

P85 EXPRESSIONS OF APOPTOSIS-RELATED PROTEINS IN COLON CANCER CELLS AFTER HYP-INDUCED PHOTOTHERAPY

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Colorctal cancer is the third most common cancer and is prominent death factor worldwide. Although the main treatment is a surgery, the alternative suggested treatment method is photodynamic therapy (PDT). Hypericin (HYP) is a well-studied photosensitizer for PDT, however mechanism of action is still unclear. The aim of the present study is to investigate the apoptotic cell mechanism in HT-29 and Caco-2 cells photoactivated with HYP.

In the present study, HT-29 (grade-I) and Caco-2 (grade-II) human colon cancer cells treated with 0.04, 0.08 or 0.15 µM HYP and irradiated with (4J/cm²) fluorescent lamps. HYP effects were evaluated for 16 and 24 h. Total protein content of cells were measured by Bradford assay. Apoptosis-related proteins including caspase-9, Bcl-2 and Bax expressions were investigated at the mRNA level by real-time PCR for both cells.

Protein concentration dramatically decreased in all groups HT-29 cells after 24 h and Caco-2 cells. However, it increased in 0.15 µM group in Caco-2 cells. Caspase-9 were upregulated for both cells in 24 h incubation. Bcl-2 expression was not observed in HT-29 cells, however Bcl-2 downregulated in Caco-2 cells. Bax expression downregulated in HT-29 cells after 24 h incubation and upregulated in Caco-2 cells after 16 h incubation.

In conclusion, Caco-2 and HT-29 colon cancer cells response distinctly to HYP-mediated PDT in terms of apoptosis-related proteins, activation of repair mechanisms and resistance development.

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