

**227 Expressed Sequence Tags(ESTs) and Molecular
Characterization of the Gene Encoding Serine Protease
Homologue from *Bombyx mandarina***

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We constructed an oligo-d(T) primed directional cDNA library from the *Bombyx mandarina* whole larvae. In an effort to isolate genes expressed in the *Bombyx mandarina*, 227 expressed sequence tags (ESTs) were generated by single-run partial sequencing from the cDNA library. Sequence analysis resulted that 107 clones (47.1%) were classified into known genes, 120 clones (52.9%) were novel transcript genes. Expression profile of the *Bombyx mandarina* whole larvae ESTs showed that the most abundant gene was found to be *Bombyx mori* (14.1%), and the next abundant genes were *Manduca sexta*(8.4%) and *Drosophila melanogaster* (6.6%). Among these clones, we have isolated serine protease homologous gene(BmSP) which was highly abundant in whole larvae ESTs from *B. mandarina*. Full length sequencing of the BmSP clone showed that it was 922 bp in cDNA length and has an open reading frame of 276 amino acids. Compared with amino acid sequences of other serine protease family members, BmSP was shown to contain histidine, aspartic acid and serine residues forming the catalytic center as well as cysteine residues contributing three disulphide bonds which were commonly found invertebrate serine proteases. mRNA expression analysis revealed that BmSP is highly and specifically expressed in only midgut tissue, suggesting BmSP gene is closely associated with the expression of digestive enzyme.