E236 Characterization of Transgenic Tobacco Plants Expressing Ethylene and Polyamine Biosynthetic Genes in Sense and Antisense

Su Jin Wi*, Ky Young Park
Department of Biology, Sunchon National University

In order to establish a correlation between ethylene and polyamine biosynthesis, which use same precursor, S-adenosylmethionine(SAM), we produced the transgenic tobacco plants, which expressed the sense or antisense of carnation SAM decarboxylase(SAMDC), 1-aminocyclopropane-1-carboxylic acid(ACC) synthase and ACC oxidase gene under the control of the 35s CaMV promoter using *Agrobacterium*-mediated transformation. Insertions of these genes (ACC synthase, ACC oxidase and SAMDC) in transformants were certified using PCR and genomic southern blot analysis. We got several transgenic lines from each sense or antisense construct. The phenotypic changes in transgenic tobacco expressing antisense SAMDC gene were characterized by short internode, thin stems and small leaves. However, the phenotypes of other transformants with different constructs did not changed much. In transgenic tobacco expressing ACC synthase and ACC oxidase in antisense or sense showed no significant difference in ethylene biosynthesis after treatment with 2,4-D. In transgenic tobacco leaves with sense expression of SAMDC gene, polyamine content changed.

E237 Effects of Benomyl on the Activation of Rubisco and Rubisco Activase in Soybean

Mi Jung Oh*, and Kwang Soo Roh
Department of Biology, Keimyung University

The activation of rubisco involves formation of a carbamate which is binding of an activator CO_2 to the ε-amino group of lys-201 within the active site on the large subunit, followed by addition of Mg^{2+}. Rubisco activity is regulated by the rubisco activase in the presence of ATP and RuBP. In the first experiment, we studied effects of benomyl on rubisco in soybean. However, it is unclear that effects of benomyl on rubisco was caused by activity itself and/or content of rubisco activase. To pursue the answer to this question, in the second experiment, these effects were investigated by analysis the polypeptide profiles of SDS-PAGE, by measuring the activity and content of rubisco activase employing an ATP dependent hydrolysis assay and spectrophotometric assay at 559 nm, respectively. In the last experiment, we determined the chlorophyll contents at various concentrations after the treatment of benomyl using a spectrophotometer at 664 nm and 647 nm.