which had been initiated prior to reproductive induction in Arabidopsis. In this study, we observed the inflorescence development of Arabidopsis by characterizing morphological changes at the shoot apical meristem (SAM) during the floral transition. According to our results, although the SAM in *Col* wild type showed basipetal differentiation of paraclades, acropetal differentiation was observed in *FRIGIDA* and *fsu1* (*FRIsuppressor 1*). Also, when we treated vernalization to *FRI*, the developmental pattern of the paraclade was similar to *Col*. This indicates that the basipetal development of *Col* was an artificial phenomenon by excessive floral signals in the long day condition. The nodes production rate in *Col* and *fsu1* were not different throughout the developmental process even though after floral induction the rate increased to two folds than before floral induction. The only difference between *Col* and *fsu1* was the timing of floral induction. All together, we suggest that the acropetal differentiation is a natural phenomenon and that the phase transition in Arabidopsis is not a single step change from vegetative to reproductive phase but has an inflorescence phase between the two phases.

D801 Characterization of a novel survivin-like gene expression in Xenopus laevis

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Precise control of mitosis and apoptosis is important for the proper shaping of the body plan during many developmental processes. In this control process, baculoviral inhibitor of apotosis repeat(BIR)-containing proteins have been implicated to act as regulatory factors. Recently, we have isolated a cDNA encoding a novel BIR-containing protein, *Xsurvivin*, in the *Xenopus laevis*. In this study, we have examined the expression profiles of *Xsurvivin* in the growing oocytes, embryos and adult tissues of *Xenopus laevis*. In the growing oocytes, the expression of *Xsurvivin* has been noted from stage I to stage VI oocytes with high level of expression in the early stages. In the adult tissues, *Xsurvivin* expression was noted only in the ovary indicating that *Xsurvivin* is involved in the oogenesis. In the embryos, *Xsurvivin* expression was detected in the animal hemisphere up to the gastrula stage and in the neural tube at neurula stage with somewhat high expression in the brain region. To examine the probable function of *Xsurvivin* on the early development, 100pg 1 ng antisense RNA of *Xsurvivin* was injected into embryos at stage 1, stage 2 and stage 3. As expected, RNA injection caused a variety of phenotypic changes; exogastrula, microcephalic and short-axis embryos as a dose dependent manner. Taken together, *Xsurvivin* appears to play important roles during oogenesis and early developmental processes of *Xenopus laevis* including gastrulation and neurulation.

D802 Proteomic characterization of cellular differentiation in Acanthamoeba castellanii

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Nutritive trophozoite form of *A. castellanii* underwent cellular differentiation to cyst form in non-nutrient medium. In order to understand the molecular basis of the cellular differentiation, we followed changes in protein profiles along with the cyst form by 2D-PAGE and western blotting using a specific monoclonal antibody (mAb). We subdivided cysts into 1-day cyst, 4-day cyst and 7-day cyst. The 1-day cyst began to have inner cell wall and showed different

protein profiles from trophozoite. The 4-day and 7-day cysts had outer cell wall and their protein profiles were similar except 2-3 proteins. Compared with trophozoites, 7-day cyst had 17 newly synthesized proteins and lost 44 proteins. During encystment, *A. castellanii* showed a significant change in the pattern of proteins reactive with anti-thioredoxin peroxidase (TPx) antibody. The mAb reacted with 9 proteins (100, 66.2, 64.0, 56.1, 51.8, 51.2, 48.0, 38.7, and 37.9kDa) in trophozoites. The 1-day, 4-day and 7-day cysts had 7 proteins (82.7, 66.2, 56.9, 52.4, 51.6, 46.8, 36.4, and 35kDa) in common. We identified several stage specific cyst proteins. The 1-day, 4-day and 7-day cysts had 4 (35.5, 34, 26.4, 21.2kDa), 2 (100, 52.4kDa) and 3 (100, 52.4, 48.2kDa) stage specific proteins, respectively. For the structural or functional identification of cyst stages, the mAb reactive stage specific proteins were analyzed by MALDI-TOF-MS.

D803 Role for Yin Yang 1 (YY1), a Vertebrate Polycomb Group (PcG) Gene in Xenopus Embryonic Development

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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. Here we analyzed the expression and role of YY1 during *Xenopus laevis* development. Abundant levels of YY1 mRNA and protein were detected in oocytes and in all subsequent stages of embryonic development through to swimming larval stages. YY1 protein is highly expressed in the CNS. To address the role of endogenous XYY1, XYY1 activity was antagonized by injecting antisense RNA or antisense morpholino oligonucleotides. Many of these embryos showed delayed embryonic development, growth retardation and abnormal anterior-posterior axis development, resulting in short and bent phenotype in dose dependent manner. Our data suggest that YY1 may have an important role during *Xenopus* embryogenesis.