Evaluation of antiproliferative activities and action mechanisms of extracts from two species of Ganoderma on tumor cell lines.

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Source

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Abstract

The antiproliferative activities on tumoral cells, namely, human breast cancer (MCF-7 and MDA-MB-231), hepatoma (HepG2) and myeloid leukemia (HL-60), of ethanolic extracts from two species of Ganoderma, G. lucidum and G. sinense, were investigated. Though both extracts had certain antiproliferative activities, their chemical characteristics, including nucleosides, triterpenoids and sterols, were significantly different. Their effects on MDA-MB-231 cells were further studied using apoptotic detection and cell cycle analyses. As a result, both had apoptosis induction through the alternation of mitochondrial transmembrane depolarization, though no triterpenoids were detected in ethanolic extract of G. sinense. Furthermore, the two extracts from G. lucidum and G. sinense could arrest cell cycle at different phases. This study showed that ethanol extracts of both G. lucidum and G. sinense have antitumoral proliferation effect through both apoptosis pathway and cell cycle arrest effect, and some other compounds such as sterols and/or nucleosides may contribute to their activity besides triterpenoids.

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