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Metabolism of Castasterone and Brassinolide in Mung Bean Explant

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Differnet metabolism of brassinolide and its biosynthetic precusor castasterone in explants of mung bean (*Vigina radiata*) seedlings is described. Castasterone was not converted to brassinolide, but to unknown water-soluble metabolites in which major components to be non-glycosidic and minor ones to be glycisidic. It is likely that castasterone is biologically active in its own right without conversion to brassinolide. In contrast, brassinolide was largely converted to 23-*O*-β-glucopyranoside. It seeds that 23-*O*-glucosylation is important in deactivation of brassinosteroids in mung bean.

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Control of the Expression of Genes for ACC Synthase and ACC Oxidase by Methyljasmonate in Mungbean(*Vigna radiata* L.)

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We previously reported that auxin-induced ethylene production in mungbean(*Vigna radiata* L.) hypocotyls was strongly inhibited by treatment of the tissue with methyljasmonate(met-JA). Ethylene biosynthesis in higher plants is regulated by two key enzymes, ACC synthase and ACC oxidase, respectively. In the presence of met-JA, both auxin-induced accumulation of ACC and ACC-based ethylene production were supressed, indicating that the compound might act on the steps both preceding, as well as following, ACC accumulation. In order to elucidate the action site of met-JA, we investigated the effect of met-JA on the expression of genes for ACC synthase and ACC oxidase, respectively, by RNA gel blot analyses. Two cDNA clones for ACC synthase, pVR-ACS1 and pVR-ACS6, and one for ACC oxidase, pVR-ACO1 were used as probes. The transcript level of VR-ACS6 was greatly increased by IAA treatment, but in the presence of met-JA, the IAA-induced expression of VR-ACS6 was supressed within 4 hrs. On the contrary, met-JA treatment resulted in the accumulation of transcript of VR-ACS1, whose induction of expression was not auxin specific. Expression of VR-ACO1 was also supressed by met-JA either in the presence or absence of IAA. The differential effect of methyljasmonate on the expression of the two genes and underlying mechanisms for the inhibition of auxin-induced ethylene production will be discussed.