Histochemical studies on *Genarchopsis goppo* from fresh water Murrel, *Channa striatus*

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ABSTRACT

Genarchopsis goppo, a trematode parasite very commonly infects the fresh water murrel, *Channa striatus*. This parasite brought about histopathological and histochemical abnormalities in fish intestine. The histopathological changes include severe damage to the villi and other layers of the intestine. In the infected fish, carbohydrates, glycogen, protein and lipid contents are increased significantly. The present study deals with the histochemical nature in the intestine of infected and un infected fish.

Key words: Genarchopsis goppo, Channa striatus, Histochemistry, Histopathology

The helminth parasites not only alter the morphology I of the infected organs, but also cause interruption for nutrition and metabolism. It disturbs secretory functions of glands and other organs. It is therefore assumed that all these factors adversely influence on the host and may lead to the disease status and at lost the death of the host. However, the degree of pathogenecity and the damage depend up on the intensity of the infection, number of parasites found in the host tissues and the secretions of the parasite. Adult flukes invade different organs such as gills, digestive tract, liver and kidney. Earlier studies have been made on the trematodes found in fish (Srivastava and Mukherjee, 1976; Bose and Sinha, 1979; Barbara, 1980; Lester, 1980; Muzzal, 1980; Chung Yuitan, 1981; Gupta and Agarwal, 1984; Maqbool and Nizami, 1984; Zaman, 1990; Lakshma Reddy et al., 2006; Lakhsma Reddy and Benarjee, 2006; Benarjee and Lakshma Reddy, 2006; Benarjee et al., 2006; Benarjee and Laxma Reddy, 2008; Paradeshi and Hiware, 2010). In the present study histochemical changes have been observed in the intestine of fresh water fish, Channa striatus due to parasite, Genarchopsis goppo.

MATERIALS AND METHODS

For the present investigation, fishes were procured from the local fish market and also collected directly from

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the fishermen who directly caught fish from the local fresh water bodies. To collect the parasites, the fishes were sacrificed and screened after opening the alimentary canal. Since most of the parasites infect various organs of the alimentary canal, the entire alimentary tract was isolated from the fish and kept in Petridish containing normal saline. Intestine was thoroughly screened for the presence of the parasites. The parasites then collected on a slide and tied for fixation. The parasites were stained with Alum Carmine. The intestine of the infected and uninfected fish were isolated and preserved in Bouins, Susa, Carnoy and Zenker's fluids for the histopathological and histochemical studies (Pearse, 1968; Bancroft, 1975). A battery of histochemical tests was applied on the microtome cut sections of intestine both infected and uninfected to realize the histochemical changes that occur in the tissues if any due to infection of Genarchopsis goppo.

RESULTS AND DISCUSSION

The battery of histochemical tests conducted on the infected and uninfected intestine of *Channa striatus* revealed some interesting features of these tissues in various stages of physiological activity. The trematode infections interfere with the digestion and absorption of food material causing metabolic disturbances. The excretory products and the metabolic end products excreted by the parasite into the intestine produce toxicity. These abnormal conditions in the infected tissue alter the quantity and the secretory nature of various chemical