

## **Potentials of autophagy enhancing natural products in the treatment of Parkinson disease**

Parkinson disease (PD) is a progressive neurodegenerative movement disorder characterized by motor and non-motor symptoms due to loss of striatal dopaminergic neurons and disruption of degradation signaling leading to the formation of Lewy bodies (aggregation of  $\alpha$ -synuclein). Presently, there are no disease modifying therapy for PD despite improvement in the understanding of the disease pathogenesis. However, the drugs currently used in PD management provide symptomatic relieve for motor symptoms without significant improvement in non-motor complications, thus, a public health burden on caregivers and healthcare systems. There is therefore the need to discover disease modifying therapy with strong potential to halt the disease progression. Recent trend has shown that the dysfunction of lysosomal-autophagy pathway is highly implicated in PD pathology, hence, making autophagy a key player owing to its involvement in degradation and clearance of misfolded  $\alpha$ -synuclein (a major hallmark in PD pathology). In this review, we described the current drugs/strategy in the management of PD including targeting the autophagy pathway as a novel approach that could serve as potential intervention for PD management. The discovery of small molecules or natural products capable of enhancing autophagy mechanism could be a promising strategy for PD treatment.