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## Neuroprotective effects of isorhynchophylline in experimental Parkinson's disease models

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*Uncaria rhynchophylla* has been used traditionally to treat some central nervous system disorders including epilepsy and Alzheimer's disease, it's been reported that it might potentially provide natural treatment for Parkinson's disease (PD). Isorhynchophylline (IRN), an oxindole alkaloid, has been identified as the main active ingredient responsible for the biological activities of *Uncaria rhynchophylla*. IRN has been found to possess potent neuroprotective effect against the glutamate and cerebral ischemia-induced neuronal damage, promote the degradation of  $\alpha$ -synuclein in neuronal cells via the induction of autophagy, attenuates 1-methyl-4-phenylpyridinium ion (MPP<sup>+</sup>) induced apoptosis through endoplasmic reticulum stress and mitochondria-dependent pathways in PC12 cell, reduces the neurotoxicity induced by  $\beta$ -amyloid through suppressing cellular apoptosis and inhibiting oxidative stress and tau protein hyperphosphorylation. Studies mentioned above indicated that IRN possesses potent neuroprotective activity and might be a promising therapeutic agent for the treatment of PD. However, the effects of IRN on PD are still unclear. Neuroprotective effects of IRN were confirmed in experimental PD models induced by neurotoxins, including 6-hydroxydopamine (6-OHDA) and 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP), and studies on its action mechanisms are still on going. Our findings suggest that IRN exerting neuroprotection through regulation of  $\alpha$ -synuclein expression, autophagy, oxidation reduction system and inhibition of neuro-inflammation.

### Biography

Zhi-Zhun Mo is now pursuing his PhD degree in The Chinese University of Hong Kong. He has published 13 papers in reputed journals during his Master's and PhD degree.

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