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Plant Regeneration from Hairy Root Cultures Transformed by Infection with *Agrobacterium rhizogenes* in *Catharanthus roseus*

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Objectives

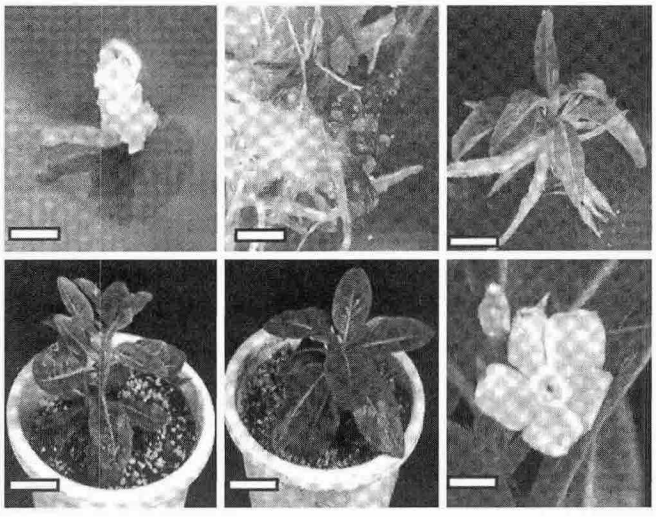
This study describes culture conditions for plant regeneration in hairy root cultures of *C. roseus*.

Materials and Methods

1. Materials : *Agrobacterium rhizogenes* RI000 was used for co-cultivation with hypocotyl explants of *Catharanthus roseus* (L.) G. Don cv. Cooler Apricot.
2. Methods : To induce adventitious shoots, hairy root cultures maintained on SH basal medium were cut into 1 cm long explants and cultured on MS medium supplemented with 6-benzyladenine (BA) (13.32 or 31.08 μM) and α–naphthaleneacetic acid (NAA) (5.37 or 10.74 μM) in combination. Each treatment consisted of six explants per dish with 10 replicates. After eight weeks of culture, the number of hairy root explants producing adventitious shoots and the number of adventitious shoots per explant were determined. Adventitious shoots formed on explants were excised and transferred onto half-strength MS basal medium to root. Regenerated plantlets were subjected to acclimation, transplanted to potting soil, and then maintained in a greenhouse.

Results and Discussion

Hypocotyl explants of C. roseus produced hairy roots when cultured on MS basal medium after infection of *Agrobacterium rhizogenes*. Hairy root explants gave rise to adventitious shoots at a frequency of up to 80% when cultured on MS medium supplemented with 31.1 μM BA and 5.4 μM NAA. Each line of hairy roots exhibited a vast difference in the frequency of adventitious shoot formation.



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