Limamanen Phom, J Alzheimers Dis Parkinsonism 2015, 5:2
http://dx.doi.org/10.4172/2161-0460.S1.013

OMICS International
conferenceseries.com

International Conference on
Parkinson's Disease & Movement Disorders
August 11-13, 2015 Frankfurt, Germany

Curcumin's neuroprotective efficacy in Drosophila model of idiopathic Parkinson's disease is phase specific: Implication of its therapeutic effectiveness

Limamanen Phom
Nagaland University, India

Selective degeneration of dopaminergic neurons in the substantia nigra underlies the basic motor impairments of Parkinson's Disease (PD). Curcumin has been used for centuries in traditional medicines in India. Our aim is to understand the efficacy of genotropic drug curcumin as a neuroprotective agent in PD. Analysis of different developmental stages in model organisms revealed that they are characterized by different patterns of gene expression which is similar to that of developmental stages of human. Genotropic drugs would be effective only during those life cycle stages for which their target molecules are available. Hence there exists a possibility that targets of genotropic compounds such as curcumin may not be present in all life stages. However, no reports are available in PD models illustrating the efficacy of curcumin in later phases of adult life. This is important because this is the period during which late-onset disorders such as idiopathic PD set in. To understand this paradigm, we tested the protective efficacy of curcumin in different growth stages (early, late health stage, and transition phase) in adult Drosophila flies. Results showed that it can rescue the motor defects during early stages of life but is ineffective at later phases. This observation was substantiated with the finding that curcumin treatment could replenish depleted brain dopamine levels in the PD model only during early stages of life cycle, clearly suggesting its limitation as a therapeutic agent in late-onset neurodegenerative disorders such as PD.

lim_angh@yahoo.co.in

Notes: