

Special Issue on
**Glutamate Toxicity in Neurodegeneration and
Neuroprotective Strategies**

CALL FOR PAPERS

Glutamate is the major excitatory neurotransmitter in the brain. Glutamate binds and activates both ligand-gated ion channels (ionotropic glutamate receptors) and a class of G-protein coupled receptors (metabotropic glutamate receptors).

Although the intracellular glutamate concentration in the brain is in the millimolar range, the extracellular glutamate concentration is kept in the low micromolar range by the action of excitatory amino acid transporters in astrocytes and neurons.

Excess extracellular glutamate may lead to excitotoxicity in acute insults like ischemic stroke and chronic excitotoxicity is also involved in neurodegenerative diseases including amyotrophic lateral sclerosis, Alzheimer's disease, and Huntington's disease. In addition, glutamate toxicity has been hypothesized to play a role in neuropsychiatric disorders such as depression and schizophrenia.

A good deal of effort has been devoted to investigate the role of neurons and glial cells, cellular organelles, and intracellular mechanism that are thought to lead to an overactivation of the glutamatergic system and glutamate toxicity in neurodegeneration. These studies may highlight novel molecular targets to develop and test drugs that either inhibit glutamate receptors or decrease extracellular glutamate leading to neuroprotection.

We are interested in high quality original research articles as well as review articles focused on cellular and molecular mechanisms involved in glutamate toxicity as well as on the potential neuroprotective strategies that may counteract cell damage due to excitotoxicity.

Potential topics include but are not limited to the following:

- ▶ Elucidation of cellular and molecular mechanism governing glutamate toxicity in neuronal and nonneuronal cells
- ▶ Involvement of glutamate toxicity in acute and chronic neurodegeneration as well as in psychiatric disorders
- ▶ Protective merits of natural products and plant extracts against excitotoxicity
- ▶ Novel compounds against glutamate-induced excitotoxicity
- ▶ Nonpharmacological approach and neuroprotection

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/bmri/toxicology/gtns/>.

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