

A Study on Protein Content of Cestode Parasite *Cotugnia Dinogopora* (Pasquale 1890, Diamare, 1893) in *Gallus Gallus domesticus*

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Abstract: The present investigation deals with the biochemical study of protein content of cestode parasite, *Cotugnia Digonopora* and its host tissue i.e. normal and infected intestinal tissue of *Gallus gallus domesticus* in jogeshwari (E) Mumbai. The result obtained an amount of protein content present in cestode parasite is lower as compared to protein present in infected intestine as well as normal intestine.

Keywords: Biochemistry- protein Content, *Gallus gallus domesticus*, *Cotugnia Digonopora*

1. Introduction

Poultry is a very popular source of meat in India because of its low price and it is easily digestible. Mainly 2 types of poultry are found. One is Broiler fowl and another is Domestic fowl. Among these, domestic fowl is important because poor farmers can easily grow it in house to earn money and food cost of domestic poultry bird is very low as needs no extra feed supply. Cestode parasite is one of the major disease among other parasitic infections. *Cotugnia Digonopora* (Pasquale 1890, Diamare, 1893) is one of the major causative agent of cestode parasite.

Proteins play a very significant role in the construction of egg shell, supplying nutritive material and the formation of subsequent larval bodies. It is very needs that the parasite body should be provided by enough amounts of proteins. The main significance of the proteins is their role in the structural make up of the body rather than in the gaining of the energy. Proteins play a very important role in the production of energy by acting as catalysts for various metabolic processes. The importance of proteins held in their specificity in differentiating an enzyme with other or functionally differentiating an organ from another. Yet they are important in the structural body make-up.

The Proteins are absorbed by the parasites by diffusion and transfusion. Proteins have many different biological functions. They are everywhere in their distribution and there is really no satisfactory scheme of classifying them. The largest groups of proteins are the enzyme proteins provide rich environment for the nourishment of cestode.

The cestodes utilize different degrees of protein that producing energy. Literature reveals that the parasites able to adopt themselves to the parasitic mode of life, the protein usually constitutes between 20 to 40 % of the dry weight (John Barrett, 1981). The present investigation deals with the biochemical studies of protein content Cestode parasites i.e. *Cotugnia Digonopora* in *Gallus gallus domesticus*.

2. Materials and Methods

Sample Collection

The worms were collected from the intestine of birds i.e. *Gallus gallus domesticus* and then washed with distilled water. Collected worms were then dried on the blotting paper to remove excess water and transferred to watch glass and weight on sensitive balance. After 50- 600 C for 24 hrs. The dry weight was also taken.

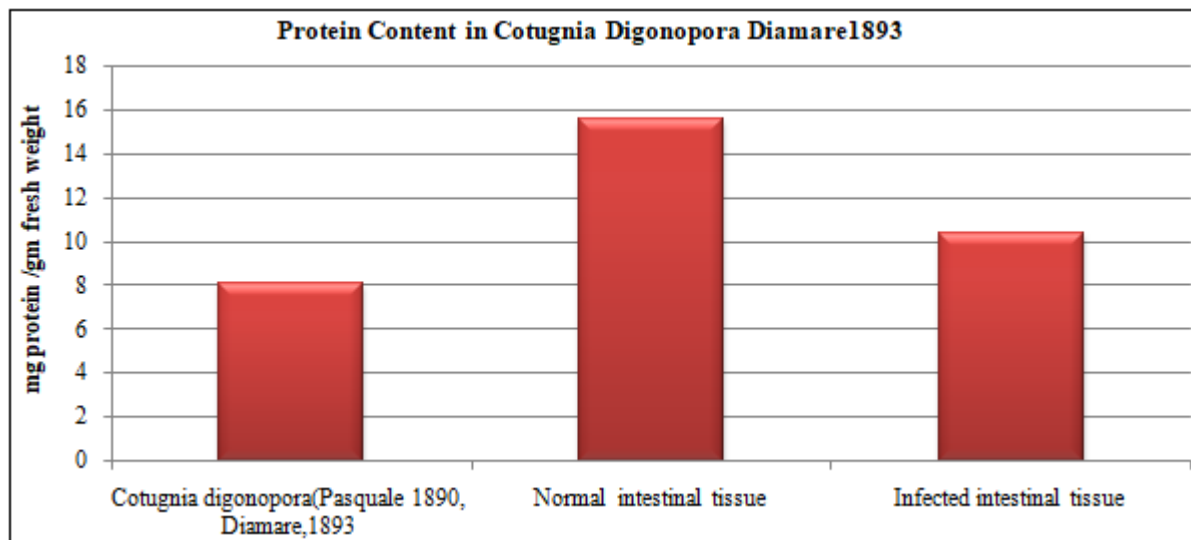
Biochemical Estimation

The estimation of protein content in the Cestode parasites were carried out by Lowry's method (1951)

Observation table

Table 1 showing the levels of protein in *Cotugnia Digonopora*

<i>Cotugnia Digonopora</i> (Pasquale 1890, Diamare, 1893)	Intestinal tissue <i>Gallus gallus Domesticus</i>	
	Normal intestinal tissue	Infected intestinal tissue
8.05	15.55	10.33



3. Result and Discussion

The quantitative values of biochemical estimation in *cotugnia* shown in the table no 1. It shows that the amount of protein present in the host intestine is 15.55 mg/gm of the wet weight of tissue. While in parasite 8.05 mg/gm wet weight of tissue.

The result obtained an amount of protein content in the present study indicates that the amount of proteins present in cestode parasites is lower as compared to protein present in infected intestine as well as in host normal and infected intestine. This is summarized in table.

In parasitic helminthes, the protein usually constitute between 20 – 40 % of the dry weight (Sharma 1979) but values, as high as 70% of the dry weight have been reported for *Macrachanthorhynchus hirudinaceus* and the infective larvae of *Nippostrongylus brasiliensis* (Barrett, 1997) the female parasites showed higher level of amino acid than the males (Barus, 1998) the total protein content of *Acanthocephalon* parasites *Pallisentis nagpurensis* shows the female parasites were having higher protein content than males.

Result shows parity with findings of Jadhav et.al. 2008 who reported amount of protein present in *Davaineashindei* 13.20 mg/mg wt. of tissue where as in host intestine is 15.42 mg/mg of tissue. The distribution of protein content shown in the present study is an agreement with the result of Jadhav et.al, 2007, Nanware et.al. , 2010, and Bhure et.al, 2011

Result obtained in present study indicate that amount of proteins present in *Cotugnia* Sp. is 9.05 mg/gm and Non-infected and infected intestine of host 13.9 mg/gm and 15.06 mg/gm respectively. It means that Amol Thosar et al., (2014) reported that amount of protein in *Moneizia* Sp. is 0.2 mg/100mg dry weight of tissue and *Stilesia* Sp. is 0.11 mg/100mg dry weight of tissue and infected and non-infected host intestine i.e. *Ovisbharal* is 0.34 mg/ 100 mg dry weight of tissue and 0.36 mg/100 mg dry weight of tissue respectively. Asawari Fartade and Ravindra Chati, (2016) reported amount of protein in *Cotugnia* Sp. is 6.77 mg/gm where as in host infected and non-infected intestine

is 8.6 mg/gm and 17.2 mg/gm respectively. The present study reveals that, protein content is lower in *Cotugnia Digonopora* than the infected and non-infected intestine of host i.e. *Gallus gallus domesticus*

4. Conclusion

The present study concluded that, the amount of protein is low in cestode parasite than infected intestine and normal intestine of host.

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