

Relation between Glycoprotein and EA4 – Time Mechanism in *Secamia cretica*

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Abstarc :

Abstract: ATPase (EA4) seems to measure time- interval as a diapause – duration timer in the seasonal cycle of the *Sesamia cretica*. A peptide named peptidyl – inhibitory needle (PIN) seems to regulate the time measurement of EA4. We characterize the EA4 in the first step to analyse its interaction with PIN. Matrix – assisted laser desorption/ ionization – time of flight- mass spectrometry shows EA4 of an equimolar complex with PIN. The binding affinity of EA4 for PIN is about 460nM, measured by surface plasmon resonance. Western blot analysis of EA4 with a variety of biotinylated lectins suggest that EA4 is a glycoprotein containing N- linked oligosaccharide. By enzymatic cleavage of the glycosyl chain the carbohydrate is revealed to be essential for the regulation of EA4- time measurement through the interaction with PIN. PIN holds the timer by binding to EA4, and the dissociation of the complex could constitute the cue for the time measurement. [Nature and Science. 2010;8(5):131-138]. (ISSN: 1545-0740).

Key Word :

Timer protein, Glycoprotein, Time – EA4, ATPase

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