

CYTOTOXICITY OF ZERUMBONE AGAINST LIVER CANCER CELL LINES (HepG2) VIA APOPTOSIS ACTIVITY

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Zerumbone (ZER), a sesquiterpene phytochemical isolated from a type of edible ginger known as "Zingiber Zerumbet Smith" grown in Southeast Asia. The anticancer effects of ZER has been previously reported at our Laboratory, which used MTT assay on human cancer cells of several cell lines such as cervix (HeLa), leukemia (jurkat) and breast (MCF-7). ZER anti-cancer properties were found to be in equivalent with cisplatin, a commercial anticancer drug used preferentially in treating cervical cancer in humans. In this study, MTT assay was carried to obtain the IC₅₀ value of zerumbone towards HepG2 and normal liver, WRL-68 cell lines. The cytotoxicity analysis on HepG2 cells revealed that the IC₅₀ is 6.20µg/ml. ZER showed no apparent cytotoxicity response towards WRL-68 cell lines. Morphological analysis for apoptosis detection by using inverted microscope and SEM have produced typical apoptotic characteristic. It showed that zerumbone has antiproliferative activity towards liver cancer cell by its ability to induce apoptosis. The outcome of this study demonstrates that zerumbone has the ability to increased efficacy with limited toxicity in liver cancer treatment.