

中文題目：Cuminaldehyde 對肝癌細胞細胞株 Hep 3B 作用之分子機制

英文題目：Molecular mechanisms of effects of cuminaldehyde in hepatocellular carcinoma Hep 3B cells

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Background: *Cinnamomum verum*, also called true cinnamon tree, is employed to make the seasoning cinnamon. Furthermore, the plant has been used as a traditional Chinese herbal medication. We explored the anticancer effect of cuminaldehyde (CuA), an ingredient of the cortex of the plant, and the molecular biomarkers associated with carcinogenesis in hepatocellular carcinoma Hep 3B cells.

Methods: The effects of CuA on cell growth, cytotoxicity, apoptosis, topoisomerase I and II activities in HEP 3B cells were evaluated *in vitro*.

Results: The results show that CuA suppressed growth and induced apoptosis as proved by mitochondrial membrane potential loss, activation of both caspase-3 and -9, increase in the DNA content in sub G1, as well as morphological characteristics of apoptosis. Moreover, CuA also led to lysosomal vacuolation with upregulated volume of acidic compartment, cytotoxicity, together with inhibition of activities of both topoisomerase I & II.

Conclusion: Our results suggest that the anticancer activity of CuA *in vitro* involved suppression of cell proliferative markers, activities of both topoisomerase I and II, together with increase of pro-apoptotic molecules, associated with upregulated lysosomal vacuolation. Furthermore, similar effects were observed in other tested cell lines (results not shown). In short, our data suggest that CuA could be a drug for chemopreventive and/or anticancer therapy.