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Establishment of Cryopreservation Method using Somatic Embryos in Herbaceous Peony (*Paeonia lactiflora* Pall.)

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Objectives

This study was carried out to establish a successful cryopreservation protocol using somatic embryos in herbaceous peony.

Materials and Methods

1. Materials : Somatic embryos of herbaceous peony (*Paeonia lactiflora* Pall.)
2. Methods

Embryogenesis from anthers and cotyledon tissues → classification of somatic embryos → desiccation by air drying → cryopreservation in LN using cryobial (2㎖) → thawing in water bath → culture on MS containing 0.3 mg/L GA_3

Results and Discussion

We established a successful cryopreservation protocol using somatic embryos in peony. Somatic embryos obtained from the cotyledon tissues cultured for 90 days on MS medium containing 1.0 mg/L ABA and from the anthers cultured for 90~120 days on hormone-free MS medium or MS medium with 2.0 mg/L PAA. The highest survival rate (94%) was obtained from the somatic embryos desiccated for 1 h by air drying (Fig. 1). This cryopreservation protocol appears to be a promising technique for germplasm preservation of herbaceous peony.

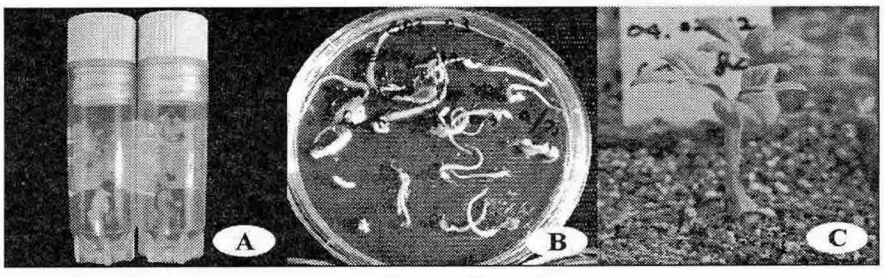

Fig. 1. Plant regeneration from the cryopreserved somatic embryos.
A : Somatic embryos in cryobial, B : Plant regeneration from the cryopreserved embryos,
C : Plant transplanted in pot.

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