

**P-21****Volatile Constituents and Antiinflammatory Effect of *Alpinia Galangal* Extract**

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Fresh rhizomes of *Alpinia galangal* were collected from herbal plantation, Kuala Krau, Pahang. These plant materials were extracted by various extraction techniques which are hydrodistillation, solvent extraction, successive solvent extraction and supercritical fluid extraction system (SFE). The extracts obtained were subjected to gas chromatography (GC) and gas chromatography-mass spectrometry (GC/MS) for compound identification. The essential oil extracted by hydrodistillation was characterized by the presence of 1,8 cineole (66.3%),  $\alpha$ -pinene (7.3%) and (*E*)- $\beta$ -farnesene as the main compound. The volatile compounds in extracts obtained from solvent-successive (hexane, chloroform and methanol) extraction method were detected. All extracts showed the presence of 1'-Acetoxychavicolacetate and 1,8-cineole as their main compounds. Similar major compounds were detected in methanolic crude extract of *A. galangal*. For anti-inflammatory activity, the extracts were evaluated through hyaluronidase and xanthine oxidase inhibitory assay. The results were indicated that essential oil gave the lowest inhibitory activity on hyaluronidase assay (1.85%±0.69) and inactive for xanthine oxidase inhibition. For hyaluronidase assay, extracts from successive hexane, chloroform and methanol gave inhibition as 6.63%±0.28, 8.94%±1.47, 3.66%±0.3 respectively. While methanolic extract gave lower inhibitory activity (3.43%±0.52). CO<sub>2</sub> extracts obtained through 100bar (45°C) and 200bar (45°C) also showed lower activity, 11.44%±0.85 and 16.37%±0.62, respectively. In xanthine oxidase inhibitory assay, extracts from successive-hexane, -chloroform, -methanol, methanolic extract, CO<sub>2</sub> extract (100Bar, 45°C), and CO<sub>2</sub> extract (200Bar, 45°C) gave result as 67.34%±5.24, 29.14%±9.64, 28.65%±3.12, 70.39%±3.21, 77.48%±3.77, and 81.16%±1.67 respectively. The SFE technique is considered the best extraction method in order to get high quality and biopotential of extract especially for anti-inflammatory effect.

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