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Cloning, Sequencing, and Gene Expression of a cDNA Encoding the Arylphorin from the Chinese Wild Oak Silkworm, *Antheraea pernyi*

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The *Antheraea pernyi* storage protein referred to as arylphorin produced by insect larvae at the 5th instar is a hexameric haemolymph protein with approximately 80 kDa single subunit. The cDNA and the developmental profiles of the mRNA for *A. pernyi* arylphorin have been determined. The complete *A. pernyi* arylphorin cDNA sequence comprised 2,234 bp (without the poly A+ tail), including an open reading frame of 2,112 bp beginning with a methionine ATG at bp 34. The *A. pernyi* arylphorin contained 704 amino acid residues which are highly enriched in aromatic amino acids, phenylalanine and tyrosine. The calculated molecular mass of the *A. pernyi* arylphorin from the open reading frame was 83,439 dalton. The deduced amino acid sequence of *A. pernyi* arylphorin showed 78%, 71%, 62% and 64% identity with those of *Hyalophora cecropia, Manduca sexta* α subunit, *M. sexta* β subunit and *Bombyx mori* storage protein, respectively. In Northern blot analysis, the *A. pernyi* arylphorin mRNA only in the fat body of the 5th larvae was responsible for the gene expression of the protein, and the synthetic activity of the mRNA was detected strongly in the early larvae distinctive from the middle or late larvae. And very weak signal in mRNA activity was detected in pupal stages, but these are considered as inactive mRNA by viewing the results of the other protein labeling experiment related to this research.