

## ABSTRACT

*Calophyllum inophyllum* Lin has been used as folk medicine for various health problems which has been demonstrated to be a potent anti-inflammatory agent, including atopic dermatitis. In this study, the anti-inflammatory activity of *C. inophyllum* seed extract was evaluated in LPS-induced HaCaT cells as an atopic dermatitis model. *C. inophyllum* seed was extracted with ethanol, followed by separation into methanol and n-hexane fraction. Then, its protective effect was evaluated in LPS-stimulated HaCaT cells, followed by quantification of IL-1 $\alpha$ , IL-1 $\beta$ , IL-6, IL-8, TNF- $\alpha$ , TSLP, and COX-2 genes to determine the extent of pro-inflammatory down-regulation. n-hexane fraction at 100  $\mu$ g/mL showed the highest protection in comparison to ethanol and methanol fraction. Further analysis also demonstrated the downregulation of all pro-inflammatory genes after co-treatment of n-hexane extract and LPS, in comparison to LPS treatment alone. Overall *C. inophyllum* n-hexane seed extract manifests as a promising anti-inflammatory agent for the treatment of AD.

Keywords: *Calophyllum inophyllum*; Anti-inflammation; Lipopolysaccharide; HaCaT; Atopic Dermatitis