吳郭魚第四型肝細胞核因子a型之選殖與分析

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ABSTRACT

Hepatocyte nuclear factor (HNF)-4? is a liver-enriched transcription factor and belongs to the highly conserved member of the nuclear receptor superfamily. HNF-4? together with other factors play a key role in the tissue specific expression of a large number of genes involved in lipid and glucose metabolism. However, its function in fish is still poorly understood. In our previous study, RNAs and proteins of HNF-1?? HNF-1?? and HNF-3??nare detected in the liver, ovary, and testis of tilapia (Oreochromis mossambicus). And the expression of HNF-3? in the gonads could be induced by 17??estradiol and hydrocortisone in vitro. Besides, HNF-4 binding site on the promoter region of HNF-3? gene has also been found. However, there are only limited literatures dealing with HNFs in bony fish. The roles and their relation of HNFs in the physiology of fish remain to be explored. Here we report on the first cloning of full-length cDNA and protein localization of HNF-4??nfrom a tilapia (O. mossambicus). A total of 2,031 bp of tilapia HNF-4??nfhas been cloned and its deduced amino acid sequence of the coding region (340 amino acids) of tilapia HNF-4? has a 89% identity with that of zebrafish, over 84% with mammals (human, bovine, rat, and mouse), 81% with chicken, and 79% with Xenopus. RT-PCR detected HNF-4??n?nin liver, kidney, intestine and stomach, and the identity of the PCR fragments was confirmed by sequencing analysis and PCR hybridization. Its relative expression ratio was higher in the liver than in intestine and kidney, and lowest expression ratio was observed in stomach. The same result happened in both genders. Western blotting and immunohistochemical localization also detected HNF-4? protein in the tissues mentioned before. Expression of HNF-4? in the tilapia suggests that multi-HNFs may form a cascade to regulate physiology in the bony fish.

Keywords : 吳郭魚 ; 第四型肝細胞核因子a型 ; 消化器官

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