D117 Cloning and Charaterization of *Xenopus* Receptor for the Activated Protein Kinase C.

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Protein kinase C plays important roles in the regulation of early development. Subcellular translocation of PKC and the phosphorylation of PKC substrate during neural induction suggested that PKC becomes activated during neural induction. We isolated the *Xenopus* counterpart of RACK1, a receptor for the activated protein kinase C. As previously reported, RACK1 is a homologue of the guanine nucleotide-binding protein (G protein) β subunit, and required for the translocation and subsequent function of the PKC. Binding is specific for PKC, since other kinase do not interact with RACK1. We found 1,022 base pair cDNA, which contains a single open reading frame of 951 nucleotides. The XRACK1 nucleotide sequence predicts a protein of 317 amino acids with a molecular mass of 35kDa. The amino acid sequence is 95% identical to human RACK1 and 94% identical to mouse RACK1. Northern blot analysis indicated that XRACK1 mRNA transcription increases as gastrulation starts. In situ hybridization study using antisense RNA of XRACK1 showed that XRACK1 is expressed in neural tissue. These data suggest that XRACK1 mediates neurulation. Therefore, investigation of the roles of XRACK1 in early development may establish the neural signaling pathway.

D118 Developmental Induction of Proteinase Activities during Earthworm Regeneration

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In order to understand the developmental significance of proteinase activity in earlystage of regenerating earthworm, the characteristics of proteinases induced during regeneration was investigated with their inhibitor sensitivities and molecular weights determined by substrate gel electrophoresis. Within 24 hrs after amputation, at least two types of proteinase appeared to be induced which had molecular weight of 25 and 34 kDa, respectively. Third type of proteinase of 44kDa was induced within 3 days after amputation and additional two types of proteinase newly appeared in 7 days after amputation, which showed molecular weight of 16 and 51 kDa. Except proteinase of 34kDa, all types of induced proteinases were strongly inhibited by PMSF but not by pepstatin, E-64, EDTA and EGTA, indicating that they are serine-proteinase. Other characteristics including specificities for extracellular matrix proteins are under investigation. Based on these results, we are trying to find out the relationship among induction of proteinases, extracellular matrix remodeling, and dedifferetiation, which are believed to be essential processes during regeneration.