RESEARCH PAPER | Zoology | Volume : 4 | Issue : 4 | Apr 2014 | ISSN - 2249-555X

# Studies On Protein Contents Of MONIEZIA EXPANSA RUDOLPHI, 1810 And Its Host CAPRA HIRCUS

KEYWORDS: Capra hircus, Moniezia expansa Rudolphi, 1810, Protein Content

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**ABSTRACT** *The present investigation deals with the content of protein in cestode parasite Moniezia expansa Rudolphi, 1810 and its host tissue i.e. normal and infected intestinal tissue of Capra hircus. The result obtained an amount of protein content in the present study indicates that the amount of proteins present in cestode parasite Moniezia expansa is lower (2.72 mg/gm wet weight) as compared to protein present in infected intestine of Capra hircus (3.63 mg/gm wet weight) as well as in host normal intestine of Capra hircus (4.09 mg/gm wet weight).*

**Introduction**

Parasitology has developed in to a multi-dimensional approach in helminth research. They serve as valuable models for the study of fundamental biological phenomena, since many species of parasites during their life cycle undergo remarkable morphological and biochemical adaptations related to different environments. 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. Parasites use this nourishment for their development and growth.

Moniezia expansa has a typical cestode body, consisting of the anterior scolex, followed by the neck and a highly extended body proper, the strobilus. It is an extremely long tapeworm, and can reach an enormous length up to 6–10 m. The scolex bears four large suckers, which are the holdfast organs to the host. There are no rostellum and rostellar hooks, and the suckers are devoid of spines. The tapeworm, being monecious, contains both male and female reproductive organs in an individual.

**MATERIAL AND METHODS**

Some intestines of Capra hircus 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 hot 4% formalin for identification. The taxonomic observation turns then to Moniezia expansa Rudolphi, 1810. The Protein content was determined by the Lowery's Method.

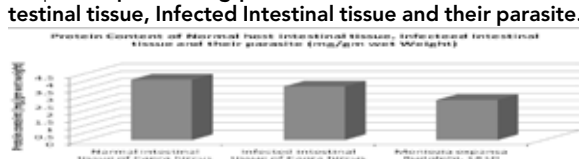
**RESULTS**

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.

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

| Protein contents | | |
|---|---|---|
| Normal Intestinal tissue (mg/gm wet weight) | Infected intestinal tissue (mg/gm wet weight) | Moniezia expansa Rudolphi,1810 (mg/gm wet weight) |
| 4.09 | 3.63 | 2.72 |

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 then males.

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

The similar result also reported by Jadhav et.al., 2007 from Davainea shindei amount of protein present in Davainea

Volume : 4 | Issue : 4 | Apr 2014 | ISSN - 2249-555X

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 Nanware et.al. (2010), Bhure et.al. (2011). Bhure et. al., 2012 studied amount of proteins present in nematode parasites is lower(15.88 mg/gm) as compared to protein present in infected intestine (19.33 mg/gm) as well as in host normal intestine (19.77 mg/gm). Nanware et.al., 2012 studied amount of proteins present in Cestode Cotugnia sp. parasites is lower(5.77mg/gm) as compared to protein present in infected intestine (6.66 mg/gm) as well as in host normal intestine (16.22 mg/gm).

The present study can be concluded that, the amount of protein is low in cestode parasite than infected intestine and normal intestine of host. As well as the difference in the protein content of the parasite can be due to the difference in diet.

ACKNOWLEDGEMENT
The authors are indebted to Dr. N.V. Kalyankar, Principal, Yeshwant Mahavidyalaya, Nanded and Dr. R. P. Mali Head, Department of Zoology for their kind help, inspiration and providing necessary laboratory facilities.

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