

A preliminary study of protocorm-like bodies (PLBs) induction using leaf explants of Vanda and Dendrobium orchids.

ABSTRACT

The leaf excised from in vitro plantlets of Vanda Somsri Pink and Dendrobium Bobby Mesina Red was used in this study to induce protocorm-like bodies (PLBs). The leaf explants were cultured on full strength Murashige and Skoog (MS) basal medium with 3 % (w/v) sucrose. Various types of plant growth regulators such as 1-naphthaleneacetic acid (NAA), picloram, 6-benzyladenine (BAP) and kinetin with different concentrations (1, 3, 5 mg/L) were used to study the effects of these plant growth regulators (PGRs) on PLBs induction. The effects of horizontally and vertically culture positions for the leaf explants was also investigated. From the results obtained, it showed that for the Vanda hybrid the medium supplemented with 1 mg/L NAA or 1 mg/L picloram were able to induce PLBs from the vertically-cultured leaf explants. In addition, PLBs were observed from the PGRs-free medium for the Vanda orchid. On the other hand, after four weeks of culture, PLBs were induced from the vertically-cultured Dendrobium 's leaf explants from the medium containing 3 mg/L NAA or 5 mg/L BAP. There was no PLBs formation observed from all the horizontally-cultured leaf explants of both types of orchids used in this study. The horizontally-cultured leaf explants remained green for four weeks before turning brown and died. In conclusion, leaves are the potential explants that can be used to induce PLBs for the Vanda and endrobium orchids.

Keyword: Protocorm-like-bodies (PLBs); Orchids; Dendrobium; Vanda; Micropropagation.