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One P-element Insertion in *Drosophila* Catalytic Subunit gene (*DCO*) of Cyclic AMP-dependent Protein Kinase, Showing Defect of Wing in Relation to Eclosion and Sex.

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Drosophila catalytic subunit of protein kinase A (PKA) include at least 3 types, however, it is known that *DCO* is the major PKA catalytic subunit gene. *DCO* acts in embryogenesis, wing and haltere morphogenesis, eye development, and learning and memory. Several mutant *DCO* alleles were reported, which showed various defects. Some *DCO* alleles showed duplication of wing and haltere, and the regulation of limb patterning by PKA gave an account of these defects. In the present study, we obtained one wing-defective line, *EDL61*, via an enhancer detector screen and determined this line as new *DCO* allele from chromosome *in situ* hybridization, plasmid rescue followed by genomic sequence analysis, and genetic cross with another *pka* line, *pka^{olzz}*. We, also, characterized defects of wing in relation to eclosion time and sex, and probed expression of *DCO* during developmental stages of wing with reporter gene (*lacZ*). Defects of wing in *pka^{ol}* could divided at least three types, duplication, bifurcation, and angled wing, and these defects appeared more preferentially in male and early eclosed flies than in female and late eclosed ones. Reporter gene expression was detected in tracheole of imaginal disc of third instar larva and anterior proximal part of pupal wing disc from 24 h after puparium formation. It could be presented from these results that the action of PKA during development of wing is related to eclosion and sex.

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Expression of Oscillin Gene in Preimplantation Mouse Embryos, Gonads, and Several Tissues

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Oscillin, a cytosolic sperm protein, induces a characteristic series of calcium oscillation in the fertilized eggs and a somatic cell, the hepatocyte. Here we investigated the oscillin gene expression using reverse transcription coupled to amplification of cDNAs by polymerase chain reaction(RT-PCR). A transcript(296 bp in length) for this gene appeared in grown oocytes and embryos of preimplantation stages, pre- and postnatal male gonads, and all tissues examined. Along with previous reports, these results suggest that oscillin have a widespread efficiency in triggering calcium oscillations and serve as a factor for a novel signal transduction system other than a receptor-G-protein system.