

and is critical for activated transcription in response to diverse transcriptional activators. In order to elucidate the function of Mediator in metazoan development, we isolated mutants of a conserved Mediator subunit, *Drosophila* Med6 (dMed6). dMed6 null homozygotes failed to pupate and died in the third larval instar. Larval mitotic cells and most imaginal discs showed severe defects in proliferation, but no apparent morphological defect was observed in other larval tissues. Clonal analysis of dMed6 mutant cells revealed that dMed6 is essential for cell viability and proliferation of most adult cell types. *Drosophila* cDNA microarray, quantitative RT-PCR, and in situ expression analyses of developmentally regulated genes in dMed6 mutants showed that transcriptional activation of a subset of genes involved in neuroblast proliferation in the larval brain were most affected. Our results suggest that dMed6 is required in most cells for transcriptional regulation of a subset of genes important for cell proliferation and metabolism.

F837 The chromosomal study of native plants in Korea

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There are about 90 families and 3600 species of native plants in Korea. In this study, chromosomes of 18 families and 46 species were observed by Feulgen staining. The numbers in the family Compositae chromosome were observed diversely. The somatic chromosome number of *Carduus crispus* was $2n=16$, *Lactuca sativa* was $2n=18$, *Atractylodes japonica* and *A. ovata* were $2n=24$, *Matricaria chamomilla* was $2n=28$, *Taraxacum coreanum* was $2n=32$, *Arctium lappa* and *Achillea sibirica* were $2n=36$ and *Aster ageratoides* was $2n=72$.

The chromosome numbers of 4 species in the family Umbelliferae were $2n=22$. The other families and species also have different chromosome numbers.

F838 Construction of transgenic silkworm using P element based expression vector in *Bombyx mori*.

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Transgenesis is a powerful method of studying the role and expression mechanism of genes and organism. It is also a way to confer genetically useful characteristics to animals and plants that can be used in biotechnological applications. Introducing new genes into silkworms has proved difficult, but we have developed an efficient method of transgenesis for the silkworm *Bombyx mori*. The method makes use of the microinjection technique and P-derived vector to transfer the foreign genes into the chromosomes. We constructed the expression vector using fibroin gene promoter and P transposon vector containing luciferase as reporter genes (pFpLuc). We microinjected into eggs laid at the preblastoderm stage. 29 of 6815 microinjected eggs were survived. After PCR analysis, 3 of them were tured out transgenic silkworms. Also, F1 were assayed by PCR. We assayed F2 and F5 transgenic silkworms and got the positive PCR results and did PCR-sequencing. As for ClustalW result, PCR products had the sequence of luciferase. The studies on the gene expression using fibroin gene promoter may help to understand mechanism in fibroin genes, i.e. transcriptional regulation, or many advantages to produce useful biological materials. Transgenic silkworm technique will be very useful for basic research of silkworm and may be used for the massive production of proteins for diagnostic and therapeutic purposes.