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The activity of transaminases in *Primasubulura alata* (Nematode) Parasitizing in *Perdicula asiatica*

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Abstract
Transaminases are responsible for the transfer of amino groups from an amino acid to a Keto acid resulting in the formation of different amino and Keto acids. Transaminases provide intermediates of amino acid metabolism by converting excess of amino acids to Keto acids or vice-versa, ensuring a redistribution of nitrogen. Hence, these amino transferences serve as a link between carbohydrate and amino acid metabolism.
Alanine amino transferase and Asparatate were quantitiatively estimated in *Primasubulura alata*.

Keywords: *Primasubulura alata*, *Perdicula asiatica*, amino acid

1. Introduction
Transaminases are responsible for the transfer of amino groups from an amino acid to a Keto acid resulting in the formation of different amino and Keto acids and this process is known as transamination.
All amino acids can serve as aminodonors except glycine, threonine and lysin. But only α – Keto glutarate, oxaloacetate or pyruvate can serve as acceptors. Transaminases are most active in the heart muscles, brain, liver and kidney of higher animals.
More than 50 transaminases have been identified on the basis of substract specificity and biological origin (Boyer 1979). Jenkins *et. al*., (1958) [5] observed the first purified sample of L-Asparate amino transferase from pig heart muscles.
Transaminases play a significant role in protein metabolism, which is a key point in the intra cellular energy metabolism. These enzymes provide a template for amino acid formation to synthesis their respective keto acid. Transaminases provides intermediates of carbohydrate metabolism, by converting excess of amino acids to keto acids or vice-versa, ensuring a redistribution of nitrogen. Hence, these amino transferases serve as a link between carbohydrate and amino acid metabolism.
In parasitic helminths the main mechanism of amino acid synthesis was by transamination (Von Brand 1973) [11]. The most studied systems in parasites are:

1. Pyruvic acid Transaminases - alamine
2. α-Keto glutaric acid Transaminases - Gluamic acid
3. Oxaloacetic acid Transaminases - Aspartate

Pollak and Fairbairn (1955) [8], reported Keto acids other than α-Keto glutarate and pyruvate, oxaloacetate was observed in the ovaries of Ascaris.
In the present study transaminases in *Primasubulura alata* was quantitatively estimated. The enzyme Aspartat amino transferase (AAT) and Alanine amino transferase (ALAT) are also known as Glutamic oxaloacetic transaminases (GOT) and Glutamic Pyruvic transaminase (GPT) respectively.

Materials and Methods
Primasubulura alata a common parasite of jungle bush quail was selected for the present investigation, since the biochemical aspects of the parasite has not been studied earlier.
These birds were collected from Ranga Reddy district and were sacrified in the laboratory. The intestines were then cut open and the parasites were flushed into saline water and repeatedly washed in ice-cold saline water to remove the adhering mucus and food particles. 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 enzyme assayed for the estimation of AAT and ALAT activity in the parasistes by the colorimetric method of Reitman and Frankel (1957) [9] as described by Bergmyer (1965).

Results

The values of asparts the amino transaminases (AAT) and alamine amino transaminase (ALAT) in Primasubulur alata was 0.026± 0.003 and 0.033 ± 0.002 u moles of Na-Pyruvate/mg protein/hour.

Discussion

The results obtained in the present investigation indicated that the avian parasite *Primasubulura alata* possess amino transferase system. Hence, it may be assumed that these parasites were capable of shifting the metabolism from one pathway to another.

The converted amino acids enter the carbohydrate metabolism where the energy yield was more and those carbohydrate intermediates which may be trapped for the formation of amino acids were used in the break down or synthetic processes.

The transmination capacity in tape worms was extremely limited when compared to vertebrates (Awapara and Seals 1982). In contrast higher transaminase activity have been reported in trematodes, Fasciola hepatica (Daugherty 1952) [2] and in the nematode Ascaris (Savel, 1955) [10].

In the present investigations, the transaminases activity in *Primasubulura alata* was compared to the observations of Savel, (1955) [10]. Geeta Rajlinagam, (1985) [4] and Manjusha, (1992) [7].

Transaminases have little importance to helminth parasites in satisfying their amino acid requirement because they readily absorb amino acids from their habitate, which was rich in amino acids. Hence, the capacity of transamination was very limited.

Table 1: The Transaminases Activity in *Primasubulura Alata*

S. No.	Asparatate amino transaminases	Alanine amino transaminase
1.	0.037	0.043
2.	0.016	0.028
3.	0.021	0.030
4.	0.027	0.031
5.	0.032	0.033
6.	0.028	0.035
Mean	0.026	0.033
S.E. ±	0.003	0.002

Values expressed as moles of Na-pyruvate /mg protein /hour.

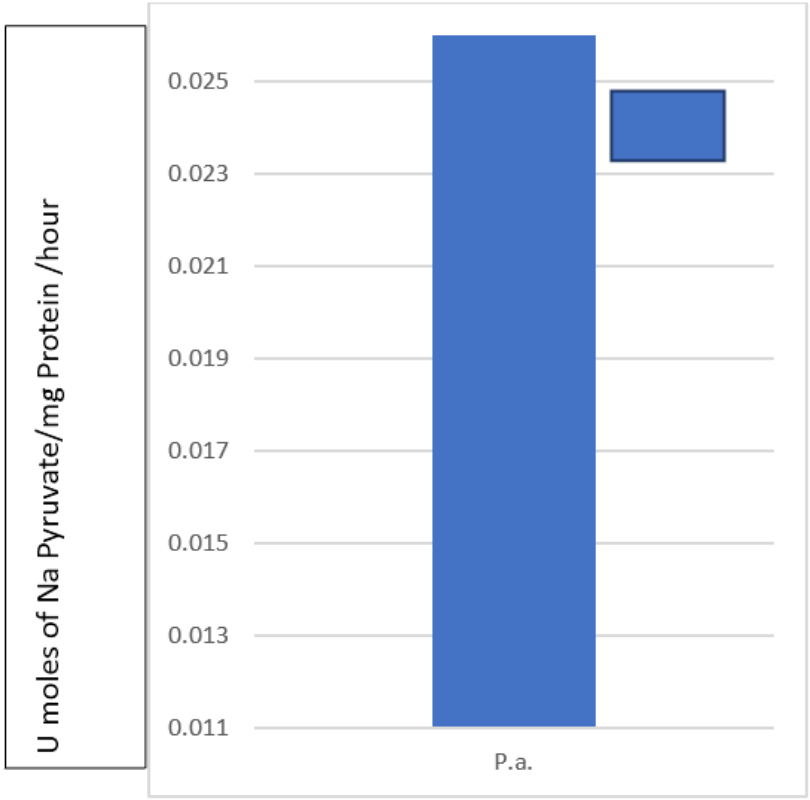

Fig 1: Asparate amino transferase activity in *Primasubulura alata* (P.a.)

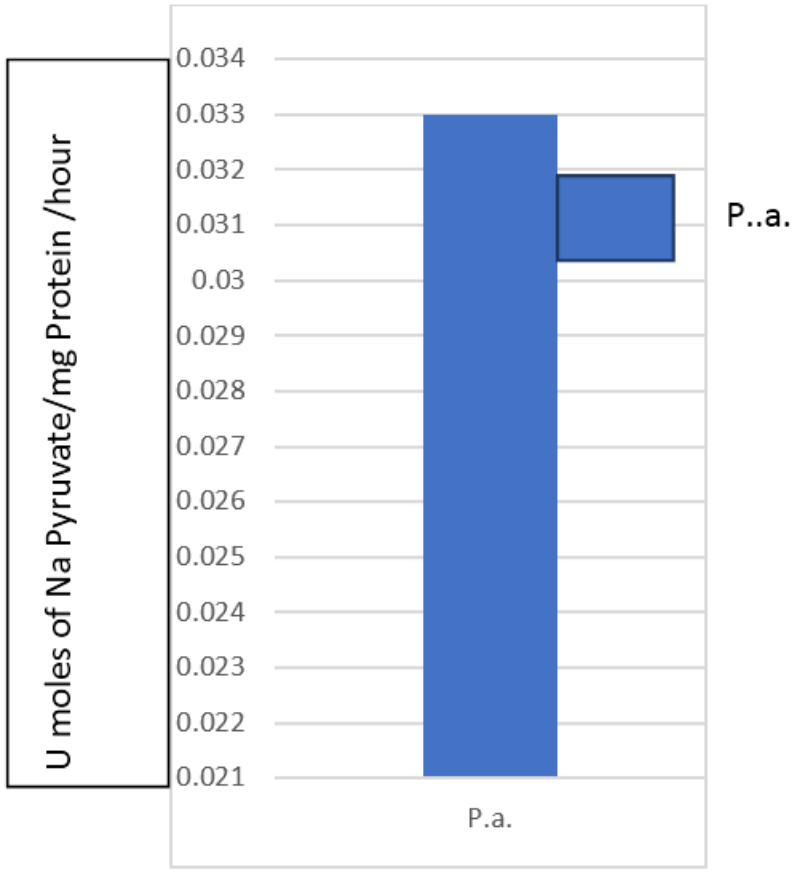

Fig 2: Alanine amino transferase activity in Primasublura alata (P.a.)

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