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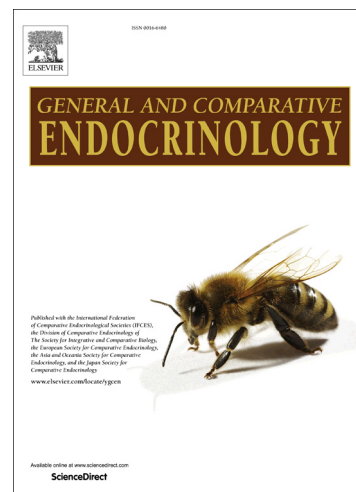
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Gonadotropin receptors of *Labeo rohita*: Cloning and characterization of full-length cDNAs and their expression analysis during annual reproductive cycle

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Abstract

Follicle-stimulating hormone (Fsh) and luteinizing hormone (Lh), secreted from pituitary, stimulate gonadal function by binding to their cognate receptors FSH receptor (FSHR), and LH/choriogonadotropin receptor (LHCGR). Rohu (*Labeo rohita*) is a commercially important seasonal breeder freshwater fish species, but till date, the regulation of expression of gonadotropins and their receptors gene during different phases of annual reproductive cycle has not been investigated. We envisaged the critical role of these molecules during seasonal gonadal development in this carp species. We cloned full-length cDNAs of *fshra* and *lhcrba* from rohu testis using RACE (Rapid amplification of cDNA ends) and analyzed their expression along with *fsh* and *lh* by quantitative real time PCR (qRT-PCR) assay at various gonadal developmental stages of the annual reproductive cycle. Full-length rohu *fshra* and *lhcrba* cDNA encodes 670 and 716 amino acids respectively, and in adult fish, they were widely expressed in brain, pituitary, gonad, liver, kidney, head kidney, heart, muscle, gill, fin, eye and intestine. In male, both *fsh* and *fshra* transcripts showed high level of expression during spermatogenesis, however, in female, expression level was found to be higher in the fully grown oocyte stages. The expression of rohu *lh* and *lhcrba* mRNA increased with increment of gonadosomatic index and showed highest level during spermiation stage in male and fully matured oocyte stage in female. These results together may suggest the involvement of *fshra* and *lhcrba* in regulating function of seasonal gonadal development in rohu.

Key words: Fshr, Lhcgr, Rohu, Gonad, Pituitary, Annual reproductive cycle

1. Introduction

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