

E101 Purification and Characterization of Two Additional Antibacterial Peptides from *Agrius convolvuli*

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In addition to cecropins D1 and D2, another two types of antibacterial peptides were identified from the last instar larval hemolymph of *Agrius convolvuli* by overlay assay. These peptides were purified by gel filtration, continuous electrophoretic elution and reversed phase FPLC. The hemolymph proteins solubilized in acetic acid were prepared as starting material to purify the cationic antibacterial peptides. It was proved as a useful procedure for easy and speedy purification of cationic peptides from insect. These peptides have similar molecular mass to *Agrius* cecropins D that were already characterized, and also have the antibacterial potency against gram-positive and gram-negative bacteria. These consist of more cationic amino acids than cecropin D in amino acid composition. The N terminal sequences of both peptides were determined. Our recent studies to isolate and characterize several antibacterial peptides from *Agrius convolvuli* demonstrate the role of cationic peptides as a powerful weapons in host defense mechanism of insect.

E102 Antibacterial Activities of Cecropins D1 and D2 from *Agrius convolvuli*

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Two types of cecropin D, named cecropins D1 and D2, were isolated and purified from the last instar larval hemolymph of *Agrius convolvuli* infected with *E. coli*. Since cecropin D was originally found in the pupal hemolymph of *Hyalophora cecropia*, additional members of cecropin D were identified and characterized from *Antheraea pernyi* and *Manduca sexta*. The N-terminal sequences of *Agrius convolvuli* D1 and D2 so far determined are highly similar to cecropin D from other insects. These *Agrius* cecropin D, however, differ from others in such basic features as the molecular mass and amino acid composition, suggesting the remaining C-terminal part is different from original cecropin D. The antibacterial activities of *Agrius* cecropins D1 and D2 were tested through the ultrasensitive radial diffusion assay. Both peptides were broadly effective against gram positive as well as gram negative bacteria. The synergic effects of peptides for antibacterial activities were investigated to elucidate the action mechanism of *Agrius* cecropins D against bacteria, which might be helpful for a number of researches to design the ideal peptide antibiotics related with the structure of cecropin.