Inhibitory Effects of Alpinum Isoflavone from Erythrina Variegata L. on LPS-Induced Inflammatory Response in RAW264.7 Macrophages

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Background & Aim :

This study investigates the anti-inflammatory effects of, alpinum isoflavone (AI) isolated from the Erythrina variegata L. (Fabaceae). To confirm the anti-inflammatory effects of AI, by regulation of NF- κB signaling pathway in RAW264.7 Macrophages.

Materials & Methods :

In the present study, we explored the mechanism whereby AI exerts anti-inflammatory effects, using the model of lipopolysaccharide (LPS)-treated RAW264.7 cells. The methods were examined using ELISA assay, Western blot analysis, immunofluorescence assay, and reverse transcription PCR (RT-PCR).

Results :

Our observations indicate that AI significantly suppressed the production of nitric oxide (NO) and the pro-inflammatory cytokines, such as tumor necrosis factor- α (TNF- α). The reduction of inflammatory mediators were accompanied by decreased of nitric oxide synthase (iNOS), nuclear factor-kappB (NF- κB) protein and mRNA levels, and AI also increased I κB- α hemeoxygenase (HO-1) protein expression.

Conclusion :

This study demonstrated that AI was capable of anti-inflammatory effects in RAW264.7 Macrophages, by regulating NF- κB signal pathway.

Keywords:

anti-inflammation, NF- κB signaling pathway, TNF- α