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Biochemical Studies on Cestode Parasites in *Mastacembelus Armatus* in Nasik District, M. S. (India)

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ABSTRACT

Parasitic biochemistry is an arena which is emerging in parallel with the new surge of interest in tropical diseases. The previously known parasitologists have been known to adopt biochemical methodology in order to stay up-to-date of development. The main source of energy for cestode inhabiting the alimentary tract of vertebrates is glucose. Proteins and lipids are also crucial and play many important biological roles. The protein content of the parasites adapted to parasitic mode of life typically constitute 20 to 40 percent of their dry weight, while as older proglottids are known to contain higher contents of lipid. The present study deals with biochemical estimation of cestode parasites and its host (Normal and infected intestinal tissue of *Mastacembelus armatus*) from Nasik district. The result show higher concentration of lipid in parasites than its host.

Keywords : Parasites, Biochemistry, *Mastacembelus armatus*, *Senga species,* Cestode.

I. INTRODUCTION

Fishes are economically important to human being having major source of biomolecules like protein, lipid, and glycogen. Parasitic disease of fish is very common throughout the world. Parasites affect fish health, growth and survival. Glycogen is the main structural component of tissue as major energy reserve and as phosphorylated intermediate. Glycogen is the main reserve polysaccharides in cestode (John barret., 1981). Glucose is the main source of energy for cestode inhabiting intestine of the vertebrate (Deep S Misra et al 1991). Cestode possess stored carbohydrate metabolism, with enormous amount of stored carbohydrates (Daughtery 1966, Fairbairn, Werthein, Harpuret Schiller 1961, Markov 1939 and Read et Rothman, 1957b). The intention of the present research is to estimate biochemical component of fish and its parasites.

II. METHODS AND MATERIAL

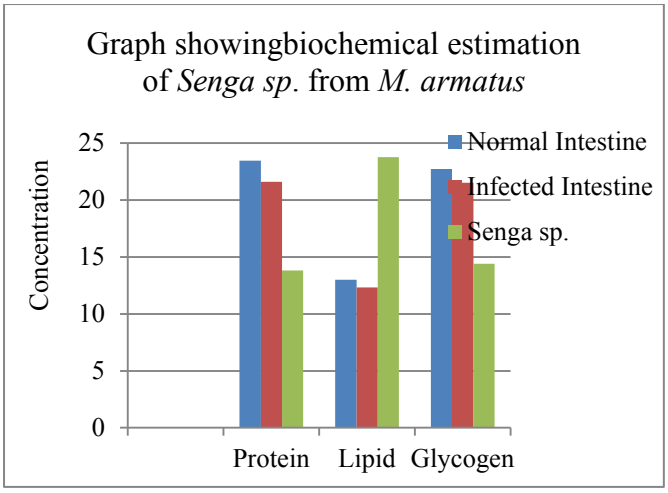
The parasites were collected from the intestine of *Mastacembelus armatus* and cleaned in distilled water. Collected parasites were dried on blotting paper and kept it to remove excess of water and transferred to watch glass for sensitive balance weighed. After 40-50 C for 24hrs, the dry weight was also taken. The estimation of protein content in the parasite was carried out by Lowrys method (1951), the glycogen estimation were carried out by Kemp et al (1954) and lipid estimation by floch et al (1957).

Observation

Biochemical content in the intestine of *Mastacembelus armatus* and its parasites (*Senga sp.*)

Table: Biochemical estimation of *Senga sp.* from M armatus.

Sr	Tissue	Protein	Lipid	Glycogen
1	Normal intestine	23.44	13	22.7
2	Infected Intestine	21.60	12.33	21.5
3	*Senga sp.*	13.8	23.74	14.4



III. RESULTS AND DISCUSSION

The values of biochemical estimation of *senga sp.* and *Mastacembelus armatus* shown in the table. According to these values it shows that the amount of protein present in the host intestine (Normal) is 23.44 mg/gm (Infected 21.60 gm/mg) of the wet weight of tissue and in parasites 13.8 mg/gm wet weight of tissue. Glycogen content in *Senga sp.* showed 14.4 mg/100 ml of solution and infected intestine shows 21.5mg/100 ml of solution (Normal intestine 22.7 mg/100 ml of solution). Hence it can be concluded that *Senga sp.* have low protein and glycogen content as compare to its host. Lipid content in the *Senga sp.* showed 23.74 mg/gm while in the Normal intestine of host 13 mg/gm (Infested intestine 12.33 mg/gm). According to the result it is concluded that higher content of lipid in *Senga sp.* than host.

IV.Acknowledgement

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V. REFERENCES

[1]. Daugherty, J. W. (1956): the effect of host castration and fasting on the rate of glycogenesis in Hymenolepis diminuta. J. Parasitol. 42:17-20.

[2]. Deep S. Misra, et. al (1991): Quantitative estimation of α amylase E.C.(3.2.1.1) in four species of cestode parasites. Indian journal of helminthology Vol. XXXXIII No. pp. 92-95.

[3]. Fairbairn, D.G., Werthim, R.P.Harpur and Schiller, E.L.(1961): Biochemistry of normal and irradiatedstrains of Hymenolepis diminuta. EXP. Parasitol 11: 248-263.

[4]. Folch, J., Lees, M. and Sloane-Stanley, G.H. (1957):The method of lipid estimation. J. Biol. Chem..228,497.

[5]. John Barret (1981): book of "Biochemistry of parasitic helminthes".

[6]. Kemp. A. Vankits and Haljnimgen A.J.M. (1954) : A colorimetric method for determination of glycogen in tissue. J 646-648.

[7]. Lowry, O.H., Rosebrough, N.J., Farr, A.L. and Randall, R.J. (1951): The method for protein estimation. J. Biol.Chem. 193:265 (The original method).