E117 Agrins: Cecropin D-like antimicrobial peptides from hemolymph of the hornworm, *Agrius convoluvuli*

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Several antimicrobial proteins were identified in the larval hemolymph of *Agrius convoluvuli* immunized with *E. coli* by overlay assay(Lehrer *et al.*, 1991). We isolated and characterized two antimicrobial peptides, which are named as Agrin 1 and 2. In order to purify agrins, hemolyph proteins were extracted in 10% acetic acid, subjected to sephadex G-50 gel permeation chromatography and reverse phase FPLC. The molecular mass of agrin 1 and 2 were determined as 3879.39 and 3839.27, respectively, by MALDI mass spectrometry. By radial diffussion assay(Lehrer *et al.*, 1991), it is confirmed that agrins have an antimicrobial activity against gram(-) and gram(+) bacteria. The amino acid sequences of agrins are highly homologous as below. Agrins showed considerable structural homology to cecropin D, a well characterized antimicrobial peptide from the hemolymph of *Hyalophora cecropia*. We believe that this work will contribute to designing the novel and effective peptide antibiotics related with cecropin D.

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                5         10        15        20        25
Agrin 1 : WNPFK ELERA GQRIR DSIIS AAPXS AT---  -----
Agrin 2 : WNPFK ELERA GQRVR DAIIS AAPXV XTVG-  -----
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(X = unidentified residue; bold letter = different residue)

E118 Qualitative Changes, Amino Acid Compositions of Cuticular Proteins during Pupariation of Blowfly, *Lucilia illustris*.

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The cuticular proteins of blowfly, *Lucilia illustris* were extracted from third instar larvae, prepupae, white pupae and white pupae after 6hr, 12hr, 18hr, 24hr, 30hr. The cuticular proteins were characterized by SDS-PAGE, IEF and amino acid analysis and revealed immunological relation between larval cuticle and pupal cuticle, cuticular proteins and hemolymph, fat body proteins. Most cuticular proteins existed under 27kDa and had low pI range(pI 4.5~5.1). The sclerotized cuticle had a dominant 9kDa protein and relatively high pI values(pI 4.95, 5.0). Western blot analysis showed that larval and pupal cuticular proteins were immunologically related and that hemolymph, fat body proteins also had some relation to cuticular proteins. The anti-9kDa protein antibody showed no cross-reactivity with larval cuticle protiens. The amino acid composition of the cuticular proteins showed high contents of asp, glu and his and no detectable cys and met. Especially, the cuticular proteins from 24hr, 30hr pupa had much higher contents of ala and arg.