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Somatic embryogenesis of *Sapindus mukorossi* Gaertn

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Objectives

Sapindus mukorossi is medicinal plant belonging to the Sapindaceae. The bark of tree make use to expectorant and the rind of fruit is used to natural detergent of plant. Somatic embryogenesis of forest trees has become a major tool in the study of plant embryology, mass propagation, artificial seed and genetic transformations. The process has been studied by an examination of the exogenous vitro factor (cytokinin, ABA, auxin transport inhibitors) which influence embryo formation in *S. mukorossi*.

This study gives a somatic embryogenesis and plant regeneration in tissue culture *S. mukorossi* by reviewing information on the culture conditions. These information can provide not only an important tool in studies in basic embryology but also potentially of equal significance in the micropropagation of economically useful plants.

Materials and Methods

1. Materials: *in vitro* culture *S. mukorossi*
2. Methods
   - optimum medium of *in vitro* plant growth: axillary bud transferred to various medium and plant growth regulator, it was measured to the shoot length.
   - somatic embryo induction: embryogenic callus of *S. mukorossi* were induced on MS medium supplement containing 0.1-5 mg/L 2,4-D or NAA and 0.1-5 mg/L BA.
   - embryogenic callus of propagation: embryogenic callus transferred to MS medium supplement containing 0.1-5 mg/L 2,4-D and 0.01-0.5 mg/L BA.
   - development somatic embryo: embryogenic callus transferred to MS medium supplement containing 0.1-5 mg/L ABA.
   - plant regeneration from somatic embryos: embryogenic callus transferred to MS medium with non-phytohormone.

Results and Discussion

Somatic embryos were obtained and plants regenerated from leaf of *S. mukorossi* following culture on embryogenic induction media. The optimal *in vitro* culture medium of axillary buds was B5 medium with 1 mg/L BA and 0.1 mg/L 2,4-D. According to this study, somatic embryos were induced very difficult of dependent auxin, so it was added to the cytokinin. Highest rates of embryogenic callus resulted on MS solid medium with 0.01 mg/L BA and 0.1 mg/L 2,4-D. The development of somatic embryo was observed about 6 weeks on MS solid medium with ABA contain. The optimal plant growth regulator was 5 mg/L ABA which produced 74% development of somatic embryo frequency.

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