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Plant regeneration from hairy root derived calli in *Scopolia parviflora*

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Objective

Scopolia parviflora is endemic in Korea and has been classified recently as being a rare endangered species. However, in vitro propagation methods for this species has not been elucidated. In particular, regeneration method through organogenesis also has not been reported. This study was carried out to investigate the effective regeneration of adventitious hairy root derived callus cultures of *S. parviflora*.

Materials and Methods

Callus was induced from hairy roots of S. parviflora on B5 medium supplemented with 3% sucrose, 2.4-D (0.1, 0.5, 1.0 and 2.0 mg/L), and 0.38% gelrite. The organogenic callus was selected and then cultured on B5 medium containing various hormones concentration of kinetin, zeatin, TDZ, BA, 2iP, and 2.4-D. Each hormone was added in different concentrations of 5, 10, and 15 mg/L, except 2.4-D was added in different concentrations of 0.5, 1, and 1.5 mg/L. The cultures were incubated at 25±2°C under light from cool-white fluorescent lamps (25mol m-2s-1) with 16/8 hr (light/dark) period for 10 weeks.

Results and Discussion

Callus formation was occurred at 4 weeks on B5 medium with 0.1~1.0 mg/L of 2.4-D (Fig. 1A). Shoot primodia was induced from organogenic calli after 2 weeks in cultures (Fig. 1B). Shoot regeneration was appeared at 4 weeks (Fig. 1C). Highest regeneration rate was obtained in a B5 medium with BAP and 2iP. Regenerated shoots were rooted with 100% efficiency on B5 basal medium. Our study will be contributed on the efficient propagation and conservation of *S. parviflora*.

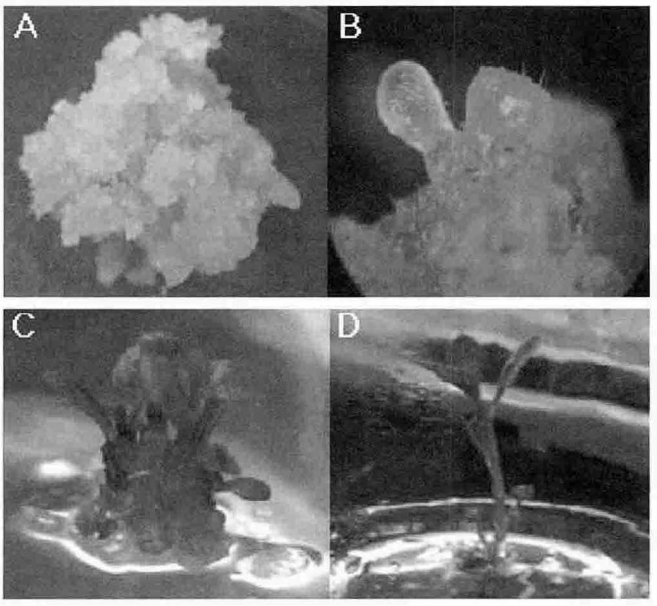

Fig. 1. Plant regeneration from hairy root derived callus of *S. parviflora*. (A) Organogenic callus, (B) Induction of shoot primodia, (C) Development of shoot primodia, (D) Elongation of shoots and rooting of regenerants.

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