IN VITRO ACUTE TOXICITY OF THIOAMIDE-DERIVATIVE TO HUMAN LIVER CARCINOMA (HEPG₂) CELLS

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Abstract: Thioamide is one of antithyroid drugs prescribed in the treatment of hyperthyroidism. Thioamide derivative is currently used for the treatment of thyroid disease, tuberculosis, and leprosy. Published studies have indicated that thioamide derivative has medicinal properties effective against many diseases other than liver cancer. Therefore, the goal of the present research was to use human liver carcinoma (HepG₂) cells as a test model to evaluate the cytotoxicity of thioamide derivative. To achieve this goal, Human liver carcinoma (HepG₂) cells were treated with different doses of thioamide derivative for 48 hours. Cell survival and death were determined by MTT and propidium assays, respectively. Results from MTT assay indicated that thioamide derivative gradually reduce the viability of HepG₂ cells in a dose-dependent manner, showing a 48h-LD₅₀ value of about 13.58μM. Data generated from the propidium iodide indicated that thioamide exposure significantly (∗p < 0.05) increases the proportion of fluorescence positive cells (necrotic death cells) as compared to the control. Taken together, our results indicate that a large proportion of HepG₂ cells exposed to thioamide were died by necrosis.

Keywords: Thioamide, HepG₂ cells; MTT assay, propidium iodide, cellometer vision

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