P3 THE CYTOTOXIC EFFECT OF THE EXTRACT FROM MORINDA CITRIFOLIA FRUITS IN CELL CULTURES

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Morinda citrifolia fruits (Yao in Thai) has been used for thousands of years as a source of traditional medicine and has been recently commercially processed and internationally distributed. It has been subjected to considerable its toxic effects. OBJECTIVE: To determine cytotoxic effect of the methanolic extract from Morinda citrifolia fruits in baby hamster kidney (BHK) cell line, African green monkey kidney (Vero) cell line and Human hepatoma (Hep) cell line. METHOD: Cultured cells were exposed to various concentrations of the extracts for periods of 24 hours. Mitomycin C, a cytotoxic drug, was used as positive control. Cell viabilities were assessed by MTT [3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide] assay. This method is a simple assay to determine the viability/number of cells in culture, through the formation of a colored product (in a mitochondria-dependent reaction) to which the cell membrane is impermeable. The median lethal concentrations (LC_{50}) of cytotoxic effect was calculated by linear regression analysis. RESULTS: Cytotoxic changes exhibited after exposure to the extract were dose dependent. The extract showed cytotoxicity to tested cells only at concentrations above 100 µg/mL. LC_{50} of the extract in BHK cell, Vero cell and Hep cell were found to be 2,500, 3,000 and 5,000 µg/mL, respectively. As compared to those of mitomycin C at concentration 0.5 µg/mL showed above 77 percent of cell death. CONCLUSIONS: These results suggest that the methanolic extract of M. citrifolia fruits has a cytotoxic activity at very high concentration in these tested cell lines as compared with those of mitomycin C.