

In vitro culture of *Cyclocarya paliurus* (Batal.) Iljinskaja through direct adventitious shoot regeneration

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Abstract

Cyclocarya paliurus (Batal.) Iljinskaja is a special species widely used in medicinal health, native to China. In this study, an efficient tissue culture system for *C. paliurus* has been established from nodal stem segments as explants. For adventitious shoot bud induction, MS medium combined with 6.0 6-benzylaminopurine (BAP) $\text{mg}\cdot\text{L}^{-1}$ was the best treatment, showing maximum response for induction frequency of 96.67 ± 3.85 . Different concentrations and combinations of plant growth regulators (IBA and TIBA) tested for shoot multiplication, maximum number of shoots (2.13 ± 0.50) regenerated on MS medium containing 1.5 $\text{mg}\cdot\text{L}^{-1}$ indole-3-butyric acid (IBA) and 0.02 $\text{mg}\cdot\text{L}^{-1}$ triiodobenzoic acid (TIBA). The regenerated shoot buds were elongated on MS medium supplemented with 1.5 $\text{mg}\cdot\text{L}^{-1}$ IBA (4.82 ± 0.09). Microshoots were rooted successfully with highest rooting response (67.59%) on WPM medium containing 2.0 $\text{mg}\cdot\text{L}^{-1}$ IBA. The present in vitro regeneration protocol could be used for large-scale propagation and conservation of *C. paliurus*.