Establishment of in vitro Propagation Protocol for Hosta capitata using Shoot Tip Meristem

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Hosta capitata is one of the important endangered medicinal and ornamental plant species endemic to South Korea. Population of the species has been declining due to climate change and careless collection practices. To protect the species from extinction, it is essential to develop an efficient in vitro propagation method for mass production of the plants for consumers and conservation. However, due to its difficulty to eliminate microbial contamination, successful in vitro propagation method of this species has not been available yet so far. This study was conducted to establish in vitro propagation protocol of this species using apical meristems, which were excised from in vivo plants grown in the greenhouse. Of different sterilization methods, we could screen an appropriate sterilization method for obtaining higher percentage of contamination-free and survival explants. In addition, concentrations of PGRs producing healthy shoots from the apical meristems was also successfully optimized. Moreover, the regenerated shoots well rotted and rapidly grew on the plant growth media. Moreover, there was no variation in vegetative and floral organs when they were compared with mother plants under a greenhouse. Therefore, we suggest that the in vitro propagation method will be helpful for commercial production and conservation of this species and other related species.

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