Z605 Apoptosis Induced by Heat and Actinomycin D in Chinese Hamster Ovary and HeLa S_3 Cells

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The present study has performed to elucidate the apoptosis induced by heat and actinomycin D (AMD) in Chinese hamster ovary and HeLa S_3 cells. Three assays were employed in this study : gel electrophoresis of isolated DNA, quantitative assay of fragmented DNA, and western blot analysis. Alteration of DNA level on apoptosis was determined by DNA ladder pattern. DNA ladder pattern in HeLa S_3 cells treated with AMD was observed from 9 hrs to 48 hrs incubation, and then the cells treated with AMD became necrosis. Whereas in HeLa S_3 cells treated with heat and AMD, DNA ladder pattern was observed from 9 hrs to 72 hrs incubation. Expression of Heat shock protein (Hsp) 70 in HeLa S_3 cells treated with AMD was rapidly decreased after 48 hrs incubation, but it was decreased after 72 hrs incubation in HeLa S_3 cells treated with heat and AMD. Expression of Hsp 70 in CHO cells treated with AMD was observed until 36 hrs incubation, but it was observed until 48 hrs incubation in CHO cells treated with heat and AMD.

Z606 Adaptive Response Induced by Mutagens in Chinese Hamster Ovary Cells

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The present study has performed to elucidate the DNA-protein crosslink (DPC) and expression of glutathione S-transferase (GST) to ultraviolet radiation-C (UVC) and ethyl methanesulfonate (EMS) on adaptive response in Chinese hamster ovary cells. To investigate the mechanism of mutagen-induced adaptive response in the cells treated with 2,4-dinitrophenol (DNP) and cycloheximide, it was used by K^+-SDS (potassium ion-sodium dodecyl sulfate) precipitation and western blot analysis. Low dose of UVC or EMS increased the DPC in the cells induced by subsequent treatment with high dose of UVC or EMS. Treatment with DNP decreased the formation of DPC induced by pretreatment with low dose of UVC and 4 hours incubation with DNP and subsequent treatment with high dose of UVC. EMS was gradually reduced according to following incubation. GST in the cells pretreated with 1 J/m^2 UVC following incubation for 4 hours with DNP and subsequently treated with 5 J/m^2 UVC was not expressed. The expression of GST in the cells pretreated with 1 J/m^2 UVC following incubation for 4 hours with DNP and subsequently treated with 5 J/m^2 UVC following incubation for 2 hours was increased.