

Transcriptional profiling and benzyloquinoline Alkaloids Production of CYP82B1 in *Eschscholtzia californica*

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The California Poppy (*Eschscholtzia californica*) is an ancient medicinal plant capable of producing several benzyloquinoline alkaloids of pharmaceutical importance, including the antibiotic sanguinarine and chelerythrine, protein kinase C inhibitor. Benzyloquinoline alkaloids biosynthesis begins with the conversion of L-tyrosine to dopamine and comprises several biosynthetic steps to sanguinarine. The gene of (S)-N-methylcoclaurine-3'-hydroxylase (CYP82B1; Huang and Kutchan, 2000) involved in benzyloquinoline alkaloid biosynthesis has been isolated from the California Poppy. We constructed the probe of CYP82B1 by PCR and studied CYP80B1 gene transcription level with elicitation. We also investigated several metabolites production level after biotic elicitation by HPLC analysis in our suspended cells. It gave us the relationship between transcription level and metabolite production level, which can be expected to offer the critical information of the bottleneck in sanguinarine production pathway. Our data will provide insight into the complex regulation of benzyloquinoline alkaloids biosynthesis.