

Establishment of Callus and Cell Suspension Cultures of *Corydalis saxicola* Bunting, a Rare Medicinal Plant

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An efficient procedure has been developed for callus induction and cell suspension cultures of *C. saxicola* for the first time. Explant selection was carried out among leaf, stem and root to select a suitable type of explants capable of higher callus formation. Leaf explants thus selected showed maximum response to callus induction (67.1%). Modified B₅ medium supplemented with 0.5 mg l⁻¹ 2,4-D plus 2 mg l⁻¹ BA was the most favorable medium for callus formation with the highest induction rate (94.8%) and greatest fresh weight of callus (1.7 g per explant). Cell suspension cultures were established by transferring 2–8 g fresh callus to 80 ml liquid B₅ medium. An inoculum size of 8 g produced the greatest biomass accumulation, dehydrocavidine and berberine productions, which was 13.1 g l⁻¹, 8.0 mg l⁻¹ and 4.1 mg l⁻¹, respectively. In response to various sucrose concentrations from 10 g l⁻¹ to 80 g l⁻¹, cultures with 60 g sucrose l⁻¹ not only produced the highest dry biomass (18.5 g l⁻¹) but also the highest formation of dehydrocavidine (11.6 mg l⁻¹) and berberine (7.6 mg l⁻¹). These prepared cell suspension cultures provided a useful material for further regulation of alkaloid biosynthesis and for enhanced production of valuable alkaloids on a large scale.

Key words: Callus, Cell Suspension Cultures, *Corydalis saxicola* Bunting