neurodegenerative disorders. However, these neurotrophic factors gradually decrease with the increase of an individual's age; as a result, neurons become vulnerable along with the age. Exogenous neurotrophic factors of plant origin have shown growing interest as potential therapeutics to restore impaired memory by stimulating axonal sprouting and dendritic remodeling associated with increased expressions of endogenous neurotrophic factors (i.e., brain-derived neurotrophic factors, nerve growth factors, and neurotrophins) and related pathways for reviving the degenerating brain.

Numerous plants and traditional herbal medicines either directly as a supplement or indirectly in the form of food improve brain functions. There are reports showing the natural bioactive compounds that are effectively suppressing the progression of neurodegenerative and psychiatric disorders as evident by *in vitro* and *in vivo* studies. The new research is heading towards the development of food or medicinal recipes with limited adverse effects during long-term exposure. More than a hundred herbal medicinal plants have been conventionally used for improving memory and learning abilities, but only a few have been tested in randomized clinical trials. There is a great need to search for the natural bioactive substances that will be effective to the brain disorders without affecting the normal cells.

This special issue encourages the scientists with cutting-edge and original research on the development of plant-derived medicinal or food recipes, which exhibit beneficial effects on the brain. Strategies for evidence-based therapeutic medicine are focusing on the development of herbal drugs. The studies dealing with the cellular and animal model as well as clinical studies are highly appreciated for submission in this special issue.

Potential topics include but are not limited to the following:

- ▶ Natural bioactive compounds to prevent and/or to treat the neurodegenerative complications, including neurite outgrowth and neuroprotective activities
- ▶ Impact of natural compounds with proposed molecular mechanism of actions
- ▶ Cellular or animal studies related to brain and increased memory functions
- ▶ *In vitro*, *in vivo*, and clinical studies related to brain and/or memory enhancement
- ▶ Natural compounds as chemotherapeutic and/or chemopreventive agents for brain disorders
- ▶ Development of functional food supplements for brain protection

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

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

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