

Refinement of a vitrification protocol for protocorm-like bodies of *Dendrobium sonia-28*.

ABSTRACT

The hybrid *Dendrobium sonia-28* is an important ornamental orchid in the Malaysian flower industry. However, it faces the risk of producing heterozygous progenies through conventional seed propagation or somaclonal variation. Cryopreservation is a favoured long-term storage method in the preservation and maintenance of orchids with specific desired traits. This paper presents a successful cryopreservation protocol for protocorm-like bodies (PLBs) of *Dendrobium sonia-28* through the vitrification technique and the use of ascorbic acid and charcoal. Survival assessments were conducted through growth evaluations and visual and spectrophotometric 2,3,5-triphenyltetrazolium chloride assays. Results of this study, an improvement over the previous protocol applied to this orchid hybrid, showed that the addition of ascorbic acid to the preculture, loading, dehydration, unloading, and regeneration media, coupled with the addition of charcoal to the regeneration medium, helped boost recovery rates of cryopreserved PLBs of *Dendrobium sonia-28*.

Keyword: Cryopreservation; *Dendrobium sonia-28*; Plant vitrification solution 2; Protocorm-like bodies.