

## The Role of Okra (*Abelmoschus esculentus* Linn.) on Lipopolysaccharide-Induced Reactive Oxygen Species and Inflammatory Mediator in BV2 Microglial Cells

**Authors :** Nootchanat Mairuae, Walaiporn Tongjaroenbuangam, Chalisa Louicharoen Cheepsunthorn, Poonlarp Cheepsunthorn

**Abstract :** The aim of this study was to investigate the anti-oxidative effect, the anti-inflammatory effects, and the molecular mechanisms of okra (*Abelmoschus esculentus* Linn.) on lipopolysaccharide (LPS)-stimulated BV2 microglial cells. The BV2 cells were treated with LPS in the presence or absence of okra. Reactive oxygen species (ROS) and nitric oxide (NO) production were measured using the ROS detection reagent DCF-DA and the Griess reaction, respectively. The phosphorylation levels of nuclear factor-kappa B (NF- $\kappa$ B) p65 was detected by Western blot assay. Treatment of BV2 microglia cells with okra was found to significantly suppress the LPS-induced inflammatory mediator NO as well as ROS compared to untreated cells. The levels of LPS-induced NF- $\kappa$ B p65 phosphorylation were significantly decreased following okra treatment too. These results show that okra exerts anti-oxidative and anti-inflammatory effects in LPS-stimulated BV2 microglial cells by suppressing the NF- $\kappa$ B pathway. This suggests okra might be a valuable agent for treatment of anti-neuroinflammatory diseases mediated by microglial cells.

**Keywords :** *Abelmoschus esculentus* Linn, microglia, neuroinflammation, reactive oxygen spicity

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020