

**Evidence for 6-Deoxocastasterone Oxidase as a
Cytochrome P450 in *Phaseolus vulgaris*.**Tae-Wuk Kim^{1*}, Se-Hwan Joo¹, Seong-Ki Kim¹¹Dept. of Life Science, Chung-Ang University, Seoul

The classical plant Cytochrome P450s (Cyt P450) are integral membrane proteins in the membrane of endoplasmic reticulum that require molecular oxygen, NADPH and NADPH-Cyt P450 reductase for the activity. They are inhibited by CO gas and the inhibition by CO is recovered by blue light. Microsomal enzyme solution prepared from *P. vulgaris* successfully catalyzed a conversion of 6 deoxocastasterone (6-deoxoCS) to castasterone (CS). When O₂ or NADPH was removed from a standard enzyme assay mixture, the enzyme activity was remarkably decreased, indicating that the enzyme is NADPH- and O₂-dependent monooxygenase. Treatment of CO, a specific Cyt P450 inhibitor, strongly inhibited 6-deoxoCS oxidase activity and the inhibition by CO was reversed by illumination of blue light in the presence of O₂. Commercial Cyt P450 inhibitors (Cyt c, SKF 525A, 1-aminobenzotriazole and ketoconazole) also inhibited the enzyme activity. These results strongly support that 6-deoxoCS oxidase is a member of Cyt P450s family. In the presentation, other Cyt P450s mediated reactions involved in BRs biosynthetic pathway will be also discussed.

Keywords: Brassinosteroids, 6-Deoxocastasterone oxidase, Cytochrome P450 monooxygenase, *Phaseolus vulgaris*