

E116 H₂O₂ induced apoptotic cell death is partly influenced by polyamine, spermidine or putrescine, in HL-60 leukemia cells: regulation of iron-dependent lysosomal damage

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Recent studies indicate that reactive oxygen species such as H₂O₂ can be generated by anti-cancer drugs, can damage cells and then induce apoptosis. In this study, we determined whether polyamines were capable of affecting apoptosis triggered by H₂O₂ in -Difluoromethylornithine treatment (DFMO, 3 mM, 48h), which leukemia cells depleted intracellular putrescine and spermidine by inhibiting ornithine decarboxylase, suppressed H₂O₂-induced apoptosis in HL-60 leukemia cells. Apoptotic induction of putrescine and spermidine-depleted cells M H with 200 μg H₂O₂ was 50% lower than that in the control cells, as determined by flow cytometry, DNA fragmentation and diphenylamine assay. Following the exogenous addition of putrescine (1 mM) and spermidine (1 mM), apoptotic induction caused by H₂O₂ was restored to a similar level with DFMO-untreated control cells. It seems that these resulted from the intra-lysosomal iron-dependent oxidation. A decrease of lysosomal damage caused by H₂O₂ was observed in the DFMO-treated cells. Exogenous spermidine or putrescine also restored H₂O₂-induced lysosomal damage. Pre-incubation with desferrioxamine, which chelates iron and complex of which is localized in the lysosomal compartment, inhibited the H₂O₂-induced apoptosis of cells. H₂O₂-induced cell death levels were significantly restored by spermidine or putrescine (1 mM) addition 30 min before

H₂O₂ treatment. However, putrescine affected the apoptotic restoration less than spermidine did. In conclusion, it may be that spermidine or putrescine plays a critical role in signaling transducers of apoptosis triggered by H₂O₂ through the regulation of iron-dependent lysosomal instability.

E117 Effects of precocene II on hemolymph and ovary protein in the greater wax moth, *Galleria mellonella*

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Duration up to eclosion, protein concentration and electrophoretic pattern of hemolymph and ovary extracts in the wax moth, *Galleria mellonella* have been investigated by comparing the effects of topical treatment. Duration up to eclosion was short to become higher precocene? concentration, and then it induced a precocious metamorphosis. Hemolymph protein concentration of 200 μg precocene treated group was lower than those of control and another treatment group. Protein concentration was showed low level at high concentration (100, 200 μg) of precocene? and passed 18hr after treatment. And the lowest protein concentration (23.76 mg) was observed at pupa stage of 200 μg treated group. Electrophoretic protein pattern of hemolymph was appeared 16.9 ~ 277kd bands. 34.8kd band of controlled group was not appeared at other experimental group. On the other hand electrophoretic pattern of ovary protein was appeared 21.8 ~ 213kd. Protein bands of last instar larvae was showed the strongest dye, but prepupae and pupae treatment group were appeared weak bands.