

E218 Ecophysiological characteristics of the coastal plants in Korea
-1. K/Na ratio

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As an attempt to examine the ecophysiological characteristics of various coastal plants including salt-marsh plants, we collected 43 species from several habitats and analyzed their K/Na ratios in leaves. K/Na ratio of sand dune plants represented approximately the values of 40 indifferently from plant species, especially *Bidens tripartita*, *Oenothera lamarckiana*, *Trigonotis peduncularis* showed high values of above 100. Plants on rocky habitats showed rather high K/Na ratios. However, plants from salt marsh showed significant difference between monocots and dicot. *Phragmites communis* - representative monocot in salt marsh - represented a high value of 16, but dicots which are composed of mainly Chenopodiaceae showed very low K/Na ratios (below 1). In conclusion, it is suggested that high K/Na ratios of sand dune plants are due to the low level of soil salt concentration, and high values in leaves of monocots in spite of high salt contents on salt marsh are resulted from their effective salt exclusion mechanism.

E219 Mutational Analysis of *Arabidopsis thaliana* S-Adenosylmethionine Decarboxylase

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Site-specific mutagenesis was performed on the *Arabidopsis thaliana* S-Adenosylmethionine Decarboxylase (EC 4.1.1.50) to introduce mutations at conserved cysteine residues (Cys50, Cys83, and Cys230) and lysine 81 residue, which were proved to be involved in enzymatic activity by chemical modification. The AdoMetDC mutants (K81A, C83A) retained up to 60 % and 10 % of wild type activity, respectively, demonstrating that lysyl and sulfhydryl groups are required for catalytic activity. Whereas, changing Cys50 and Cys230 to alanine had minimal effect on catalytic activity. Since Cys50 is the only cysteine residue in the smaller subunit, this indicates that disulfide-bond formation between the two subunits cannot be necessary for catalytic activity but unlike human AdoMetDC, stability of Cys50, Cys230 mutants were reduced significantly, suggesting a structural significance for cysteines. Which is further supported by circular dichroism spectrum.