

## **Hexokinase and carnitine palmitoyltransferase activities in flight muscles of grasshopper *Valanga nigricornis*(burm.)**

### **ABSTRACT**

1. The activities of hexokinase and carnitine palmitoyltransferase (CPT) activities were assayed in flight muscle mitochondria of *Valanga nigricornis*.
2. Kinetic analysis of the enzyme activities yielded the following information: for hexokinase, its  $K_m$  (glucose) is  $150 \mu\text{M}$  while its  $V_{\text{max}}$  is  $2.5 \mu\text{mol/min/mg protein}$ ; the corresponding data for CPT are  $K_m$  (palmitoylCoA) of  $39 \mu\text{M}$  and  $V_{\text{max}}$  of  $22.2 \text{ nmol/min/mg mitochondrial protein}$ .
3. Under conditions of equivalent rates of ATP production the hexokinase-CPT activity ratio is 64, suggesting that although *V. nigricornis* is a mixed fuel utilizer, it appears that carbohydrate oxidation constitutes the predominant energy source.

**Keyword:** Hexokinase; Carnitine palmitoyltransferase; *Valanga nigricornis*