The Effect of Piperin Derivatives on MCF-7 Human Breast Cancer Cells

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Introduction: Piperin, an alkaloid found in pepper has been reported to exhibit a wide range of pharmacological properties and is believed to play a role in the cancer prevention. The cancer chemopreventive activities of piperine in different systems are based on its antioxidant activities and anti-mutagenic influences. Objective: In the present study, the aim was to investigate the antitumor effects of piperine derivatives (HE-01, HE-02 and HE-03) on MCF-7 human breast cancer cells. Material and Methods: MCF-7 cells were treated with different concentrations of piperine derivatives (0 – 10 \textmu M) during 24h after 48h of cell seeding (30.000 cells/mL). Results and Discussion: Cell viability assay with MTT, showed that cell growth was dose dependent and modified according to derivative treatment. After 24 hours, 10 \textmu M of HE-01 was able to impair 25% of cell growth, whereas at the same concentration HE-02 and HE-03 piperine exposure, it was observed inhibition 50% of cell viability. Conclusion: Our results suggest that piperine derivatives, mainly HE-02 and HE-03, might act as a chemopreventive agent in breast cancer cells.

Key words: piperin, MCF-7, cytotoxicity