E230 Effect of Plant Hormons on the Invertase Acitivity in the Senescing Leaves of *Phaselous radiatus*

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Effect of plant hormones on the leaf senescence of mung bean (*Phaseolus radiatus*) was investigated by measuring the changes of reducing sugar contents and invertase isozyme activities in detached leaves treated with NAA, GA_3 or BA. During dark-induced senescence, reducing sugar contents in the detached leaves increased temporarily at 4 d, thereafter decreased rapidly and reached minimum values within 7-14 d. The pattern of soluble acid invertase activity in the senescing leaves kept in the dark was similar to that of reducing sugar accumulation, whereas the activities of alkaline and extracellular invertases were not significantly changed during leaf senescence. Exogenous NAA application had little or no effect in the increase of soluble acid invertase activity during dark-induced senescence compared to the control. However, exogenous applications of GA_3 and BA led to the increase of soluble acid invertase in the senescing leaves. Particularly, BA application was very effective in enhancing the activity of soluble acid invertase as well as in delaying chlorophyll breakdown during dark-induced senescence.

E231 Roles of Lipoxygenase(LOX) and Ascorbate Peroxidase(AsPOX) in Senescence of Cultured Soybean Cells.

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In cultured soybean cells, transient burst of ethylene that accelerates senescence occurred at the pre-stationary phase. However, the browning of cells, a typical senescence symptom of cultured cells appeared later at the stationary phase. Interestingly, both LOX that promoted reactive oxygen species (ROS) including H_2O_2 and AsPOX that eliminates excessive H_2O_2 were induced sequentially during the early stage of the stationary phase by promoted ethylene. Therefore, we intensify to examine whether LOX and/or AsPOX could be (a) regulatory factor(s) of senescence in cultured cells. Alternations in amount of H_2O_2 and degree of lipid peroxidation according to the growth phase and the suppression of enzyme(s) are determined. Also, effects of H_2O_2 variation on the activities and the steady state levels of transcripts of enzymes are determined.