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Anti-inflammatory activity of *Euphorbia tithymalioides* L. ethanol extract in lipopolysaccharide-stimulated RAW264.7 macrophages

Seong Gu Hwang¹, Theresia Galuh Wandita¹, Seong Hyeon Bae¹ and Joseph Dela Cruz²

¹Hankyong National University, South Korea

²University of the Philippines Los Banos, Philippines

Euphorbia tithymalioides L. is native plant growing in tropical and subtropical areas of Asian countries. It has been known as traditional medicine with a wide range of healing properties such as anti-oxidant, anti-inflammatory, anti-hemorrhage, anti-diabetic, antibiotic, and anti-tumoral. It contains some bio-active compounds such as beta-sitosterol, cycloartenone, octacosanol, oxime, etc. In earlier *in-vitro* study, octacosanol has reduced the expression of mRNA or protein of pro-inflammatory cytokines. This study is aimed to evaluate the anti-inflammatory activity of *Euphorbia tithymalioides* L. ethanol extract (ETE) in RAW264.7 macrophages. Anti-inflammatory activity was studied by treating RAW264.7 murine macrophages cells with increasing concentration of the ETE extract (50, 100, 200, and 400 µg/ml). Lipopolysaccharide (LPS) was used to activate the cells. CCK-8 assay and Griess reagent were used to examine the cell viability and Nitric Oxide (NO) production, respectively. The result shows increasing concentration by 200 µg/ml increases cell proliferation then declines. On the other hand, Nitric Oxide (NO) production decreases with the increase of concentration of the extract. Reverse Transcriptase-Polymerase Chain Reaction (RT-PCR) was used to measure the mRNA expression of pro-inflammatory cytokines. Western blotting was also done to examine the effect of ETE extract on the protein expression of RAW264.7 murine macrophages cells. It has been shown that increasing concentration decreased the mRNA expression of IL-6, iNOS, COX-2, TNF α, IFN γ and NF-kB, as well as protein expression. In conclusion, the results support the empirical use of *Euphorbia tithymalioides* L. ethanol extract as an anti-inflammatory medicine.

Biography

Seong Gu Hwang has completed his higher qualification from Hankyong National University, Korea and currently working in Department of Animal Life and Environmental Science, Hankyong National University, Korea.

sghwang@hknu.ac.kr

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