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Induction of apoptosis in HL-60 cells by pungent vanilloids, [6]-gingerol and [6]-paradol

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Abstract

[6]-Gingerol, a major pungent ingredient found in the rhizome of ginger, has been reported to possess a strong anti-inflammatory activity, which is considered to be closely associated with its cancer chemopreventive potential. [6]-Paradol, another pungent phenolic substance found in ginger and other Zingiberaceae plants, also has a vanilloid structure found in other chemopreventive phytochemicals including curcumin. In the present study, [6]-gingerol and [6]-paradol were found to exert inhibitory effects on the viability and DNA synthesis of human promyelocytic leukemia (HL-60) cells. The cytotoxic and anti-proliferative effects of both compounds were associated with apoptotic cell death. The above results suggest that [6]-gingerol and [6]-paradol possess potential cytotoxic/cytostatic activities.

Keywords

[6]-Gingerol; [6]-Paradol; Apoptosis; HL-60 cells; Ginger



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