

ISOLATION, PURIFICATION AND EVALUATION OF ANTICANCER PRINCIPLE FROM *ZINGIBER ZERUMBET*

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The Zingiberaceae family is found in tropical and subtropical areas, with approximately 161 species from 18 genera of this family found in Peninsular Malaysia. *Zingiber zerumbet* (L.) Smith tree belonging to this family is an edible ginger, originating in South-East Asia, and has been cultivated for thousands of years as a spice and for medical purposes. The aim of this study is to isolate the active principle from extracted essential oil of fresh *Zingiber Zerumbet* rhizomes by steam-hydrodistillation method. In addition, to determine the purity of this active compound using validated reverse phase high performance liquid chromatography (RP-HPLC). Moreover, the antiproliferative effects of this active principal on various human cancerous and noncancerous cell lines at concentrations of 1 to 100 µg/mL were quantified by MTT assay. As a result, colorless zerumbone (ZER) crystals about 1.3 g/kg as an active principal were extracted from the essential oil of fresh *Z. Zerumbet* rhizomes. The purity of ZER crystals were shown to be (99.96%). Simultaneously, ZER exhibited significant ($P < 0.05$) inhibitory effects towards various human cancerous cell lines, while not affected noncancerous cell lines. In conclusion, ZER is suggested to be further developed into a safe therapeutic compound for the treatment of various human cancers.