

UTILISATION OF PHYTOEXTRACTS AND ESSENTIAL OILS FROM MALAYSIAN ZINGIBERACEAE AND ANNONACEAE FOR THE DEVELOPMENT OF COSMECEUTICAL PRODUCTS

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ABSTRACT

Utilisation of natural ingredients in product formulations is a popular trend amongst the cosmetic and toiletries manufacturers. This creates high demand for novel bioactive for various purposes. As part of our bio-prospecting exercise, a total of 10 species from family Zingiberaceae (e.g. *Alpinia* spp., *Curcuma* spp., *Zingiber* spp.) and Annonaceae (*Xylopia* spp., *Polyalthia* spp., *Pseuduvaria* spp., *Cyathocalyx* spp., *Goniothalamus* spp.) were collected from various locations and were extracted for their essential oils and methanolic extracts. Some 42 essential oils and 50 methanolic extracts were obtained. Selected phytoextracts were investigated for their antimicrobial activity, inhibitory effect by hyaluronidase, lipoxygenase and xanthine oxidase inhibitory assay, *in vivo* anti-inflammatory and antioxidant effect. Amongst them, 10 essential oils and 8 methanolic extracts showed strong inflammatory activity. For antioxidant study, only methanolic extracts were tested and 7 of them gave high antioxidant effect. Results from antimicrobial evaluation showed that most of the *Zingiberaceae* methanolic extracts and *Annonaceae* essential oils gave strong antimicrobial activity against targeted microbes. Active extracts and/or essential oils were used in production of oil-in-water emulsion with antioxidant and moisturising effect. In addition, the active ingredients have potential in inhibiting or killing specific target microbes and hence are able to act as natural preservative. The formulated products were distributed to about 50 volunteers in FRIM. About 70% of the respondents were satisfied with the product appearance and texture. An invention disclosure entitled “Natural plant extracts and essential oils from *Zingiberaceae* family for anti-inflammation use (FRIM ID11/09)” was registered while another extract is currently used by Bio-Nature Formula Sdn. Bhd. for their spa product development.