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Molecular Cloning and Characterization of Three *Plutella xylostella* Serpins Induced by Bacterial Infections; Serpin 1, 2 and 3

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Here, we report the cloning and characterization of serpin 1, 2 and 3 genes from late instar *Plutella xylostella* larvae that are immunized with Gram positive and negative bacteria. Insect serpins are well known to regulate proteinases involved in hemolymph coagulation, antimicrobial peptide synthesis and melanization of pathogen surfaces. *Plutella xylostella* serpin 1, 2 and 3 genes consist of 1546, 1239 and 1986 base pairs and each of them coded 395, 394 and 450 amino acids respectively. All of these genes have signal sequences and this fact will suggests that serpins are likely to be secreted into the hemolymph. Northern blotting shows that the expression levels of Serpin 1 and 3 after infection of *M. luteus* are drastically increased at the early and gradually decreased in the course of time. On the contrary, putative Serpin 2 is usually expressed before the infection but its expression level was dramatically decreased after the infection.