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Analysis of genes encoding antibacterial peptides from *Artogeia rapae*
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Antibacterial peptides play an important role in immune defense mechanism in insects. The cabbage butterfly, *Artogeia rapae* larvae were found to produce antibacterial peptides against the microbial challenge. Most effective antibacterial activity is induced 2 days after the challenge of *E. coli* K12 into the thorax. Total RNA from the fatbody of *Artogeia rapae* were isolated after induction. To find out genes encoding antibacterial peptide, three degenerated primers were designed on the basis of known lepidopteran cecropin genes, and the DNA fragments amplified by Reverse Transcriptase-PCR were sequenced after subcloning into the T-vector.

In order to obtain the complete cDNA sequence, the complementary analysis of cDNA library and marathon PCR is now being applied.

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cDNA Sequence Encoding *Artogeia rapae* Lysozyme

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Lysozyme is one of the antibacterial peptides that are produced by the cabbage butterfly, *Artogeia rapae*. We have previously purified two lysozymes, by heat treatment, cation exchange and reversed-phase chromatography from the haemolymph of immunized last instar larvae. Total RNA were isolated from the fat body of challenged with *E. coli* K12. We obtained the partial DNA sequence encoding the lysozyme from analysis of the DNA fragment which were amplified by use of Reverse Transcriptase-PCR and subcloned into the T-vector. To find out genes encoding lysozymes, three different kinds of the degenerated primers were used in this study two of them were designed on the basis of known cDNA of the other moths, the remaining was designed on the rich regions in amino acids that are specified by only one or two codons from amino acid sequence of *A. rapae* lysozyme.