

## Studies on protein content of cestode *Cotugnia* and its host *Gallus gallus domesticus*

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### Abstract

The present study deals with the protein content in cestode parasite *Cotugnia digonopora* and its host tissue i.e. normal and infected intestinal tissue of *Gallus gallus domesticus*. 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 normal intestine.

**Keywords:** *Cotugnia digonopora*, *Gallus gallus domesticus*, Protein Content.

### INTRODUCTION

Parasitism is a natural way of life, among the large number of organism and parasitic diseases are the major public health problem, which results into morbidity and mortality in tropical countries, particularly in the socio economically under developed societies in the world. Proteins are fundamental units for all metabolic activities; they are most important agents for expression of the genetic material. Proteins are the most abundant organic molecules in cells constituting 50 percent or more of their dry body weight. They are found in every part cell; since they are fundamental in all aspects of cell structure and function. The proteins are absorbed by the parasites by diffusion and transfusion. Tapeworms completely lack alimentation in all stages of life history. The cestode parasites utilize the food from the intestinal gut of host. The metabolism depends on the feeding habits and the rich nourishment available in the gut of the host. The parasites use this nourishment for their normal development and growth.

### MATERIAL AND METHODS

Some intestines of *Gallus gallus domesticus* were brought to the laboratory and these intestines were dissected to find out the infection of cestode parasites. The tapeworms were collected washed thoroughly in distilled water, few of them fixed in 4% formalin for identification. The taxonomic observation turns then to *Cotugnia digonopora*. The Protein content was determined by the Lowery's Method.

### RESULTS

The result obtained an amount of protein content in the present

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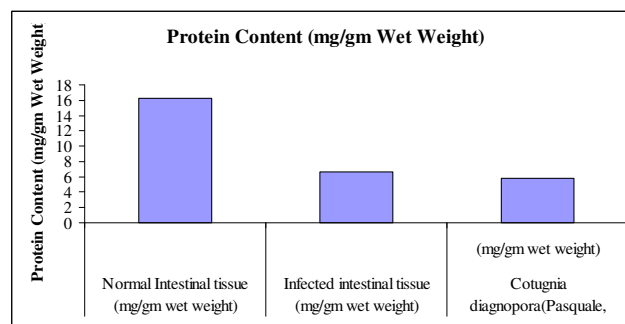
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study indicates that the amount of proteins present in cestode parasites is lower as compared to protein present in infected intestine as well as in host normal and infected intestine. This is summarized in table.

Table. Comparative chart of protein content in Normal host intestinal tissue, Infected Intestinal tissue and their parasite.

Protein Content (mg/gm wet weight)		
Normal Intestinal tissue	Infected intestinal tissue	<i>Cotugnia digonopora</i> (Pasquale, 1890, Diamare, 1893)
16.22	6.66	5.77



Graph. Graph showing protein content in Normal host intestinal tissue, Infected Intestinal tissue and their parasite.

### DISCUSSION

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 then the males ( Barus, 1998 )

the total protein content of Acanthocephalon parasites *Pallisentis nagpurensis* shows the female parasites were having higher protein content than males.

They also determine soluble, insoluble protein and free amino acids in adult *Pallisentis nagpurensis* that is soluble protein in female body  $40.1 \pm 4.2$  where as in male is  $20.2 \pm 3.0$ , in soluble protein is  $54.2 \pm 4.2$  in female and  $30.2 \pm 3.0$  in male and free amino acid is  $4.05 \pm .05$  in female where as  $3.10 \pm 0.42$  in male body.

The similar result also reported by Jadhav et.al. from *Davainea shindei* amount of protein present in *Davainea shindei* 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.

## 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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