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

Su-Jung Park*, Jeong-Ah Yoo, Shin-Sung Kang, and Tae-Kyu Park
Department of Biology, Kyungpook National University

Previous studies have shown that in mesenchymal cell cultures, cell-cell contact can arrest the cell cycle in G1 phase and CD(2μM,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 PKCα 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 PKCα, but not other isoforms of PKC. While after removal of CD, cells arrested at G2/M phase by CD proceeded cell cycle and PKCα 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 PKCα 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.**

Abhijit Chatterjee, Heung Sik Choi, Hyuk Bang Kwon, and Hae Mook Kang[1]*
Hormone Reserch Center, Chonnam National University, and [1]Department of Genetic Engineering, Chongju University.

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 breeeding 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 libaray. 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 comparision of amino acid sequence of cyclin B1 among species showed that *Rana* cyclin B1 is identiacal 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.