

Apoptosis Effects of Aloe-Emodin in Human Skin Cancer A431 Cells

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Aloe-emodin (AE), a natural hydroxyanthraquinone, as a new anti-tumor agent against human neuroectodermal, nasopharyngeal, liver, gastric and esophageal cancer cells, nevertheless, the molecular mechanisms of AE of anti-skin cancer A431 cells have not been explored. In this study, the cytotoxicity results show that AE expressed less cytotoxicity to human keratinocytes (HaCaT cells) than the human skin cancer cells (A431 cells) by MTS assay. Additionally, we research the regulation of AE on the proliferation, cell cycle and apoptosis of A431 cells. AE induced morphological changes of chromatin condensation, DNA fragmentation and sub-G₁ peak in a DNA histogram of A431 cells, indicating cell death by apoptosis. Release of cytochrome *c* from mitochondria, down-expression of Bcl-2, up-regulation of Bax and caspase-3 activities were observed in AE-treated A431 cells by immunofluorescence analysis. Hence, AE could modulate the expressions of mitochondrial-mediated apoptosis pathway, and might be a potential anti-cancer agent for human skin cancer cells.