

Cloning a Phospholipase A₂ from Hemocytes of *Spodoptera exigua* Infected with *Xenorhabdus nematophila*

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Phospholipase A₂ (PLA₂) is an enzyme catalyzing phospholipids at sn-2 position to produce a free fatty acid, mainly arachidonic acid. PLA₂ is implicated to express cellular immunity in insects. An entomopathogenic bacterium, *Xenorhabdus nematophila*, inhibits PLA₂ to induce host immunosuppression. A preliminary work using various PLA₂ antibodies indicates that hemocytes of *Spodoptera exigua* express an inducible PLA₂ in response to bacterial infection. The inducible PLA₂ reacted to secretory type of PLA₂ antibody. Based on known PLA₂ sequence of *Drosophila melanogaster*, we designed type IIIa-secretory PLA₂ degenerate primers. An RT-PCR (3'-RACE) 600 bp product and exhibited high homology with known PLA₂ sequence. Following 5'-RACE resulted in a complete cDNA sequence of 1151 bp size. This sequence contains amidation site, casein kinase II phosphorylation site, cAMP- and cGMP-dependent protein kinase phosphorylation site, N-glycosylation site, N-myristoylation site, protein kinase C phosphorylation site, and PLA₂ histidine active site. RT-PCRs showed that the hemocyte PLA₂ is specifically expressed in hemocytes and also that the PLA₂ is expressed in response to bacterial infection.