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Aquilaria malaccensis leaf as an alternative source of antiinflammatory compounds (Article)

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Abstract

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Currently, the long-term consumption of aspirin and non-aspirin non-steroidal anti-inflammatory drugs (NSAIDs) as anti-inflammatory medicines and pain relievers, have been reported to cause various side effects. Thus, natural compounds of several plant species including *Aquilaria malaccensis* have been explored as an alternative therapeutic source for inflammation treatment with regard to their safety and efficacy. Despite the accelerating rate on the research of agarwood leaf, the scientific evidences to elucidate the proclaimed pharmacological activities particularly anti-inflammatory activity are still limited. Therefore, it is the interest of this study to investigate the biological activity relating to the anti-inflammatory activity of *A. malaccensis* leaf extracted using Soxhlet and Supercritical Fluid Extraction (SFE) methods. Results showed that *A. malaccensis* leaf ethanolic soxhlet extract (ALEXB) gave higher yield (mg/g) of 98.33 ± 4.11 (9.83% wt/wt) as compared to soxhlet extract using hexane (ALEXA); 24.04 ± 5.27 (2.40% wt/wt) after 6 hours of extraction. Meanwhile, the supercritical fluid extract (SFEX) gave a relatively low yield of 12.57 ± 0.61 (1.26% wt/wt). The GCMS analysis revealed that 25, 30 and 16 compounds were detected in ALEXA, ALEXB and SFEX respectively with phytol as the major compound in the soxhlet extracts and n-hexadecanoic as a major compound in SFEX. Subsequently, in-vitro study showed that the extracts demonstrated inhibition of protein (albumin) denaturation in a concentration-dependent manner throughout a concentration range of 400-16000 $\mu\text{g/ml}$ tested. Exclusively, the GCMS of leaf SFEX showed a peak of 1HCycloprop[e]azulene, decahydro-1,1,7-trimethyl-4-methylene (0.4205%), a tricyclic sesquiterpene that was testified to have potential analgesic and anti-inflammatory activity. Further research is warranted to explore the anti-inflammatory activities of *A. malaccensis* leaf extracts and their mechanism of action as an alternative halal ingredient for nutraceuticals and pharmaceuticals. © 2018, Insight Society.

SciVal Topic Prominence [ⓘ](#)

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