Effects of Lippia citriodora Aqueous Extract in Caco-2 Cell Line

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ABSTRACT

Recently, researches on the induction of apoptosis in cancer cells were considered as a new method. In this study, we investigated the induction of apoptosis in colorectal cancer cell line (Caco-2) and liver cancer cell line (HepG2) of human by the aqueous extract of Lippia citriodora. First, we used XTT (sodium 3 ’ [1-(phenylaminocarbonyl)-3,4-tetrazolium]- bis(4-methoxy-6-nitro) benzene sulfonic acid hydrate) method to observe the viability of Caco-2 and HepG2 cancer cell line which treated by different concentration of Lippia citriodora (10~100 mg/mL). The result showed a range of HepG2 viability from 81.81% to 90.14%, they showed a range of 46.95% to 59.71% on Caco-2 viability. In the morphological assay, the Caco-2 cancer cells exhibited conspicuously changed as compare with HepG2 cancer cell line. In the DNA integrity assay, Caco-2 cancer cells showed extensive DNA fragmentation under treatment. Flow cytometric assay revealed that the cell cycle of Caco-2 cancer cells was arrested at sub-G1 phase and showed a peak in sub-G1 phase (55.01%). The percentage of G1, S and G2/M were decreased according to the increase of Lippia citriodora concentration. Effects of the anti-proliferation and induction of apoptosis in Caco-2 cell line with low toxicity by treatment of aqueous extract of Lippia citriodora were considered as a new strategy of cancer therapy. Lippia citriodora may be a potential drug for treatment of human cancers.

Keywords : Lippia citriodora, Apoptosis, Cell cycle, Caco-2, HepG2

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