

## ***In vitro* Callus and Somatic Embryo Induction of Six *Hosta* Species Native to Korea**

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*Hosta* is a genus of the family Asparagaceae and distributed in East Asia. There are six *Hosta* species (*Hosta capitata* (Koidz.) Nakai, *H. clausa* Nakai, *H. jonesii* M.G.Chung, *H. minor* (Baker) Nakai, *H. venusta* F.Maek., and *H. yingeri* S.B.Jones) native to Korea and among them, four species (*H. minor*, *H. jonesii*, *H. venusta* and *H. yingeri*) are endemic to the Korea peninsula. *Hosta* is generally propagated by seed, crown division or tissue culture. However, tissue culture is a more efficient method to mass proliferation, a new cultivar development and disease-free plantlet production in a limit time. Hence, we conducted this study to evaluate the influence of various plant growth regulators (PGRs) treatments on the induction of callus and somatic embryo of the six *Hosta* species. Leaf, petiole and root were used to select optimum tissue culture explants. Petiole explants thus only were used for callus induction and somatic embryogenesis with TDZ (0.1, 0.5 or 1.0mg/L) and NAA (0.1 or 0.5 mg/L) combinations. After 12 weeks of culture, the highest rate of somatic embryogenesis was achieved on modified MS medium containing 1.0 mg/L TDZ and 0.1 mg/L NAA in *H. capitata* and *H. minor* (15.5%, respectively), 0.1 or 0.5 mg/L TDZ and 0.1 mg/L NAA in *H. jonesii* (22.2%), 1.0 mg/L TDZ and 0.5 mg/L NAA in *H. yingeri* (26.7%), and 0.1 mg/L TDZ and 0.5 mg/L NAA in *H. venusta* (53.3%). *H. clausa* showed very low effect on somatic embryogenesis by PGRs; 2.2%. There was interspecies difference to PGRs respond for callus and somatic embryo induction. Regenerated multiple shoots and plantlet of *H. minor*, *H. jonesii*, *H. venusta* and *H. yingeri* were obtained via somatic embryogenesis.

Key words: Callus, *Hosta*, *in vitro*, Plant growth regulators, Somatic embryo

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