D121 Signallings of Integrin-FAK Interaction for Cell Condensation during the Chondrogenesis of Chick Wing Bud Mesenchymal Cell

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The onset of chondrogenic differentiation in the developing limb is characterized by a transient cellular condensation process. The interaction of cells with FN mediated by integrins, *i.e.* α5β1 is believed to correlate with the onset of chondrogenesis. Recently it has been reported that binding of integrins to extracellular ligands activates FAK, which then generates a tyrosine phosphorylation cascade within the cell. To elucidate a possible role of FAK- and integrin-mediated signalings during chondrogenesis, we investigated the tyrosine phosphorylation state of FAK and the association with cytoskeletal proteins in *in vitro* micromass culture of wing bud mesenchymal cells. Tyrosine phosphorylation of FAK was peaked at day 3 of the culture although the expression level of FAK was not changed during chondrogenesis. Tyrosine phosphorylated FAK was associated with cytoskeletal proteins including talin, vinculin and actin during the cellular condensation. Moreover, the stimulating factors of chondrogeneis at the early time such as insulin, TGF-β1, and vitamine E enhanced the tyrosine phosphorylation of FAK and increased the association between tyrosine phosphorylated FAK and FN. The treatment of cytochalasin D, which selectively disrupts the networks of actin filaments, after day 3 of culture significantly increased chondrogenic differentiation. Immunohistochemical studies using antibodies against FAK, actin, and integrins also showed that the integrity of the actin cytoskeleton is required for cell condensation and after then the disruption of the actin cytoskeleton ocuurs for triggering the chondrogenic differentiation. Taken together, these data suggest that the cell and FN interaction plays an important role for chondrogenesis, and their intracellular signaling occurs via FAK activation at the transition from condensation to overt chondrogenic differentiation.

D122 Comparison of Change Pattern of LK I- and LomTK I-Immunoreactive Neurons in Brain and Retrocerebral Complex from the Wax Moth *Galleria mellonella*

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Antisera to leucokinin I (Lk I) and locustatachykinin I (LomTK I) were used for immunocytochemical detection of neurons in the brain-retrocerebral complex (corpora cardiaca-corpora allata) in the last instar larva and adult of the wax moth *Galleria mellonella*. In the last instar larvae, about 46 LomTK I-immunoreactive (LomTK I-IR) cell bodies could be found in various regions of the brain including the proto-, deuto-, and tritocerebra and the optic lobe, whereas about 14 LK I-IR cell bodies were located mainly in the protocerebrum. In the adult, about 34 LomTK I-IR cell bodies could be seen in the proto-, deuto-, and tritocerebra and the optic lobe, while about 10 LK I-IR cell bodies were seen in several regions of the brain. In the last instar larvae, some of LomTK-IR neurons were innervated to both corpora cardiaca and allata. However, several LK I-IR neurons were terminated only in corpora cardiaca. Such experimental results provide good tool for studies in permitting neurosecretory product release sites.