**B11** 

## Molecular Cloning of the Chemosensory Protein Homologue Gene from the Mole Cricket, *Gryllotalpa*orientalis

Iksoo Kim<sup>1</sup>, Kwang-Sik Lee<sup>2</sup>, Byung-Rae Jin<sup>2</sup>, Eun-Sun Kim<sup>1</sup>, Jin-Won Kim<sup>1</sup>, Young Shin Lee<sup>1</sup>, Hung-Dae Sohn<sup>2</sup>, Kang-Sun Ryu<sup>1</sup>

Department of Sericulture and Entomology, NIAST, RDA, Suwon 441-100, Korea and <sup>2</sup>College of Natural Resources and Life Science, Dong-A University, Pusan 604-714, Korea

Insects perceive the chemical cues of their environment by a few families of sensory proteins. One such family of insects is chemosensory proteins (CSPs), which have no homology to the vertebrate family of proteins bearing the same name and inferred function. In this study, a cDNA encoding the CSP homologue was isolated from the cDNA library of the mole cricket, Gryllotalpa orientalis. Sequence analysis of a 535-bp cDNA clone showed the gene to contain an open reading frame of 128 amino acid residues consisted of 384-bp. The deduced amino acid sequence of the mole cricket CSP homologue was highly similar to migratory locust, tobacco hornworm, American cockroach, fruit fly, mosquito and so on, with the highest sequence identity to migratory locust, Locusta migratoria (75.4%). Phylogenetic analysis also confirmed a close relationship of the G. orientalis CSP with L. migratoria, and a divergent relationship among insect CSPs, forming a weak cluster among most species. Hydropathy analysis of a few insect species including the cricket mole suggests that N-terminal residue in the mature protein starts at position 20 (proline). Alignment of the CSP with that of the other insects confirmed the presence of the four conserved cysteines, a consistent hallmark of CSP known so far.