Abstract

Plant of Papaveraceae family due to the valueable and consumed alkaloids production, including morphine, codeine, Tebaine, Noskapine, Papaverine and Sanguinarine have particular commercial importance in pharmaceutical industries. L - tyrosine decarboxylase (TYDC) gene is starting point in pathway morphine group alkaloids in opium poppy and catalysis a reaction that resulted production Tyramine from tyrosine, and after 17 enzymatic stage at least, banzene ring changes into codeine and morphine. The purpose of this study is overexpression of $TYDC_2$ gene in accumulation of Benzilizoquinoline alkaloids and in the following increasing synthesis of morphine group alkaloids. For achieve to this target PBI121-TK recombinant constract was built with TYDC containing Kozak sequence in region of Gus in pBI121 plasmid under the CaMV35S promotor and Nos terminator. the gene cloning results was confirmed by using different methods, molecular enzymatic digestion, PCR metod and histochimical Gus test . HPLC results of transgenic plant with agroinfiltration metod showd that the amount of alkaloids in this plants were significantly increased than nontransgenic plants.

Key words: Benzilizoquinoline Alkaloides, Tyrosine decarboxylase (TYDC), Gene Overexpression, *Papaver somniferum,* Agroinfiltration

University of Zabol
Faculty of Agriculture
Department of Agronomy and plant breeding

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Influence of TYDC Overexpression for enhancing of pharmaceutical Alkaloides in opium poppy (Papaver somniferum L.)

Supervisors:
Dr. M. Solouki
Dr. M. Omidi

Advisers:
MSc. N. Mahdinegad
Dr. H. Alizadeh

By:
F. Koohzadi

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