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Micropropagation and cryopreservation of *Celastrus paniculatus* Willd.

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Abstract

Celastrus paniculatus Willd. is an important medicinal plant of Western Ghats which is over-exploited in its natural habitat to meet the growing needs of the pharmaceutical industry and got listed in the regional IUCN list as a vulnerable species. An efficient micropropagation protocol was developed for mass multiplication of *C. paniculatus* using BAP and Kin. Maximum shoot multiplication was observed in MS media fortified with 1.5 mg/l BAP. Maximum root induction was observed in full strength with the addition of 0.2% activated charcoal. Cryopreservation has proven to be an *in vitro* conservation method that has become an important tool for the long-term storage of plant genetic resources. Cryopreservation protocol for the long term conservation of *C. paniculatus* was developed using nodal segments from *in vitro* regenerated shoots in 0.5mg/l BAP. The ideal time period for the desiccation of nodal segments is 1.5 hours. In vitrification procedure, the nodal segments pre-cultured in MS + 0.3M sucrose was found beneficial for shoot survival after treatment with Liquid Nitrogen. The ideal exposure period of nodes to PVS2 vitrification solution was 10 minutes at 25° C ± 2° C.

Keywords: *Celastrus*, *in vitro*, vitrification, liquid nitrogen, conservation