E226 Characterization of δ-Aminolevulinic Acid Dehydratase from *Anabaena cylindrica*

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A δ-aminolevulinic acid dehydratase (ALAD, E.C. 4.2.1.24) was purified and characterized from *Anabaena cylindrica* (IAM-1). The enzyme was purified (ca. 150 fold) by ammonium sulfate precipitation, ion exchange chromatography, gel filtration and mono Q FPLC chromatography. The native size of ALAD was approximately 530 kDa as judged by gel filtration and native polyacrylamide gel electrophoresis. The protein was found to be composed with identical subunits of molecular weight of 54 kDa on SDS-PAGE. Enzyme activity required magnesium ion and sulphydryl reagent. The Km value for δ-aminolevulinic acid was 0.91 mM in the presence of 10 mM $MgCl_2$ and 10 mM β-mercaptoethanol. The activity was reduced significantly by the dialysis against buffer containing EDTA or by the treatment of chelex cation exchanger and it was recovered with the addition of magnesium ion. By the addition of zinc ion to the chelex treated ALAD, enzyme activity was inhibited by 90%. The inhibition, however, was partially overcome by 10 mM $MgCl_2$.

E227 Inrolling of Petals during Senescence of Carnation(*Dianthus caryophyllus* L. cv. Shinkibo)

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The inward rolling of petals, one of typical symptoms observed in the process of climacteric corolla senescence, was mimicked in the lower part of petal segments of cut carnation cv. Shinkibo cultured in south-west province of Korea by exogenous ethylene. In petal segments, climacteric ethylene burst just occurred at the inrolling stage. Therefore, these petal segments may be an excellent model system to examine the corolla senescence. According to the analysis of the growth kinetics, an asymmetry in the lengths of both adaxial and abaxial sides of petal segments appeared to the direct cause of the rolling inwardly. While the length of the abaxial side of petals increased, the ultimate length of the adaxial side is shrunk by ethylene. The rate of expansion/shrink of petal's cells and the shape of each phase varied with some chemicals affected on the rolling of petal segments such as n-octanoic acid, polyamines and an inhibitor of Ca^{2+}-channel blocker.