

Z301 **Effects of Cytochalasin D on Cell Cycle in Cultured Chick Mesenchymal Cells**

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The cell cycle withdrawal and activation of contractile proteins in cultured mesenchymal cells treated with cytochalasin D(CD) have been investigated. Treatment of CD ($2\mu\text{M}$ for 24h) to mesenchymal cells inhibited the chondrogenesis as determined by Alcian blue staining. Cells in control cultures showed growth arrest at the G1 phase of the cell cycle but CD-treated cells were inhibited cell growth and contained more proportion of S-and G2/M phase of the cell cycle. Ultrastructurally, growth inhibited cells revealed wide intercellular gaps, whereas control cells had close cell-cell contacts. CD-treated cells induced the significant increase of contractile proteins, α -smooth muscle actin (α -SMA) and myosin light chain kinase (MLCK) on culture 1 day. An overexpression of α -SMA and MLCK in CD-treated cells may be dependent on the cell cycle, and smooth muscle cell-like change may be related to inhibition of chondrogenic differentiation.

Z302 **Expression Pattern and Function of the Novel Homeobox Gene *Xhoxc-8*, a *Xenopus* Homolog of Vertebrate *Hoxc-8* Gene**

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Hox genes are expressed both temporally and spatially during vertebrate development, and their proteins are regulatory factors in vertebrate body patterning. A *Xenopus Hoxc-8* (*Xhoxc-8*) was cloned. It consists of 2,336 nucleotides and shares 94% (223/242) amino acid sequence homology with the mouse *Hoxc-8*. *Xhoxc-8* begins to be expressed in the animal hemisphere at the late blastula. From the neurula stage and on, *Xhoxc-8* is expressed specifically in the upper part of the neural tube and in the trunk neural crest cells. Even if the normal expression of *Xhoxc-8* was perturbed, no apparent abnormality was detected until stage 35. Afterwards, however, the epidermis began to be separated from the lateral mesoderm and then malformation occurred in the abdominal region and gut. The abnormal development was supposed to be caused by the defects in the differentiation of the trunk neural crest cells expressing *Xhoxc-8*.