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**In vitro cytotoxicity of
Chloromethyl-2-dihydroxyphosphinyl-6,7-dimethoxy-1,2,3,4-tetra
hydroisoquinoline on HL60 cells and apoptotic effect**

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The chloromethyl-2-dihydroxyphosphinyl-6,7-dimethoxy-1,2,3,4-tetrahydro isoquinoline (CDDT) is a newly synthesized agent which is derived from 1,2,3,4-Tetrahydroisoquinoline (TIQ). The TIQs include potent cytotoxic agents that display a range of antitumor activities, antimicrobial activity, and other biological properties. To investigate whether the CDDT has cytotoxic effect on HL-60 cells (human leukemia cell line), MTT assay, the change of cells morphology by DAPI stain and DNA fragmentation were performed with HL-60 cells. The drug concentration of 50 % growth inhibition (IC₅₀) of HL-60 induced by CDDT was 37 $\mu\text{g/ml}$. Through morphological analyses, it was showed that the CDDT treated HL-60 cells exhibited classical apoptotic features by a fluorescence microscopic finding. In addition, DNA fragmentation were detected by agarose gel electrophoresis after the treatment of CDDT. These results indicate that the IC₅₀ concentration of CDDT is 37 $\mu\text{g/ml}$ and a possible cellular mechanism of apoptotic effect should be further studied.

Keyword : CDDT; Cytotoxicity; Apoptosis; HL-60; DNA fragmentation.