transcription level was greatly increased. Also in over-expressed mutants, the transcription under its own promotor was reduced. These results suggest that *nsdD* expression is autoregulated. The *nsdD* expression was greatly reduced in D*flbA* mutant, indicating that FlbA is required for *nsdD* expression. However, GA, GB or FluG apparently did not have significant relationship with *nsdD* expression. This result suggest that FlbA is not specifically required for signalling of asexual sporulation but also required for that of sexual development, but FluG is specific to asexual signalling.

D 801

The Possible Role of Akt in the Cell Cycle Progression of G2/M Phase in PC12 Cells

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The involvement of Akt in multiple signaling pathway during cell survival and differentiation is well understood, but it is less clear how Akt interact with the cell cycle machinery to regulate cell proliferation. To investigate the role of Akt in cell growth regulation, PC12 cells ectopically expressing wild-type or dominant-inhibitory Akt were analyzed. Overexpression of wild-type Akt markedly accelerated the proliferation of PC12 cells, whereas the growth of cells expressing mutant Akt was arrested at G2/M phase of the cell cycle up to 45%. Consistent with this, the expressions of proteins and mRNA of CDC2 and cyclin B1 which regulate cell cycle transition at G2/M were up-regulated in cells overexpressing wild-type Akt compared to those of parental PC12 cells but down-regulated in cells expressing mutant Akt. Moreover, according to EMZA analysis, activity of NF-Y transcription factor, regulating the transcription level of CDC2 and cyclin B1 was also dramatically increased in cells overexpressing wild-type Akt. Taken together, our results indicate that Akt may play a role in the cell cycle progression of G2/M phase through activation of transcription of the cdc2 and cyclin B1 gene.

D 802

Molecular Cloning of a Polycomb Group Gene, Xmel18, in Xenopus Embryo

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Genes of the Polycomb and trithroax group (PcG and trxG) are part of a cellular memory system that maintains inactive and active states of homeotic gene expression. Mouse mel18 is similar to the Drosophila PcG members Posterior sex comb (Psc) and Suppressor two of zeste (Su[2]z). One of the conserved protein motifs, the Ring finger, is required for the binding of Mel18 to a GACTNGACT target site and provides us with a basic information in designing degenerate primer corresponding to the motif. Here we report the cloning of a Polycomb gene, mel18, from Xenopus embryo. Using the combination of PCR techniques with degenerate primers, 5'RACE (rapid amplification of cDNA ends) and 3'RACE, the full length cDNA of mel18 in the Xenopus embryo is successfully cloned without constructing and screening a library. Xenopus mel18 exhibits a high homology to the mouse mel18 and this newly cloned Xenopus gene is therefore designated Xmel18. The expression of Xmel18 is observed in Xenopus embryo. The presence of mRNA of these genes in the embryo

supports the idea that endogenous PcG acts at the early stages of embryogenesis in Xenopus.

D 803

Study on the Role of Yin Yang 1 (YY1), a Vertebrate Polycomb Group (PcG) Gene in Xenopus Embryogenesis

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Yin Yang 1 (YY1) is a zinc finger-containing transcription factor that can act as a transcriptional repressor, an activator, or an initiator element-binding protein. This is a homolog of the Drosophila Polycomb group (PcG) gene pleiohomeotic (pho). To investigate the role of YY1 in early development of vertebrate, we analyzed the expression pattern of this gene using whole mount in situ hybridization and performed the gain-of-function study by YY1 sense RNA microinjection. Xenopus YY1 mRNA expresses in ubiquitous fashion during embryogenesis with weak staining in CNS, tail tip and protodeum. The sense YY1 RNA-injected embryos exhibit distortion of axis and gastrulation defects, suggesting that YY1 may have a role during Xenopus embryogenesis.