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Very similar yolk protein genes in *Hyphantria cunea*

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Yolk protein 1 and 2 in the fall webworm, *Hyphantria cunea*, were detected in large amounts from the ovaries of 10-day old pupae and accumulated in the eggs.

We isolated and sequenced cDNA clones corresponding to the two yolk proteins. The cDNAs for YP1 (1.2 kb) and YP2 (1.1 kb) code for 290 residue proteins. The sequence identity between YP1 and YP2 was very high of 79.9%. Two *Hyphantria* YPs were most closely related to the follicle specific yolk protein 4 from the moths, *P. interpunctella* and *G. mellonella*, but not related to Vg sharing similarity with vertebrate lipase. Northern blot analysis showed YP1 and YP2 transcripts were present in only female fat body and at trace level in the ovary. YP1 and YP2 cDNAs began to express from 10-day-old pupae and increased to adult stage. This result suggests that *Hyphantria* YP1 and YP2 genes are expressed in sex-, tissue- and stage- specific way. We discussed the possibility of gene duplication and overlapping function for two very similar YPs in *H. cunea*.