

MICROPROPAGATION OF *CARLINA ACAULIS* L.

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An efficient shoot propagation system for *Carlina acaulis* was developed in this study. The experimental material consisted of shoot tips and fragments of hypocotyls excised from 10-day-old seedlings. The explants were transferred to proliferation medium supplemented with different types of cytokinins: 6-benzylaminopurine (BA, 4.4 or 13.3 μM), kinetin (Kn, 4.7 or 13.9 μM) and zeatin (Zea, 4.6 or 13.7 μM) in combination with naphthaleneacetic acid (0.54 μM NAA). The morphogenetic response was best in culture on medium supplemented with 13.3 μM BA, and shoot organogenesis frequency was highest for shoot tips (100%). On average, 7.5 shoots were induced per explant of the initial material, and the multiplication rate in five subsequent subcultures was 6.1. Shoot length was lower in culture with BA in the medium than with Kn or Zea. Plantlets rooted with 60% frequency in vitro on full-strength MS medium and with 55.3% frequency ex vitro. Reduction of the mineral salt concentration (1/2MS) stimulated rhizogenesis. Addition of auxins stimulated both the frequency and number of roots per shoot, but only in combination with full-strength MS medium. Regenerated plants were able to flower and gave viable seeds.

Key words: *Carlina*, shoot tip, hypocotyl, benzylaminopurine, ex-vitro rooting.