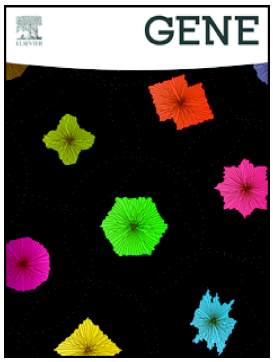

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PII: S0378-1119(18)30699-1
DOI: doi:10.1016/j.gene.2018.06.043
Reference: GENE 42976

To appear in: *Gene*

Received date: 21 March 2018
Revised date: 29 May 2018
Accepted date: 14 June 2018

Please cite this article as: Jun Zhao, Bo Wang, Haiyang Yu, Yujue Wang, Xiaobing Liu, Quanqi Zhang , tdrd1 is a germline-specific and sexually dimorphically expressed gene in Paralichthys olivaceus. Gene (2018), doi:10.1016/j.gene.2018.06.043

tdrd1 is a germline-specific and sexually dimorphically expressed gene in *Paralichthys olivaceus*

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Abstract

Tudor domain containing protein 1 (*tdrd1*) is a member of the Tudor family and has shown essential functions during embryogenesis and gametogenesis. In this study, we cloned the full length cDNA of *Paralichthys olivaceus tdrd1* (*Potdrd1*). PoTDRD1 is a multidomain protein with an N-terminal MYND zinc finger domain, followed by four tandem extended Tudor domains. Sequence comparison, genomic structure, phylogenetic analyses and synteny analyses showed that *Potdrd1* was homologous to those of other teleosts. In adult individuals, the expression of *Potdrd1* was higher in testis than in ovary, demonstrating a sexually dimorphic gene expression pattern. *In situ* hybridization (ISH) showed that *Potdrd1* mRNA was detected in oogonia and oocytes of ovary as well as in spermatogonia and spermatocytes of testis. In juveniles during gonad differentiation its expression level increased rapidly from 30 dph to 100 dph and showed obvious sexual dimorphism that was in accordance with the expression of anti-Mullerian hormone (*amh*). *Potdrd1* mRNA was consistently