

ZERUMBONE INHIBITS PROLIFERATION AND INDUCES APOPTOSIS, CELL CYCLE ARREST IN HUMAN COLON CANCER CELL LINE, HCT15

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ABSTRACT

Zerumbone is a natural cyclic sesquiterpene derived from the rhizome of *Zingiber zerumbet* Smith. Zerumbone has shown to possess anticancer properties in various types of carcinoma cells. The present study investigates the *in vitro* effect of zerumbone on colon cancer cell line HCT15. Cisplatin, a conventional chemotherapeutic drug was taken as a positive control. The cytotoxicity of zerumbone and cisplatin were determined using MTT tetrazolium salt assay. Zerumbone and cisplatin exhibited growth inhibition of HCT15 cells in a dose (0-100 μ g/ml) and time (24h, 48h, 72h) dependent manner. Morphological analysis showed changes in the treated HCT15 cells. Fluorescent microscopic studies showed typical apoptotic features in treated cells. In addition, flow cytometry studies showed cancer cells arrest at G₂/M phase by zerumbone. Overall, these results suggest that zerumbone can be a potent chemotherapeutic compound for the treatment of colon cancer.

KEYWORDS: Proliferation, Apoptosis, Cell Cycle, Zerumbone, HCT15, MTT