E203 Growth and solute pattern of three chenopodiaceous plants under saline condition with varying nutrient supply

Kim, Jin A, Yeon-Sik Choo[1] and Seung-Dal Song
Department of Biology, Kyungpook National University
Department of Biology, Dong-Eui University[1]

To elucidate the growth and solute pattern of chenopodiaceous plants under saline condition with varying nutrient supply, we selected halophytic and nonhalophytic species (*Salicornia herbacea, Suaeda japonica, Beta vulgaris* cv. *cicla*) and treated salt (0, 50, 100, 200, 400 mM NaCl) with different nutrient supply (full, 1/5, 1/10 strength). Plant species investigated showed growth reduction with decreasing nutritional strength, but did not show remarkable interspecific differences. Compared to *Suaeda* and *Beta*, stem-succulent *Salicornia* showed rather increased growth upto 200 mM NaCl. With increasing salinity plants accumulated excess Na^+ and Cl^-, resulting from the remarkable uptake inhibition of other inorganic ions (esp. K^+) except Ca^{2+}. Total organic nitrogen contents reduced with increasing nutritional strength and salinity, but conductivity and osmolality increased remarkably. In conclusion, three plant species indicated similar growth responses and solute pattern between species independently of salt and nutrient treatments, showing general physiological characteristics of family Chenopodiaceae (high storage capacity for inorganic ions) which enable chenopodiaceous plants to actively adapt on saline habitats.

E204 Intracelluar Localization of The Early C6-Oxidation Pathway for Brassinosteroids Biosynthesis in Cultured Cells of *Phaselus vulgaris*

Tae-Wuk Kim*, Kwang-Seok Han, Woo-Sook Chung,
Seung-Hyun Park and Seong-Ki Kim
Department of Life Science, Chung-Ang University

In *Phseolus vulgaris*, the presence of members in the early C6-oxidation pathway for brassinosteroids(BRs) biosynthesis has been demonstrated, suggesting that BRs in *P. vulgaris* are synthesized by the early C6-oxidation pathway. To confirm that and determine intracellular localization of the pathway, conversion from teasterone(TE) to brassinolide(BL) via 3-dehydroteasterone(3-DHT), typhasterol(TY), castasterone(CS) were examined in this study. A sequence of the early C6-oxidation pathway, TE → 3-DHT → TY → CS → BL are established by feeding experiments using deuterium labelled([$^2H_6$]) substrates. In the pathway, TE → 3-DHT → TY was catalyzed by the cytosolic enzymes, whereas TY → CS → BL was by microsomal enzymes. These indicate that TY is biosynthesized in the cytosol of *P. vulgaris* cells from TE via 3-DHT, diffused into E.R., and converted into BL via CS on the surface of E.R. The conversion of BL to 26-nor BL was also determined by an enzymatic reaction using the cytosolic enzyme, indicating that BL, after detached from the E.R. membrane, is catalyzed into 26-norBL in the cytosol of *P. vulgaris* cells.