

NUCLEIC ACIDS IN THE CESTODE *MONIEZIA EXPANSA* IN *CAPRA HIRCUS* (GOAT)***Dama L.B., *Chandarki M.S. **Chondekar R. P. **Dama S.B. and *Varade M.B.**

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(Corresponding Author's E-mail: damalaxmikant@gmail.com)**ABSTRACT**

The nucleic acid contents in the cestode parasite, *Moniezia expansa* of *Capra hircus* were studied. Nucleic acids are the polymers of nucleotides. Each polymer consisting of pentose sugar which joined to nitrogen base and phosphate group. These are normally constitute about 5-15% of the dry weight of tissue and are involved in storage, transmission and translation of the genetic information. Nucleic acid performs significant role in the operation of various cellular function. The result in present investigation reveals that the amount of RNA is more in the cestode as compared with the DNA.

KEY WORDS: *Capra hircus*, DNA, *Moniezia expansa*, Nucleic acid.**INTRODUCTION**

DNA analysis is playing an increasingly important role in characterizing and classifying parasites. Though less emphasis has been placed on utilizing DNA elements to study parasites of veterinary importance, correct diagnosis is, nevertheless, critical to proper treatment and control. Throughout the years, the diagnosis of parasitic infections and the study of the systematics, epidemiology and population biology of parasites have been approached from many perspectives including, but not limited to, the comparison of morphological characters, pathogenicity, relative infectivity and the host range of the parasite. Helminth parasites are causes wide range of health problems to both man and animals Colley *et al.*, (2001). Helminthiasis, in large part, is caused by members of the phyla Platyhelminthes and Nematoda (Kennedy and Harnett, 2001). The isolation of nucleic acids, the construction of genetic libraries and the use of DNA probes have been reviewed by Smyth and McManus (1989). Malhotra and Cappor (1982), studies on amino acid in *Railletina saharanpurensis* with note on a biochemical variation in cyclophyllidean cestode. Moilenkot (1975), observed the nucleic acid and some ash elements in the organ of *Ascaris suum*. Graft *et al.*, (1965); Goodchild and Dennis (1966); Salmov (1976), Bolla and Roberts (1971); Dubinsky and Rubos (1980); Bareet (1983); Colley *et al.*, (2001); find out the nucleic acid content in helminthes. Probably the most popular methodologies used today in the diagnosis of disease are based upon the immune response to parasitic infections and the development of monoclonal antibodies to well-defined and specific antigens.

MATERIAL AND METHODS

Common cestode parasites of *Capra hircus* (Goat) were selected for the present investigation, the parasites of goat directly were collected from the slaughter house and that of fowl were collected from the chicken center, Solapur district Maharashtra. The intestine of the fowl were then cut, open and parasites were flushed into saline water and repeatedly washed in ice cold saline water to remove adhering mucus particle. The same procedure was applied for the parasites of goats also. Generally, mature and live worms of same size and length were taken for biochemical studies. The parasites were then transferred to Whatman's filter No.1 to remove the adhering moisture. Then the parasites were weighed and used for the experiment. The nucleic acid was estimated by the Diphenylamine method for DNA and Orcinol reagent method for RNA.

RESULTS AND DISCUSSION

The quantitative result of the nucleic acid content in the different regions of the parasites of *Capra hircus* (Goat). The total deoxyribose nucleic acid (DNA) content of cestode parasite of *Capra hircus* was 354.3 ± 5.4 , 287.9 ± 15.9 , 244.7 ± 6.3 . As compared to the studies of Samantha *et al* (2008), was 281.69 ± 3.24 , 234.41 ± 3.23 , 136.52 ± 1.65 . The total ribose nucleic acid content (RNA) in the immature, mature and gravid regions of parasites of *Capra hircus* was 401.9 ± 7.80 , 348.1 ± 7.60 , 267.9 ± 7.18 . The result of the present investigation reveals that RNA content was more, when compared to the DNA in both the parasites. In comparison between both the host parasites the RNA content was more in cestode parasites of *Capra hircus*. In view of high content of RNA it is presumed that more protein synthesis was taking place intestinal parasites.

Table 1. Total nucleic acid content in the Cestode parasites of *Capra hircus* (Goat)

Sr.NO.	Immature		Mature		Gravid	
	DNA	RNA	DNA	RNA	DNA	RNA
1	335.18	375.37	280.17	326.57	220.16	240.77
2	352.22	398.43	229.19	339.61	246.14	267.69
3	355.42	400.28	315.21	367.72	252.29	278.57
4	367.34	416.52	313.36	362.86	255.32	280.80
5	361.47	418.81	301.54	343.87	249.46	271.84
Mean	354.3± 5.4	401.9±7.80	287.9±15.9	348.1±7.6	244.7±6.3	267.9±7.1

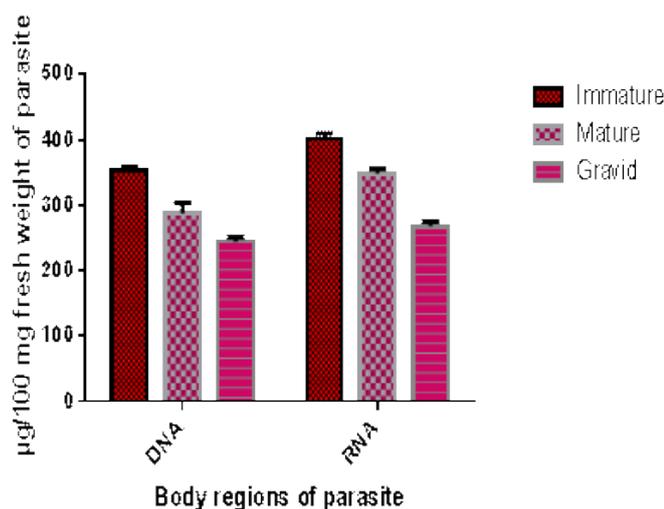


Figure 1. Total nucleic acid content in segments of *M. expansa* from *Capra hircus* (Goat)

Howells and Erasmus (1969), were made histochemical observations on the tegumentary epithelium and interproglottidal glands of *Moniezia expansa*. They studied the histochemical localization of lipids, proteins, carbohydrates, phospholipids, nucleic acids, acid phosphatase, alkaline phosphatase, esterase etc. The presence of high amount of nucleic acid in immature region of the parasites can be correlated to the high amount of protein in that region. Most of the nucleic acid synthesis occurred in the region of proliferation of rapid growth or development. Thus the considerable amount of nucleic acid present in this parasite shows that powerful protein synthesizing machinery is functioning.

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