

**Hox genes from the earthworm *Perionyx excavatus* (Annelida, Oligochaeta) : New sequence information and phylogenetic analysis**

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We classified the Hox genes of the oligochaeta, *Perionyx excavatus* using a PCR survey and phylogenetic analysis was performed. We were able to identify 10 different Hox-type homeobox type fragments and 2 Non-homeobox fragments, which was classified into *Xlox* and *Phr* class. Phylogenetic analysis revealed that the oligochaeta, *Perionyx excavatus* has at least three anterior (PG1-3), six medial (PG4-8), and one posterior (PG9-10) group genes. Especially, *Pehox06* was thought to be a type of paralogous groups 2 gene. It is considered that this result provides the first evidence for the presence of *proboscipedia* (*pb*) class gene in the oligochaeta. Also, RT-PCR and southern blot analysis revealed that *labial-like* gene (*Pehox 09*, *Perionyx excavatus* HOM/HOX homeobox genes) were increasingly expressed along a spatial gradient in the anterior region of intact worms. During head and tail regeneration, *labial-like* gene was expressed only in the head region of regenerating body pieces, suggesting that the gene is involved in the anteroposterior patterning in earthworms. This result could give us information on the significance of Hox genes and the relationship between Hox genes during regeneration.