

Studies on histological observations of gonads and pituitary gland of *Labeo rohita* by gonopro -FH

Treatment

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Abstract

Induced breeding is a technique whereby ripe fish brooders are stimulated by synthetic hormone introduction to breed in captivity. Synthetic hormones (drugs) are the only reliable method to procure the pure seed of the fish. New generation drug are now available as an alternative to the pituitary extract and other drugs. The present study deals with observation of gonads and Pituitary gland after treatment of Gonopro-FH in freshwater carp *Labeo rohita*. It was found that, Gonopro-FH injected fishes shows marked changes in the Pituitary gland as compare to untreated fishes. No cellular difference found in gonads of treated and untreated fishes.

Keywords: Gonopro-FH, Testis, Ovary, Pituitary gland, Induced breeding.

1. Introduction

Labeo rohita is an important and popular food fish in Akola district has been undertaken for the present work because its easily availability in the fish seed production center, Mahan (Akola). To meet the ever-increasing demand for fish, aquaculture has expanded very rapidly through induced breeding, it is an important tool in fishery management. *Labeo rohita* is commonly called 'rohu' and spawn only once in a year in month of July to August. During present study Gonopro-FH was introduced to know the pituitary gland and gonadal activity of *Labeo rohita*.

2. Material and Methods

During present study experiments were carried out at Mahan fish seed production center near Akola region. Matured male female fishes having similar weight and length were collected in July and August both the sexes were injected with single dose of Gonopro-FH at 0.3 to 0.4 ml/kg body weight and released in to spawning tank. Injected fishes were collected after 8 hours and dissected to isolate gonads for histological observation. The sections were taken at 6u thickness. Pituitary gland was stained in Mallorys Tripal Stain and gonads Harris Alum Haematoxylin and Eosin. Observations are carried out under light microscope with photographic attachment.

3. Result and Discussion

During the present work, the cellular response of the Pituitary gland and gonad of *Labeo rohita* on Gonopro-FH treatment has been studied on the basis of histological observations of Pituitary gland and gonads. Various inducing agent are being introduced in fish to breed under controlled environment conditions by different workers [1-15]. Histologically the ovary shows some ripe un spawned ova and few atreticoocytes (Fig 1&2).The testes shows seminiferous tubule gets enlarged in

size and full of sperm (Fig 3&4) in both treated and untreated fishes.

The Gonopro-FH injected fishes could brought significant changes in GtH cells activity in the proximal pars distalis of pituitary gland. The GtH cell of proximal pars distalis shows large quantity of granules in cytoplasm (Fig. 7). It is also found that when a fish injected with hormone increase in cell size, nuclear size and cytoplasmic granulation compared with untreated fishes (Fig.6). Hence, it is conferred that Gonopro-FH brought positive changes at the cellular level in pituitary gland.



Fig 1: T.S. of ovary (10x) of *L. rohita* (untreated) showing RO-Ripe Ova and ATR -atretic oocytes.

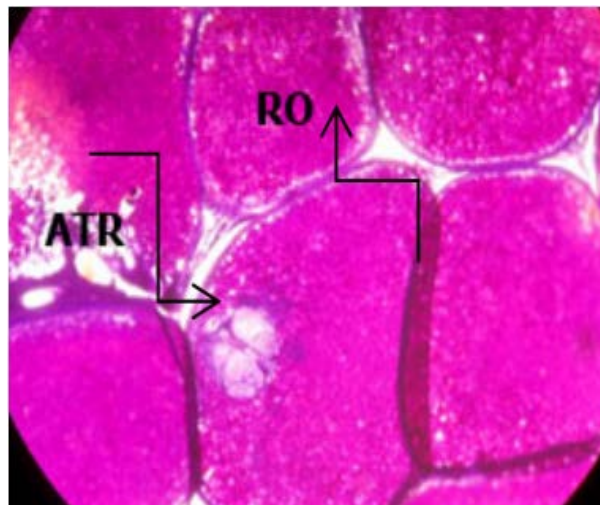


Fig 2: T.S. of ovary (10x) of *L. rohita* (treated with Gonopro-FH) showing RO- Ripe Ova and ATR -atretic oocytes

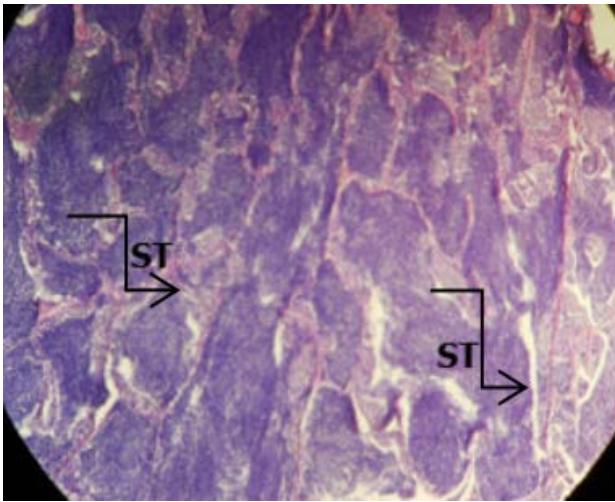


Fig 3: T.S. of Testis (45 x) of *L. rohita* (untreated) showing seminiferous tubules (ST) with full of sperm.

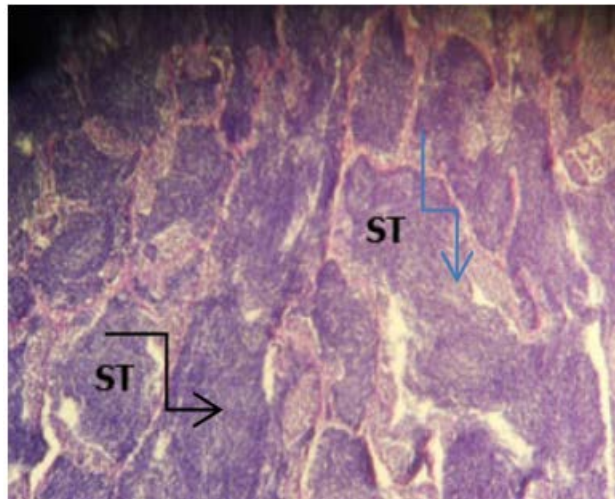


Fig 4: T.S. of Testis (45 x) of *L. rohita* (treated with Gonopro-FH) showing seminiferous tubules (ST) with full of sperm.

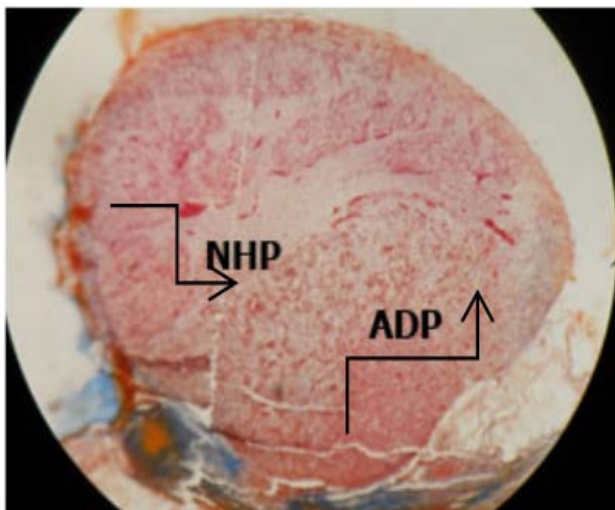


Fig 5: T.S. of Pituitary gland (10 x) Showing Adenohypophysis (ADP) and Neurohypophysis.(NHP)

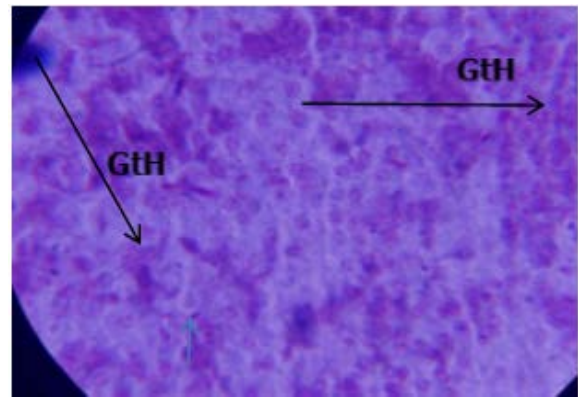


Fig 6: T.S. of pituitary gland (100 x) of *L. rohita* (untreated) Proximal Pars distalis Showing GtH cells with less granules.

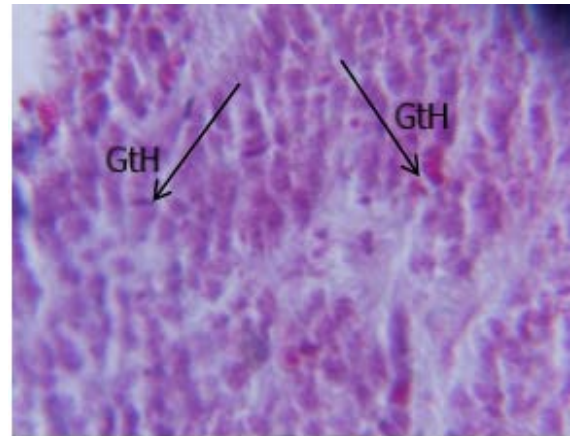


Fig 7: T.S. of pituitary gland (100 x) of *L. rohita* (treated with Gonopro-FH) Proximal Pars distalis Showing GtH cells increase in size, nuclear size and cytoplasmic granulation.

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