

PRODUCTION OF ARTEFICIAL SEEDS FROM HAIRY ROOT OF *CATHARANTUS ROSEUS*

Ali sharafi¹, Sepideh Valimehr¹, Sepideh Parvanian¹, Farrokh Karimi, Maryam Zolghadr nasab¹,
Haleh Hashemi Sohi^{1,*}

¹National Institute of Genetic Engineering and Biotechnology, Tehran, Iran

E-mail: Alisharafi@nigeb.ac.ir

Address: Shahrake Pajoohesh, km 15, Tehran-Karaj Highway, Tehran, Iran

This study established the in vitro culture of *Catharanthus roseus* hairy roots using Ri plasmid [pRi] T-DNA of ATCC15834 strain of *Agrobacterium rhizogenes* and then production of artificial seeds with hairy root inoculums as promising vehicle for propagation and conservation of this valuable hairy root of *C. roseus*. The shoots were cut in to segments and placed in to liquid MS medium containing a suspension of *Agrobacterium rhizogenes* ATCC15834. After 5 min the explants transferred to co-cultivation medium. 2 days later the explants transferred on to the agar solidified medium supplemented with 400mg/l cefotaxime. After 2weeks we obtained hairy roots and one month later we had different clones of hairy roots cultures (1,2).

We used a 4 week-old culture of hairy roots grown in liquid medium for artificial seeds. The young portions of the roots were cut into 5mm long segments and about 100 segments were suspended in the B5 medium supplemented with 3% sodium alginate. Such suspension was transferred to 70mM CaCl₂, Solution drop by drop using a sampler in order to replace sodium with calcium and encapsulate the root segments in calcium alginate. The capsules were incubated in the CaCl₂ solution for 10 min, and then artificial seeds were rinsed in distilled water transferred to the agar solidified B5 medium. Seeds were kept at 4°C and after 4 weeks were allowed to germinate on the B5 medium at 25°C.

Kye words: *Catharanthus roseus*, hairy root, artificial seeds