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Identification of a Novel MOPT Gene in Human and Mouse Adult Testis

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To discover germ cell-specific transcripts, we prepared a cDNA library from adult testes of 35-day old mice and subtracted it with mRNA from the testes of juvenile mice. Real-time RT-PCR analysis indicated that 42 cDNA clones in the subtracted library were expressed more intensely in the adult testes than in the juvenile testes. One clone identified by subtraction is expressed preferentially in the late spermatid and is located on chromosome 17E3 in mouse and 2p22 in human. The full nucleotide and amino acid sequences of mouse and human MOPT gene are deposited in Genbank (AY367765 And AY367766). Human MOPT is spliced by 5 exons and 4 introns and encompasses 7,000 bp of genomic DNA of NT-022184.13, whereas mouse Mopt is spliced by 5 exons and 4 introns and encompasses 7,382 bp of genomic DNA of NT-039658.2. The ORF encodes a 79 amino acid. A MORN motif, EGQFKDNMFHGLGTYTFPNG, was identified in the predicted protein sequence of Mopt, but the function of this motif is unknown. Because of the limited availability of human testis samples, development-dependent expression of Mopt mRNA was conducted using its mouse homologue and semiquantitative PCR. The number of cycles completed before entering the exponential growth, recorded by amplifier PE5700 for mouse Mopt, were 1.11 ± 0.23 , 1.05 ± 0.04 , 1.5 ± 0.2 , 5.55 ± 0.65 , 19.35 ± 0.65 , 68.65 ± 2.15 , and 185.15 ± 6.15 in W/W, postnatal day 5, 8, 12, 15, 18, 22, and 28 days mouse tissue samples, respectively. The cycles completed for GAPDH (control) for the three times were 18.62 ± 0.3568 , 18.30 ± 0.2865 , and 18.28 ± 0.3270 , respectively. The difference among the three times was significant ($P < 0.01$, ANOVA). Our data indicate that MOPT gene may have a possible roles for spermiogenesis.

Key words : *MOPT*, *Morn motif*, *Spermiogenesis*