In vitro clonal propagation of *Trichosanthes tricuspidata* Lour and confirmation of clonal fidelity of R_1 plantlets using ISSR markers

G. Rajender, J. Phanikanth*, K. Srikanth, K. Rajender ,T Christopher, A.V Rao*, A.Sadanandam*

Department of Botany, Kakatiya University, Warangal, TS
*Department of Biotechnology, Kakatiya University Warangal, TS

---x---

ABSTRACT

Trichosanthes tricuspidata Lour, (Red ball snake gourd) of Cucurbitaceae family is an important ethnomedicinal plant. The root and fruit extracts exhibited anti –microbial, anti- helminthes and anti –pyretic activity. Cucurbitacin from fruit pericarp showed cytotoxic effect. Trichosanthin induced apoptosis of Leukemia K56 cells and is undergoing trials as possible remedy for AIDS.

Leaf explant of one year old vine of *Trichosanthes tricuspidata* inoculated on MS medium supplemented with various concentration and combinations of auxins viz., 2, 4-Dichlorophenoxy acetic acid (2,4-D), Indole-3-acetic acid (IAA), Indole -3-butyric acid (IBA) and cytokinins viz., Kinetin (Kn) , 6-Benzyl amino purine (BAP) & Thidiazuron (TDZ) produced three morphogenic responses, after 4 weeks culture.

Maximum fresh weight of callus (1.570 mg) was observed in 90% cultures on MS+2, 4-D 1.0 mg/L. About 70 % cultures produced roots on MS +IBA 1.0 mg/L. Maximum number of shoots (20.2) were observed on MS+ BAP 3.0 mg/L + TDZ 0.5 mg/L. Shoot buds were produced via direct organogenic pathway and were stunted. For further elongation and rooting, the cultures were transferred to MS+ IBA 1.0 mg/L. Weaning of R_1 plantlets occurred in green house.

A total of 7 randomly selected R_1 plantlets were subjected to ISSR analysis. The HY4 and HY12 amplification products of mother plant and 7 R_1 plantlets were monomorphic, which confirms clonal fidelity. The empirical data will be presented in the TAS Science Congress.

.