

D123 Linking Protein Kinase C to Cell-Cycle Control by Cytochalasin D Treatment in Cultured Chick Mesenchymal Cells.

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Previous studies have shown that in mesenchymal cell cultures, cell-cell contact can arrest the cell cycle in G1 phase and CD(2 μ M,24h) induced inhibition of cell cycle results in inhibition of chondrogenic differentiation. In the present study we found that CD also caused G2/M arrest and PKC α involved in cell cycle regulation. In control cells, sustained PKC activity is maintained by inhibiting the cell cycle at G1 phase during chondrogenesis. This cell cycle inhibition correlates with a down regulation of cdc2 activity and up regulation of PKC α , but not other isoforms of PKC. While after removal of CD, cells arrested at G2/M phase by CD proceeded cell cycle and PKC α activation was inhibited but cdc2 activity was sustained. Other proteins related to cell cycle such as p21^{WAF1}, p27^{KIP1}, p53 may not be involved. These data suggested that PKC α pathway negatively regulates the G2/M transition and cdc2 kinase may contribute to this effect on chondrogenic differentiation.

D124 Cloning of cDNA encoding of cyclin B1 as the regulatory component of maturation promoting factor in *Rana dybowskii*'s oocytes.

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It is well known that cyclin B1 is a regulatory subunit of maturation promoting factor (MPF), which controls G2/M transition of cell cycle including oocyte maturation. *Rana dybowskii* is a common wild frog in Korea and used as a model for the study of oocyte maturation in seasonal breeding animals. To reveal the molecular mechanism of oocyte maturation in *Rana dybowskii*, we have screened a full-length of cyclin B1 cDNA from the *Rana* ovary cDNA library. The cloned *Rana* cyclin B1 cDNA is about 1.5 kb, which is encoded of a complete single-open reading frame with ATG codon and polyadenylation signal. The deduced *Rana* cyclin B1 protein consists of 399 amino acids with 45 kDa of molecular weight. The comparison of amino acid sequence of cyclin B1 among species showed that *Rana* cyclin B1 is identical to 80 % with *Xenopus*, and about 60 % with human, mouse, and gold fish. Interestingly, less than 60 % of identity is observed between *R. dybowskii* and *R. japonica*. Northern blot analysis indicates that cyclin B1 is mainly expressed in ovary and testis tissues as a 1.6 kb transcript size. It is also identified that *Rana* cyclin B1 gene is located into the genomic DNA by genomic Southern analysis. Therefore, *Rana dybowskii*'s cyclin B1 cDNA has been successfully cloned and characterized. It is very useful to evaluate the process of oocyte maturation related to the reproduction cycle of wild frogs.