

11th International Conference on Brain Disorders and Therapeutics

May 04-05, 2022

WEBINAR

Adebimpe John Omolola, Brain Disord Ther 2022, Volume 11

Kolaviron protects rats from cognitive decline induced by lipopolysaccharide in rats

Adebimpe John Omolola

Physiology Aje Institute of Technology, Nigeria

Background: Kolaviron is a mixture of bioflavonoids of seed *Garcinia kola*, and has been previously shown to exhibit Nrf2 antioxidant-mediated inhibition of neuroinflammation in LPS-activated BV2 microglia. In this study we investigated neuroprotective effects of kolaviron in LPS-induced memory impairment in rats.

Method: Wistar rats (225–250) g was used for this study. Memory impairment was induced with the systematic administration of 250µg/mg lipopolysaccharide (LPS). The effect of kolaviron on the cognition and learning processes were assessed using the behavioral responses in the Morris water maze model. Effects of LPS injections on the physiological activities were assessed by biochemical assays before and after treatment.

Results: Peripheral administration of LPS was showed to reduce cognitive and locomotor process. It also lead to reductions in the core body temperature, superoxide dismutase (SOD), and catalase levels, with an increase in Membrane lipid-peroxidation (MDA), intracellular glutathione (GSH) and nitric oxide (NO₂). These pro-inflammatory mediators produced in response to LPS are hypothesized to affect cognition, and kolaviron was able to ameliorate the effect by significantly improving the cognitive and learning processes, revealed in the reduction of escape latency and path-length during the probe trial and increase in time spent within the quadrant during retrieval using Morris water maze. Similarly, LPS at 250µg/kg induced a hypothermic effect in the treated animals. Kolaviron significantly was able to ameliorate the level of SOD and CAT by causing a significant increase while it caused a significant reduction in the level of NO₂, GSH, and MDA.

Conclusion: Kolaviron has considerable anti-inflammatory potentials, reducing lipopolysaccharide activation of macrophages. The memory-enhancing activity of kolaviron was comparable to Sulindac sulfide (a non-steroidal anti-inflammatory drug).

Keywords: Kolaviron, Lipopolysaccharide, Alzheimer's disease, Macrophages.

Biography

Adebimpe John Omolola is currently working as a Lecture at Physiology Aje Institute of Technology, Nigeria. His research interests are Lipopolysaccharide, Neuroscience and Alzheimer's disease.

Received: April 18, 2022; **Accepted:** April 20, 2022; **Published:** May 04, 2022
