

Molecular Cloning and Expression of a Gut-Specific Chitinase cDNA from the Mulberry Longicorn Beetle, *Apriona germari*

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A gut-specific chitinase cDNA was cloned from the mulberry longicorn beetle, *Aperiona germari*. The *A. germari* chitinase gene spans 2900 bp and consists of five introns and six exons coding for 390 amino acid residues. The *A. germari* chitinase possesses the chitinase family 18 active site signature. The deduced amino acid sequence of *A. germari* chitinase cDNA showed 57% identity to *Phaedon cochleariae* chitinase which lacks C-terminus domains but active site residues are conserved. Southern blot analysis of genomic DNA suggested the presence of *A. germari* chitinase gene as a single copy. Northern and Western blot analysis and enzyme activity assay showed the tissue-specific expression of the *A. germari* chitinase in the *A. germari* gut. The *A. germari* chitinase cDNA was expressed as a 46-kDa polypeptide in baculovirus-infected insect Sf9 cells and the recombinant *A. germari* chitinase showed activity in the chitinase enzyme assay using 0.1% glycol chitin as a substrate.