10^{-5} M) increased GVBD (Germinal Vesicle Breakdown) and first polar body formation in mouse oocytes. Furthermore, melatonin added to the medium even in the presence of dbcAMP (0.1mM) showed rather higher percentage of the GVBD and the first polar body formation compared to the dbcAMP treatment group. However, melatonin did not show any effect in the immature mouse oocytes that was arrested by hypoxanthine (3mM). Melatonin has not showed any effect in the 2-cell embryos. The present study suggests that melatonin supports immature mouse oocytes maturation but has no effect in the mouse embryos development in vitro.

D109 Distribution of Ca2+/calmodulin-dependent protein kinase II during the mouse oocyte meiotic maturation

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During the meiosis resumption, Ca^{2+} -transient or Ca^{2+}-oscillation is taking place in the ooplasm. It has not been known that what is the initial trigger for transient Ca^{2+} increase. Recently Ca^{2+} /calmodulin dependent protein kinase II (CaM KII) was found to be a Calcium-oscillation decoder in in vitro experiment. CaM KII is a multifunctional serine/threonine kinase in various cells. Present studies were performed to investigate the distribution of CaM KII during the mouse oocytes maturation. In immunocytochemical study using monoclonal antibody of CaM KII (a-subunit), CaM KII was found to be colocalized with tubulin near the chromosome. In 6hr in vitro cultured GBVD oocyte, CaM KII was localized closer to the spindle pole than tubulin. In 3 and 4hr cultured GBVD oocytes, CaM KII was colocalized with microtubule- associated protein (MAPs). MAPs have shown to regulate the microtubule stability by binding to the mictotubule suface. In this study, a-subunit of CaM KII has shown to be expressed in brain, heart, kidney, testes and ovary. CaM KII has been expressed in the follicle, including granulose cell and oocyte. From these results, CaM KII seems to regulate the microtubule stabilization through MAPs phosphorylation in the process of oocyte maturation.

D110 Molecular cloning of Xenopus trithorax group brahma gene (XBrm)

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During embryogenesis, many different cells are generated in varieties of tissues and organs. They are required to maintain differential expression patterns of many important developmental regulatory genes. This maintenance system is known to be mediated through the trithorax gene(trxG) of transcriptional activator and the polycomb group(PcG) of transcriptional. Both group of genes are regulated the action of ATP-dependent chromatin remodeling complexes. Chromatin remodeling complexes mediate a change in chromatin structure, assisted by sequence-specific DNA binding trxG proteins such as BRM and GAGA, and perhaps by recruiting histone deacetylases to stably induce a hyperacetylated active state. We have isolated partial cDNA clone encoding putative Xenopus homologues of trxG related genes, XBrm. We examined that the patterns of expressions in Xenopus embryos, and putative Xenopus homologues of trxG related genes were detectable in tissues by in situ hybridization, We were reveled RT-PCR in Xenopus embryos of each stage and observed the phenotype in embryos by microinjection. RT-PCR exhibited XBrm in Xenopus embryos between egg and stage 40. The transcript was found to show strong maternal signals in the early stage, but became reduced after

the middle stage and expresed zygotic signals again. There were observations that provided a molecular explanation for the phenotypic and genetic relationships among trxG genes. In embryo, the presence of mRNA related their genes, which supported endogenous trxG genes, acted in the early stages of embryogenesis in Xenopus.

D111 Partial Characterization of Allatostatin cDNA in Midgut and Expression of Allatostatin Neuropeptide in Nervous System from the Silk Moth *Bombyx mori*

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The allatostatins (AST) are a family of peptides which were isolated in the process of finding substances which inhibit juvenile hormone synthesis by the corpora allata, a major endocrine organ of insects. The first AST to be identified were isolated in the cockroach Diploptera punctata Since then, AST have been isolated in a number of other insects including other cockroaches, moths, flies, crickets and locusts. In this study, we characterized allatostatin gene in midgut. and demonstrated that allatostatin producing neurons were detected brain and all ventral ganglia and endocrine cells that are allatostatin immunoreactive were found in the posterior midgut of silk moth *bombyx mori*

D112 Growth Properties in Primary Culture of the Deutocerebral Cells from the Silkworm *Bombyx mori*

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Primary culture of differenting deutocerebral neuron has been investigated in the 5-stage pupae of the silk moth Bombyx mori. This investigation present a morphometric and statistical analyses of a large population of the deutocerebral neurons grown in the primary culture. Examination method of quantitative branching was used to characterize neuronal shape, comparing the change of both total neurite length and branching number in culture with 20-hydroxyecdysone or without it. It has been also shown that attachment of neurons to the culture substraum and outgrowth of axons were affected by lamine treatment. These results indicate different requirements of neurons for simple arttachment to the substratum.

D113 Immunolocalization of Allatotropin- and Allatostatin-Producing Neuron in Central Nervous System of the Lepidoteran Moth, Agrius convolvuli

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Insect metamorphosis is controlled by precise hemolymph titers of juvenile hormone released from the corpora allata. The biosynthesis of juvenile hormone by corpora allata (CA) can be in turn regulated by either a stimulatory allatotropin (AT) or an inhibitory allatostatin (AS), which are synthesized in specifc brain cells and then transported to the CA via nerves in different insect species. In this investigation, localization of allatotropin- and allatostatin-producing neurons was demonstrated in the central nervous system of the 5th instar larvae from the lepidoteran moth, Agrius convuli. About 30 AT- and 70 AS-producing neurons were found in the brain whereas 2 to 10 AT- and about 30 AS-producing neurons were seen in the ventral nerve cord.