

Oral (Keynote, Sericulture, Insect Biotechnology, Young Scholar), Poster (Sericulture, Insect Biotechnology)  
Antibacterial Activity of Peptides Synthesized Based on the *Bombus ignitus*  
abaecin, A Novel Proline-Rich Antimicrobial Peptide

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Abaecin is a largest member of the Abaecin is a largest member of the proline-rich antimicrobial peptide family found only in the hymenopterans. A cDNA of abaecin was previously isolated and cloned from *Bombus ignitus*: the mature peptide of *Bombus ignitus* abaecin was composed of 39 amino acid residues. In the present study, we determined the antibacterial effect of *B. ignitus* abaecin synthesized at several lengths against several bacteria by radial diffusion assay. The 37-mer peptide (Ab37) inhibited the growth of Gram-negative bacteria *Escherichia coli* ML-35, *Pseudomonas aeruginosa* and *Salmonella typhimurium*, but showed limited inhibitory activity toward Gram-positive bacteria, except for *Micrococcus luteus*. The truncated 26-mer peptide (Ab26), which was synthesized after truncating some amino acid residues at both N-terminus and C-terminus from the Ab37 peptide, still showed equivalent antibacterial activity to the Ab37. On the other hand, several further truncated peptides exhibited lower activity than did Ab37 peptide

**Key words:** Abaecin, Antimicrobial peptide, *Bombus ignitus*, Antibacterial activity