

A study of biochemical distribution of lipid in the body of cestode *Lytocestus Ambae* from a fresh water fish *Clarias batrachus*

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ABSTRACT

In the new research field of parasitology have started by knowing the different Physiology & Biochemical aspects of the parasite right from the beginning of the Twentieth Century. Helminth worms in general lead a parasitic mode of life. In Biochemical study of helminth worms or cestode, the percentage of protein, glycogen and lipid in the body of cestode investigated. The lipid contents of many tap worms have been investigated which varies from 3% to 6% of fresh weight of the parasite. The lipid content of the cestode parasite varies considerably from species to species. This is the study of Biochemical Distribution of lipid in the body of Cestode *Lytocestus Ambae* from a fresh water fish *Clarias batrachus*.

Keywords: Biochemical, Lipid, Cestode

INTRODUCTION

Cestodes are the endoparasites found attached to the wall of the intestine of the host body. They are finally attached to the host intestine through their suckers and hooks of the rostellum. The naked covering of the body of the parasite is permeable to physiological substances. As a matter of fact, the body covering exchange the material in the intestine lumen by the active and passive transport mechanism, hence the Biochemical Composition of the parasite is subjected to variation and these variations are likely to be influenced by the variation of the host. Lipid are of great importance of the body of cestode as the chief concentrated, storage from the energy, besides their role in cellular structure and various of her biochemical function. Lipid may be regarded as organic substances relatively insoluble in water, soluble in organic solvent, alcohol and other etc. Actually, or important to the body as constituent of membrane. Source of fat soluble (A, D, E & K) vitamins and metabolic regulators. The lipid content of the cestode parasite varies considerable from species to

species (Von Brand, 1973). Lipid content also varies with age of the proglottids (Fairbaorn *et al.* 1961).

MATERIALS AND METHODS

Twenty intestines of *Clarias batrachus* (Linnaeus;1958) were dissected. Out of these intestine, seven intestines were found to be heavily infected, small pieces of infected intestine were also collected to estimate the lipid content from host intestine. The lipid content in cestode parasites and host intestine was estimated by folch *et.al.* (1957) method. The worms were kept on blotting paper for removing the excess of water, then these worms were kept in watch glass and wet weight of them taken, then they were kept in oven at 60 ° degree until tissue become dry.

50 mg of tissue taken in a centrifuge tube and analyzed for lipid content. The tissue was homogenized with chloroform. Methanol (2:1) mixture and 0.2 ml of NaCl (0.9%) was added and centrifuged for 5 minutes at 3000 R.P.M. The lower phase comprising of chloroform methanol layer contained all the lipid was separated and evaporated at room temperature overnight. To this test tube, 2ml of concentrate H₂SO₄ was added and boiled for 10 minutes in a water bath and cooled.

The sample volume 0.1ml was taken in clean test tube and made up to 1ml with concentrate H₂SO₄ acid to which 2.5 ml of phosphor vanillin reagent was added incubated for 30 minutes. The color develop was read 53 minutes in a calorimeter against reagent blank. The amount of lipid was determined by referring to the standard graph was prepared by concentration of standard on X axis and O.D. on Y axis. The lipid concentration was expressed as mg per gram wet weight of the tissue.

$$\% \text{ of lipid} = \frac{\text{O.D. of sample} \times \text{Conc. of Standard}}{\text{O.D. of Standard}} \times 100$$

The lipid amount of host *Clarias batrachus* was estimated by same method. The lipid amount of host was found 31.40 mg/gm of wet weight of tissue.

RESULTS

From above calculations, it is observed that the percentage of lipid content in cestode parasites is 36.4

mg/gm of wet weight of tissue and the lipid amount content in host *Clarius batrachus* is 31.40 mg/gm of wet weight of tissue.

CONCLUSION

From above biochemical estimation of lipid, it is concluded that the percentage of lipid is high in parasites as compared to their hosts. These parasites observing most of nourishing from host and fulfilling its need and causing hindrance in the proper development of host.

Conflicts of interest: The authors stated that no conflicts of interest.

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