

### Z603 The Cloning and Expression of the Rat *Psx* Gene

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We have cloned the rat placenta-specific homeobox (*rPsx*) genes related to the paired-like class. *rPsx* encodes a protein of 130 amino acid, whereas *mPsx* was 227 amino acids. The sequence analysis revealed that *rPsx* gene shares about 80% identity to *mPsx* genes in homeodomain. The size of *rPsx* mRNAs is about 250bp shorter than that of *mPsx*s. These results suggest that *Psx* genes have undergone a surprisingly high rate of evolutionary change. This is unusual among all the known orthologous genes from closely related species. Northern blotting and *in situ* hybridization were employed to examine *rPsx* gene expression during rat development. *rPsx* mRNA appeared at embryonic day 13.5, but was gradually decreased during placenta development (E16.5 - 18.5). Its expression was detected in placenta but not in other tissues, including embryo and adult tissues, and specifically restricted to specific subsets of trophoblast cell lineages.

### Z604 A New Member of the Mouse Placental Prolactin (PRL)-Like Protein Subfamily, PRL-Like Protein I

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A new molecule, designated PLP-I, that is highly homologous to PRL-like protein family was isolated from mouse conceptus cDNA library. The full-length cDNA encodes a protein of 238 amino acids. Sequence analysis revealed that PLP-I has a best homology to mouse PLP-C $\alpha$  and rat PLP-H (over 61% identity at the amino acid level). The expression pattern of PLP-I mRNA is distinct to those of the PLP-C $\alpha$  and PLP-H and the other PRL-like family gene. PLP-I mRNA was first detected at embryonic day 10.5 (E10.5) of conceptus. At E11.5, the expression level was dramatically increased and persisted until birth. *In situ* hybridization analysis indicated that PLP-I transcripts are specifically expressed in trophoblast giant cells and in spongiotrophoblast layer. In addition, differentiated Rcho-1 cells also expressed PLP-I mRNA, whereas proliferating stem Rcho-1 cells did not.