

INDUCTION OF CYTOTOXIC AND NECROTIC EFFECTS ON HUMAN LEUKEMIA (HL-60) CELLS BY A HEAVY METAL

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Abstract: Lead has been one of the most important heavy metals because of its common usage in various industrial products, and therefore, is considered as a serious occupational hazard throughout the world. Exposure to lead can affect numerous organ systems in the body, but specific mechanisms of damage are not always known. Therefore, the present study was designed to evaluate the *in vitro* cellular mechanisms of lead nitrate induced cytotoxic effects on human leukemia (HL-60) cells. To reach our goal, HL-60 cells were treated with different doses of Pb(NO₃)₂ for 24 h. Viable cells and necrotic cell death were determined by propidium iodide assay. The result of the propidium iodine demonstrated a significant ($p < 0.05$) increase of necrotic cell death in Pb(NO₃)₂-treated cells, indicative of membrane rupture by Pb(NO₃)₂. In summary, our findings suggest that lead exposure significantly ($P < 0.05$) reduces cellular viability of human leukemia (HL-60) cells in a dose-dependent fashion.

Keywords: Lead nitrate, HL-60 cells, propidium iodine, cellometer vision

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