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Molecular cloning and characterization of the gene encoding chitinase from *Bombyx mandarina*

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Insects use chitinolytic enzyme to digest chitin in the exoskelton during the molting process. We have isolated and sequenced a chitinase-encoding cDNA from the silkworm, *Bombyx mandarina*, compared its sequenced with genes encoding chitinolytic enzymes from other sources. The insert DNA in the clone is 2,625 nucleotides long with an open reading frame of 1,695 nucleotides that encodes a protein of 565 amino acids with a molecular weight of 63.4 kDa. The 3′ -untranslated region of 889 nucleotides is AT-rich and contains two putative polyadenylation signals. The N-terminal sequence of the encoded protein contains numerous hydrophobic residues characteristic of a leader peptide. The amino acid alignment revealed that the endo-β-*N*-acetylglucosaminidase had 83% and 97% homology with *M. sexta* and *B. mori*, respectively. The deduced amino acid had two highly conserved region at the amino acid residues 97-111 and 139-148 that were related to the existing chitinase.