F816 Effect of Heat Shock on Apoptosis in Chinese hamster ovary and HeLa S_3 Cell

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In the present study, we elucidate the effect of heat shock on apoptosis in Chinese hamster ovary (CHO) and HeLa S_3 cell. To investigate the effect of heat shock stress on apoptosis, we used DNA fragmentation assay, quantification assay, morphological assessment of apoptosis and western blot analysis. DNA fragmentation (DNA ladder) was detected for 72 hours in HeLa S_3 cells treated with heat shock (43℃), and for 24 hours in HeLa S_3 cells treated with 5-100$\mu g/m\ell$ actinomycin D. In morphorogical assessment of apoptosis, apoptotic cells were increased upto 6 hours after treatment with heat shock (43℃) in CHO and HeLa S_3 cells. Heat shock protein (HSP 70) was revealed for 48 hours by treatment with actinomycin D, and it was continuously revealed for 72 hours in HeLa S_3 cells treated with heat shock following treatment with actinomycin D.

F817 **Cloning and characterization of *cos* mutants involved in the cell cycle progression and regulation in *Saccharomyes cerevisiae***

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To understand the mechanisms which control the initiation of DNA synthesis in the cell cycle, we isolated the mutants sensitive to ciclopirox olamine (CPO) which inhibits the cell cycle progression at the G1/S phase. In a screen for CPO sensitivity, we have isolated 12 mutants and named them *cos* (*c*iclopirox *o*lamine *s*ensitive; *cos1*~*cos12*) mutants. We determined the sensitivity to hydroxyurea (HU) and methylmethane sulfonate (MMS) of these mutants and subjected them to FACScan analysis to identify their arrest points in the cell cycle. According to these phenotypes, we separated these mutants into three groups. In further analysis of the mutants, interestingly, the plasmid stability in the *cos11* mutant was decreased. This result suggests that this mutant has a defect in the initiation of DNA replication. To further understand these mutant, we have cloned the genes which complement the *cos* mutants. Then, we will report on the characterization of these mutants and cloned genes.