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The *in vivo* triad behind the neuromodulatory effect of *Bauhinia variegata* L.

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LP_S is a well established model for induction of neuroinflammation and amyloidogenesis widely used to study the pathway of many neurodegenerative diseases like Alzheimer's disease. Phenolics are widely known for their different beneficial characteristics, they could be considered as promising therapeutic agents against neurodegenerative diseases.

In this study, hydroalcohol extract of leaves and stalks of *Bauhinia variegata* has been shown to ameliorate neurodegenerative diseases owing to the high phenolic content including flavonoids.

The effect of the plant was studied in a dose dependent manner in comparison to herbal (green tea) and non-herbal reference (donepezil HCl) standards and the *in vivo* study was designed in what is promised to be the *in vivo* triad. The peak of the triad was represented by improvement of cognitive performance in *in vivo* behavioural tests (Y maze and water maze). The first side of the triad base was represented by biochemical analysis done on brain homogenates by ELISA where a recognizable decrease in amyloid beta 42 was observed by 39.89%, 59.8%, 71.3% and 78.49% after administration of doses 50, 100, 200 and 400 mg/kg of the studied extract respectively in addition to an increase in SOD levels by 80%, 2.4 folds, 4.5 folds and 5.6 folds after treatment with the same doses respectively.

The second side of the triad base was represented by histopathological investigation which confirmed the previous findings.

According, *Bauhinia variegata* could be considered as a phenolic capsule that can bombard and delay progression of neurodegenerative diseases.

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