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Література:

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**AGROBACTERIUM-MEDIATED TRANSFORMATION
OF *PETUNIA HYBRIDA* WITH *THAUMATIN II* GENE
AS A MODEL FOR INVESTIGATION
OF PLEIOTROPIC EFFECTS OF THE GENE**

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Thaumatococcus II is a super sweet protein derived from the West African plant *Thaumatococcus daniellii* Benth. This protein have been attracted human attention as a low-calorie sweetener and flavor modifier [1]. The

protein belongs to a family of PR (pathogenesis-related) proteins. Most of the members of this family are involved in plant pathogen defense. Recent investigations showed pleiotropic function of this gene [2]. Plants transformed with the heterologous *taumatin* gene demonstrated increased resistance to some phytopathogenic fungi [3]. Damage caused by fungal diseases significantly reduces commercial value of ornamental plants and demands on the wide application of fungicides. Production of genetically modified ornamental plants with increased resistance to phytopathogenic fungi can be an alternative to artificial plant protection chemicals.

Transgenic plants of petunia were obtained by *Agrobacterium*-mediated transformation. *Agrobacterium tumefaciens* strain GV3101 with plasmid vector pNMD46732 containing heterologous *thaumatin* under the control of rice amylase apoplast targeting signal. Gene *bar* (phosphinotricin-N-acetyltransferase) was used for selection of transgenic plants. Transformation of leaf disks resulted in regeneration of herbicide-resistant plants. The influence of time of co-culture with *Agrobacterium tumefaciens*, conditions of regeneration and selection on the efficiency of *Petunia hybrida* transformation were investigated. Factors such as co-culture period, content of different plant growth regulators in cultivation media and different concentrations of selective agent (glufosinate ammonium) were validated. The PCR analysis confirmed the *taumatin II* gene integration into the petunia genome. T0 plants were transferred to soil and grown to the maturity to obtain T1 seeds. Microbiological tests revealed higher resistance of leaves from transgenic lines to phytopathogenic fungi *Alternaria alternata* and *Botrytis cynerea*. compared to the control thaumatin free plants.

References:

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