BR stimulated the activities of ACO and ACS as it increased the ethylene production in primary roots of maize. Furthermore, ACC contents in the root segment were increased by the treatment of BR. These data conformed that BR might act on the conversion step of ACC to ethylene.

E226 Characterization of the Flavonoids in the Callus Derived from the Excarp of Grape

Hye-Jeong Park[1*], Hye-Mi Park[1], Chae Eun Lim[2], Chong-Wook Park[2] and Hyeon-Cheol Cha[1]
[1]Department of Biology, Dankook University;
[2]Department of Biology, Seoul National University

Grape (*Vitis labruscana* cv. Kyoho) fruits harvested in August were cultured in B5 medium with 0.1 mg/L 2.4-D and 0.2 mg/L BAP to induce calli from the skins. By subculturing the calli, we could isolate anthocyanins-producing callus. For identification of the flavonoids in this callus, we performed 2-D TLC, HPLC and UV spectral analyses. One flavonoid compound, isolated from exocarp-derived callus, was characterized as a glycosylated derivative of the flavonol quercetin.

E227 Effect of Malformins on the Conversion of ACC to Ethylene in Mung Bean Hypocotyl Segments

Won Gyeong An[1], Soo Bong Park[1], A-Young Cho[2], Kun-Woo Kim[3], Soon Young Kim[2] and Seung-Eun Oh[1*]
Department of Biological Sciences, Konkuk University[1]; Department of Biology, Andong National University[2]; Major of Bioresource and Environment, Andong National University[3]

Malformin A1 (*cyclo*-D-Cys-D-Cys-L-Val-D-Leu-L-Ile), a fungal cyclic pentapeptide toxin from *Aspergillus niger*, was purified from the malformin complexes and used to reveal its physiological roles in plants. Using hypocotyl segments of 2.5 day-old mung bean seedlings, we examined how affects the biosynthesis of ethylene, particularly in the final catalytic step from ACC (1-aminocyclopropane- 1-carboxylic acid) to ethylene. Malformin A1 stimulated the ACC-induced ethylene production at 10^{-7} M, whereas suppressed it at 10^{-6} M and 10^{-5} M. After the malformin A1 treatment, both *in vivo* ACC-oxidase (ACO) activity and *ACO1* transcript level were altered accordingly with the change of the ACC-induced ethylene production. Recently, we have purifed malformin A2 (*cyclo*-D-Cys-D-Cys-L-Val-D-Leu-L-Val) and compared its biological activity with that of malformin A1.

E228 Catalytic and Immunological Comparison of Two Isoperoxidases from Scented-Geranium Callus.

Byoung-Sul Min*, Jae-Hwan Choi and Mi-Young Lee
Department of Life Science, College of Natural Sciences, Soonchunhyang University

A strong cationic isoperoxidase, designated C3, and a week anionic isoperoxidase, designated A1, from scented-geranium callus were purified by ion exchange chromatography and gel filtration to apparent homogeneity. C3 and A1 isoperoxidase were glycoproteins having molecular weights of approximately 58 kDa and 42.5 kDa as determined by SDS-PAGE, respectively. The native molecular weights of C3 and A1 isoperoxidase estimated by Sephadex G-150 gel filtration were 58 kDa and 44 kDa, respectively. Moreover, the pI values of C3 and A1 were 9.1 and 4.0, respectively. Catalytic comparisons of these two isoperoxidases in terms of Km values against various substrates were performed. Immunological studies involving Ouchterlony double diffusion experiments will also be presented in this investigation.