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High frequency somatic embryogenesis and plant regeneration in root explant cultures of *Oryza sativa* L.

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Objectives

To establish high frequency plant regeneration system from root explants of *Oryza sativa* L. via somatic embryogenesis, the effect of 2,4-D on somatic embryo formation was examined.

Materials and Methods

1. Plant material

Plant – Approximately 0.5 cm long root tips of *Oryza sativa* L. cv. Nampyung

Medium - MS medium with 2,4-dichlorophenoxyacetic acid.

N6 medium with kinetin and NAA

2. Methods

To investigate the effect of growth regulators on embryogenic callus formation, root explants were placed on MS medium supplemented with various concentrations (0, of 2,4-D. Somatic embryos derived from root callus were transferred to N6 medium supplemented with 1 mg/L NAA and 5 mg/L kinetin for shoot elongation.

Results and Discussion

Root explants formed somatic embryo at a frequency of 82.1% on MS medium containing 6 mg/L 2.4-D. Upon transfer to MS medium supplemented with 5 mg/L kinetin and 1 mg/L NAA, root-derived somatic embryos were subsequently developed into shoot. Regenerated plantlets were transplanted into potting soil and maintained in a growth chamber. We also examined somatic embryo formation from several cultivars of *Oryza sativa* L.

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