

Molecular Cloning and Expression of *DMRT* Gene in Protogynous Wrasse, *Halichoeres tenuispinis*

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The sex differentiation of fishes occurs under the control of genetic and various environmental factors. DM-domain containing genes are novel zinc finger transcription factors and play key roles in sex determination. In order to isolate the wrasse *DMRT* (*wDMRT*) cDNA from the protogynous wrasse (*Halichoeres tenuispinnis*), the wrasse testis cDNA library was screened using the ³²P-labeled PCR products, which were amplified with the degenerate primers from conserved DM-domain regions of several *DMRT* genes. Among a few positives obtained through screening, the full length *wDMRT* cDNA of 2.9kb size encoding a predicted 300 amino acid residues was isolated. The sequence analysis exhibited 60%, 43% sequence identity with rainbow trout and tilapia *DMRT1*, respectively. RT-PCR assay showed that *wDMRT* was expressed specifically in male testis. Also, *wDMRT* gene was strongly expressed in May during reproductive season, when the reproductivity of wrasse is most active. This results suggested that *wDMRT* gene function in testis differentiation. The conserved DM-domain regions were amplified using PCR from *DMRT* genes of several species among Labridae, and their sequences were determined. The sequence of DM-domain region of *Halichoeres tenuispinis* was identical to those of *Pseudolabrus japonicus*, *Pteragogus flagellifera*, and showed 94% identity with that of *Halichoeres poeciopterus*.

Key words) *wrasse, sex differentiation, DMRT (Doublesex/Mab-3 Related Transcription factor), DM-domain*