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Direct organogenesis and transformation of sour orange (*Citrus aurantium*) using citrus tristeza virus (CTV) coat protein coding gene

Banafsheh Fattah[1], Mohammad Mahdi Sohani[*1], Abdollah Hatamzadeh[1], Alireza Afsharifar[2], Behrooz Goleyn[3], Mohammad Hossein Rezadoost[1], Mohammad Reza Mirzaei[1], Amir Hossein Zamani[1]

1- Faculty of Agricultural sciences, University of Guilan, Rasht, Iran.

2- Faculty of Agricultural Sciences, University of Shiraz, Iran.

3- Faculty of Agricultural Sciences, Citrus Research Institute-Ramsar. Iran.

* Corresponding Author, Email: msohani@guilan.ac.ir

A B S T R A C T

In this study transgenic plants of sour orange (*C. aurantium)* that is an important citrus rootstock were produced by *Agrobacterium*-mediated transformation. Epicotyl and hypocotyl segments-derived explants were co-cultured with *Agrobacterium* strain EHA105 carrying pFGC5941 plasmid containsing CTV coat protein (p25) gene. One of the main objects of present research was to improve the direct *in vitro* organogenesis efficiency in *C. aurantium*. Therefore different combination of BAP (0, 1, 2 mg/L) and NAA (0, 0.25, 0.5 mg/L) were used in selective medium to culture transformed explants. The highest regeneration (57%) was obtained from explant treated with 2 mg/L BAP and 0.25 mg/L NAA. Effects of wounding and vacuum infiltration on transformation efficiency were evaluated either. The best transformation efficiency (11.25%) was obtained from explants that were vacuum infiltrated during transformation and subsequently were cultured in medium containing 2 mg/L BAP and 0.25 mg/L NAA. PCR analysis using two different genes were performed to confirm transformation. Micro grafting of transformed shoots were carried out on non-transgenic, in-vitro grown seedlings.

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Key Words

Agrobacterium tumefaciens, Direct Organogenesis, Epicotyl, Growth Regulators, Wounding

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