D115 Otic Vesicle and Eye Induction by Combination of Activin A and IGF-I in Early Developmet of *Xenopus laevis*

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The effects of combined dose of Activin A and IGF(Insulin-like Growth Factor)-I were studied for the sensory organ induction in *Xenopus* early development. Fertilized eggs were obtained by HCG injection, animal cap explants from st. 9 eggs were treated preferentially with Activin A for three days at 20°C, and normal embryos reached to st. 43. From this, dose-dependent mesoderm induction was confirmed. Additionally, otic vesicle was differentiated at a low rate of about 5%. At first, we compared the ultrastructures of *Xenopus* otic vesicles from normal embryos to induced otic vesicles. At second, we searched the optimum concentration and the developmental ratio of these two organs from factor assay with combined treatment. The combined treatment with Activin A and IGF-I was more advantageous on the differentiation of eye and otic vesicle than the single treatment of Activin A. However, inductions of two organs were obviously Activin A-dependent.

D116 IDENTIFICATION OF a NOVEL cDNA ES18 INVOLVED IN THE EARLY DEVELOPMENT AND DIFFERENTIATION

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We have investigated the molecular mechanisms involved in the commitment of multipotent stem cells to specific cell types, where a large array of cell type specific genes become expressed, whose products are required for specialized cell functions. In this communication, we report the isolation from the cDNA library of Embryonic Stem(ES) cell and characterization of a cDNA clone, designated ES18. It was selected on the basis of expression patterns in adult tissues and during *in vitro* differentiation of ES cells

The DNA binding domain of ES18 is a novel mammalian homeodomain that shows considerable sequence homology to the rat thyroid transcription factor I homeodomain(TTF-1 HD). Northern blot analysis suggested that the ES18 plays a role in T-cell development. ES18 mRNA is approximately 2.8 kb in length, with high level of expression in testis and lymphnode, moderate in thymus, spleen and brain, and low in liver and ES cells. Until day of 13 of *in vitro* differentiation, no significant level of ES18 were detectable. To test whether ES18 is functionally improtant for T-cell development, we examined the expression of ES18 in the T-cell lineage. ES18 was upregulated in T-lymphocytes in the thymus from 16 day old embryo and adult mice. These results imply that ES18 may be involved in the control of the mouse development.