E113 Novel Antimicrobial Peptides from the Hemocytes of the Korean Ascidian, *Halocynthia aurantium*

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In the work for searching the origin of defense factors in animal kingdom, protochordate has been regarded as a critical one to connect between vertebrate and invertebrate. Moreover, as it is known that animals belongs to chordata contain copious and potent antimicrobial agents, the purification and characterization of antimicrobial peptides from hemocytes of Korean ascidian, *H. aurantium* will be useful to elucidate an evolutionary systematic of antimicrobial peptides. This work may also provide a model to design a novel peptide antibiotic. In the meantime, we have found a variety of antimicrobial peptides in hemocytes of *H. aurantium*. Most of them have small molecular masses ($\leq$4kDa) and shows antimicrobial activities against Gram (+) and Gram (-) bacteria as well as fungus (*Candida albicans*), suggesting they can be an effective peptide antibiotics. In this report, we demonstrates a series of procedures to isolate antimicrobial peptides from hemocytes of *H. aurantium*. And we introduce the physicochemical characteristics and antimicrobial properties of one family.

E114 Three Antimicrobial Peptides from the Immunized Hemolymph of the Sphingid Moth, *Agrius convolvuli*

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It is now fully appreciated insects, which are particularly resistant to microbial infections, build up host defense that shares some fundamental mechanism of innate immune response in vertebrates. Among a number of defense factors in insects, antibacterial peptides such as cecropins have been known to function as most important humoral factors against invading microbes. To date, over hundred kinds of antimicrobial peptides have been found in a variety of insects. Recently, we purified and characterized the two types of cecropins D that present as major antibacterial peptides in the hemolymph of *Agrius convolvuli* (Lee, et al., 1999). In addition, another three members of antimicrobial peptides were found in larval hemolymph of the immunized *A. convolvuli*. It was estimated that two of them have similar molecular masses of 3-4 kDa on SDS-PAGE gel. Both peptides also migrated as a single band on acid-urea PAGE and were eluted from reversed-phase HPLC at similar retention time. It is probable that they are members in the same family of antibacterial peptides. In contrast, another one has relatively high molecular mass (over 6 kDa). The purified three peptides showed antibacterial activities against Gram (+) and Gram (-) bacteria. In this work, we present the purification and characterization of three peptides from *A. convolvuli*.