

## **Analysis of Silkworm Egg Proteins in Reference to Diapause**

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### **Objectives**

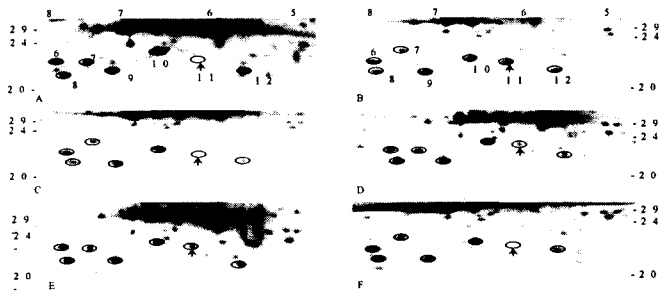
We investigated the proteins that are associated with initiation, maintenance, and termination of diapause in silkworm eggs by means of 2D-gel electrophoresis.

### **Materials and Methods**

1. Materials : *Bombyx mori* : unfertilized eggs, diapause eggs, non-diapause eggs, HCl-treated eggs, cold-treated eggs.
2. Methods : isoelectric focusing, SDS-PAGE, silver staining.

### **Results and Discussion**

Many spots were detected and at least two of them were thought to be associated with diapause of the silkworm eggs. The spot No.4 with molecular weight range of 38,000 to 40, 000 and pI 6-6.3 were observed in HCl-treated eggs, cold-treated eggs, and diapause eggs, while this spot was not detected in unfertilized eggs and 2-day-old non-diapause eggs. Perhaps the protein seems to be associated with the entrance into diapause. The spot No. 11 with molecular weight range of 21,000 to 23,000 and pI 6-6.5 was detected in normal unfertilized eggs, HCl-treated eggs, cold-treated eggs, and 1-day-old eggs after oviposition. But the protein did not occurred in the unfertilized eggs, and non-diapause eggs which obtained by SG extirpation from the newly molted pupae. This spot was also observed in 1-, 3-, 5-, and 30-day-old eggs after cold-treatment. The spot, however, was not detected in diapause eggs elapsed 3, 5, and 30 days after oviposition. This result illustrates the gene of No.11 protein would be activated in response to physical stress such as cold or hot-HCl, while it may be down-regulated with the onset of diapause.



**Fig. 1.** A. Unfertilized eggs obtained by SG-extirpated female moth B. Normal unfertilized eggs C. Non-diapause eggs passed 1 day after oviposition D. 10-day-old eggs after cold-

treatment E. 1-day-old eggs after oviposition F. 10-day-old eggs after oviposition. The spot 11 also observed 1-, 3-, 5-, and 30-day-old eggs after cold-treatment (data not shown), but the spot was undetectable in diapause eggs passed 3, 5, and 30 days after oviposition. The spot No.11 may be a cold specific protein that is appeared cold-treated eggs.

### **Reference**

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