Z620 **Apoptosis Induced by Heat and Actinomycin D(AMD) after Serum Deprivation in HeLa $S_3$ Cells**

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The present study has performed to elucidate the apoptosis induced by heat and actinomycin D (AMD) after serum deprivation in HeLa $S_3$ cells. Three assays were employed in this study : gel electrophoresis of isolated DNA, apoptotic cell and western blot analysis. Alteration of DNA level on apoptosis was determined by DNA ladder pattern. Nuclear condensation and fragmentation, which are part of the early events of apoptosis, were evaluated by fluorescence microscopy observation of cells labeled with acridine orange/ethidium bromide. Expression of extracellular signal-regulated kinase 2 (ERK 2), heat shock protein (Hsp) 70 and poly(ADP-ribose) polymerase (PARP) were investigated by western blot analysis. The expression of ERK2 was increased by serum deprivation, wherease the level of Hsp 70 was not changed. The cleavage of PARP were not affected by serum deprivation wherease AMD induced cleavage of PARP.

Z701 **EFFECT OF BISPHENOL A ON THE SERTOLI CELLS IN PREPUBERTAL MICE**

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Xenoestrogen is a hormone that interacts with other steroids to regulate the normal development of the reproductive system and other tissues. Bisphenol A (BPA) is used as the monomer for the production of polycarbonate plastic products. The present study was performed to investigate effect of bisphenol A (BPA) on the testicular function in vivo and vitro. Four-week-old mice (ICR strain) were orally administrated with BPA at a dose of 2.4 mg/kg body weight. At 3 days after the treatment, mice were sacrificed and the weights of body, testis, and liver were weighed. Serum testosterone concentrations were decreased following BPA treatment compared with those of control. By morphometric analysis, it was shown that spermatozoa were partially disappeared and the number of multi-nucleated cells having greater than three nuclei were increased in seminiferous tubules of BPA-treated group. It was shown that Sertoli cell (TM4) were more sensitive to the exposure of BPA than Leydig cell (TM3) in vitro. Especially, up to 200 $\mu$M of BPA remarkably reduced the cell viabilities. The expression of phospholipase C (PLC) isozymes and protein kinase C (PKC) isozymes were not significant different. However, very low levels of PKC $\delta$ were expressed in BPA-treated group. The expressions of phospholipase D2 (PLD2) were not changed in TM3 cells but significantly reduced in TM4 cells by the treatment of BPA compared to the control. Taken together, these results suggest that BPA affects Sertoli cells through Ca2+-dependent, PLC-PKC $\delta$-PLD2 pathway as it acts like estrogen, and hence causes the impairment of spermatogenesis in male mouse.