C111 Studies on the Amebae-Specific α-Tubulin Gene of *Naegleria gruberi*

Sung Lan Chung, Yun Sun Choi*, and Joo Hun Lee
Department of Biology, Yonsei University

The genomic library of *Naegleria gruberi* was screened with the cDNA encoding a differentiation-specific α-tubulin, α13, of this organism and the resulting genomic clone obtained was designated α3. The nucleotide sequences of α3 and α13 were very similar to the universally conserved regions among α-tubulins, but the overall homology between the coding region was only 66.5% in the nucleic acid level and 60.7% in the amino acid level, moreover the 5′ and 3′ untranslated region differed greatly. In addition, among these two genes cross-hybridization did not occur and genomic Southern blot analysis showed different patterns. Nothern blot analysis and *in situ* hybridization method showed that α3 was expressed in the actively dividing amebae stage but rapidly diappeared as differentiation started, in contrast to the differentiation-specific α13, and was localized adjacent to the nucleus in a concentrated form. These results suggest that two different α -tubulin genes of *N. gruberi* are differentially expressed, that α3 gene encodes a novel α -tubulin that might constitute the spindle fiber during cell division in the amebae stage, and that the mRNAs of tubulins constituting specific microtubular structures are localized near to these sites, possibly resulting in the targeting of the tubulin product and furthermore the facilitation of the efficient assembly of the resulting microtubular structures.

C201 Ultrastructure of Glandular Trichomes of *Pelargonium peltatum*

Bum-Suk Cho* and Eun-Soo Kim
Department of Biology, Kon-Kuk University

The ultrastructure of glandular trichomes in *Pelargonium peltatum* has been studied with a light microscope, a transmission and a scanning electron microscopy. Two types of glands, peltate and capitate gland, are distinguished with their shape and size of the whole glands. Both glands are extremely abundant in the leaf veins and petioles. The former which has a length of 300㎛ are more appeared in abaxial surface, however, the latter which has a length of 50㎛ are more existed in adaxial surface. These glandular trichomes are consisted of one secretory cell, three stalk cells, and one basal cell. The secretory cell contain a large amount of smooth endoplasmic reticulum. And it was also observed much plastids, vacuoles, Golgi apparatus, and mitochondria. And, high electron-dense deposits are frequently present in vacuoles of a secretory cell. It seems to be phenolic compounds which is thought a major secretory precursor.