

Special Issue on **Molecular Neuroresilience in Stress-Induced Psychological and Cognitive Impairment**

CALL FOR PAPERS

The ability to maintain normal psychological and physical functioning and avoid serious mental illness when exposed to stress and trauma, a phenomenon known as resilience, is a topic that has been investigated over the past several years with increasing attention. Recent studies suggest that resilience in humans is not simply the absence of pathological responses that occur in more susceptible individuals but rather an active process that adapts over time to stressor conditions. Indeed, mental and physical as well as metabolic stressors are now widely accepted as conditional factors that may compromise an individual's wellbeing, with broad health implications, including deterioration of mood and cognitive health especially in the aged. Little is known about these "stressors" as risk factors as a renewed interest in the assessment of resilience has been incorporated in many studies that examine the pathways linking behavioral and social factors to long-term health profiles, including morbidity and mortality.

This understanding of these molecular mechanisms in the brain is receiving increased interest with the long-term goal of developing new preventative interventions to promote healthy brain aging. Due to the fact that new vulnerabilities as well as strengths are constantly emerging over the course of one's lifetime, in order to promote resilience, an adaptable and individualized pharmacological intervention is required. Current unsuccessful approaches of therapeutic interventions for age-related neurodegeneration have spurred new emerging studies that are challenging these currently available treatments for neuropsychiatric disorders.

We are particularly interested in articles investigating the molecular mechanisms that may influence neural plasticity in response to environmental and lifestyle factors presenting potential risks for successful brain aging. In view of the large interest in the role of polyphenols as novel natural compounds in mechanisms of cognitive neuroplasticity, some emphasis in this special issue will be on the role of these compounds in the promotion of resilience against stress-induced psychological and cognitive impairment.

Potential topics include but are not limited to the following:

- ▶ Molecular mechanisms of promotion of resilience against synaptic maladaptation in models of acute and chronic stress and the role of modifiable lifestyle risk factors in neural plasticity in promotion of brain health. Neuroplasticity indexes correlating with long-term health in experimental model of psychological and cognitive impairment are also of interest
- ▶ Role of the gut microbiome on brain plasticity and microglial responses through attenuation of immune inflammatory responses known to be associated with stressful events, for example, in response to psychological stress (e.g., social defeat models)
- ▶ Molecular investigation of stressors of neuroplasticity in response to social defeat, sleep deprivation, metabolic stress, redox stress, and strenuous physical activity as well as others
- ▶ Changes in gene expression in response to exercise, genetic, or pharmacological interventions that have been shown previously to influence brain plasticity through the modification of the lifespan and/or health span of rodent animal models of resilience
- ▶ Preventative and therapeutic implications of novel bioactive polyphenol metabolite phytodrugs in promotion of neural plasticity associated with resilience against traumatic and metabolic disorders

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

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