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The strategies to elucidate molecular mechanisms of relationship between host and parasite (*Plutella xylostella* and *Cotesia Plutellae*)

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Wasp parasitoids use a variety of methods to commandeer their insect hosts in order to create an environment that will support and promote their own development, usually to the detriment of the host insect. Parasitized insects typically undergo developmental arrest and die sometime after the parasitoid has become independent of its host. Parasitoids can deactivate their host's immune system and effect changes in host hormone titers and behavior. Often, host tissues or organs become refractory to stimulation by tropic hormones.

Here we are interested in the relationship between host, *Plutella xylostella* and parasite, *Cotesia plutellae*. As a first step to understand the molecular mechanism of these relationships, we decided to collect immune related genes of *P. xylostella* as much as possible. First of all, we constructed two subtractive cDNA libraries from immunized *P. xylostella* with Gram positive and negative bacteria. These libraries include various genes that specially expressed in the immunized hosts. In the same manner, two cDNA libraries were constructed according to bacteria to obtain full-length cDNA of fragmented cDNA, which achieved from subtractive libraries. From different two sorts of libraries, the collected genes by Expressed sequence tags (ESTs) and subtractive cDNA hybridization of artificially immunized hosts shows that some of the genes are similar to immune related genes of *Drosophila melanogaster* and other species. We hoped that the interesting genes would be precisely defined by supporting of well-established immune researches in other species and then would be potentially useful in developing new, environmentally safe insect control agents.