# Cloning and Expression of Two Protein Tyrosine Phosphatase Genes Encoded in *Cotesia plutellae* Bracovirus Genome

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A genome project has been launched and aims to sequence total genome of *Cotesia plutellae* bracovirus. On this process, several open reading frames (ORFs) have been identified. This study was intended to clone and express protein tyrosine phosphatase genes, PTP1 and PTP6. The ORFs of these two genes consist of 900 and 891 bp, respectively. PTP1 and PTP6 are genes of a group of genes that has been implicated as important regulatory components in cell growth, differentiation and malignant transformation by certain viruses. In this work,we studied the cloning and expression patterns of these genes in *Plutella xylostella,* a lepidopteran host of *C. plutellae.* A polymerase chain reaction (PCR) produced the corresponding products of PTP1/6. These PCR products were cloned and expressed using an expression vector pBAD-TOPO, and then over-expressed using an inducer, L-arabinose. Then the purified proteins were confirmed using Western blotting (immunoblotting using V5 antibody) and the apparent molecular weights of both proteins were about 40 kDa. Expression of PTP genes were analyzed in the parasitized *P. xylostella* by realtime RT-PCR, which indicated late expression pattern of both PTPs during parasitization. We are pursuing to elucidate their physiological function in the parasitized host insect.

**Key words**: *Cotesia plutellae,* polydnavirus, CpBV, protein tyrosine phosphatase, RT-PCR, cloning, expression, *Plutella xylostella*