H201 Production of catalpol in transformed root cultures of *Rhemannia glutinosa*

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Rhemannia glutinosa is a valuable herb medicine which has been used in traditional medicine. Catapol high producing R101 clone of transformed root was established by infection of *Agrobacterium rhizogenes* A4, ATCC15834. They were used as a culture system *in vitro* for a medicinal materials production to avoid many of the problems that affect the traditional production from field-grown species. The growth and catalpol content of transformed roots of *Rhemannia glutinosa* grown in flask were differently affected by basal culture media tested. The best growth of transformed roots was obtained on SH medium with 3% sucrose. The maximum production of catalpol was achieved in WPM medium containing 3% sucrose. Addition of biotic elicitors to root cultures produced remarkable effect on metabolites production. For mass production of medicinal substances, hairy roots was cultured in air-lift type bioreactor. The scale-up cultures did not lead to any loss in biomass yield and secondary metabolites productivity.

H202 *In vitro* Propagation of *Stevia rebaudiana* Bertoni

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Stevia rebaudiana is an herb in the Chrysantheum family which grows wild as a small shrub in Northeastern Paraguay. This is the best source of a natural sweetners since its leaves are rich in ent-kaurene glycosides constituents, i.e., stevioside and rebaudioside. Stevia is heterogeneous and does not flower under the environmental conditions of some aereas to which it has been introduced; hence, an efficient method for its clonal propagation is need. An optimal micropropagation procedure was achieved using nodal segments with two axillary buds as explants. Effects of plant hormone type and concentration, basal medium medium (MS, SH, WPM, B5, LS) on shoot multiplication were tested. Shoots proliferated *in vitro* were multiplied on MS medium containing 2-3 mg/L IAA and 0.5 mg/L kinetin. Shoots were rooted on MS medium supplemented with 1-2 mg/L NAA. Rooted plantlets were potted and acclimatized in a growth chamber and then moved to the greenhouse.