

Secondary Metabolite Production in *Centella asiatica* and *Centella cordifolium*.

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A number of different plant species synthesize triterpenoid saponins as part of normal growth and development. Interest in these molecules stems from their medicinal properties, antimicrobial activity, and their likely role as determinants of plant disease resistance. The aim of this study was to evaluate the most suitable concentration of growth regulators, namely 2,4-dichlorophenoxyacetic acid and 6-benzylaminopurine for callus proliferation and possible organogenesis in *Centella* species and to analyse the terpenoid and anthocyanin production due to the auxin to cytokinin ratio. Wet and dry weight concentrations of plant cell suspensions were done by suction filtration and subsequent dehydration to obtain dry weights as secondary metabolites usually accumulate during the period that follows the active growth phase. Thin layer chromatography analysis was done in a chloroform, glacial acetic acid, methanol, dH₂O (60:32:12:8) development solution and detection of triterpenoids were done by natural fluorescence at 365 nm or sprayed with anisaldehyde-sulphuric acid reagent. The active constituents include pentacyclic triterpene derivatives, which consist of the triptene saponins (madecassoside and asiaticoside) and their sapogenins (madecassic and asiatic acid). In general, very little is known about the enzymes and biochemical pathways involved in this saponin biosynthesis. The genetic machinery required for the elaboration of this important family of plant secondary metabolites is still largely uncharacterised, despite the considerable commercial interest in this important group of natural products. This is likely to be due in part to the complexity of the molecules and the lack of pathway intermediates for biochemical studies.