

**H205** Production of 20-hydroxyecdysone from hairy root cultures of *Ajuga decumbens* Thunberg

Jin Ok Ha\*, Kwang Soo Kim and Baik Hwang  
Department of Biology, Graduate School, Chonnam National University Kwang-ju, Korea

Optimal culture condition and 20-hydroxyecdysone production were investigated in hairy root cultures of *Ajuga decumbens* Thunberg (*Labiatae*). Five hairy root clones were obtained by transformation with *Agrobacterium rhizogenes* ATCC 15834 strain. Growth, opine synthesis and production of 20-hydroxyecdysone in the clones have been examined. Agropine and mannopine, two specific opiens synthesized in the tissue transformed with ATCC 15834 strain were detected in all the clones. One clone selected by growth and branching rate, AD-2 was used for experiments. Medium condition was good in 1/2MS medium. Light condition was similar to dark condition and was partly observed chlorophyll production. Sucrose was the most adequate carbon source and 3% showed a high cell mass. Indoleacetic acid (IAA) supplementation increased the growth rate of hairy root due to an increase in the number of root apical meristem. Production of 20-hydroxyecdysone from hairy root cultures was identified by TLC and HPLC.

**H206** Production of Useful Compound through Induction and Culture of Hairy Roots from *Achyranthes japonica* (MIQ.) NAKAI

Kwang Soo Kim\*, Soo Jin Chung and Baik Hwang  
Department of Biology, Chonnam National University, Kwangju, Korea

The hairy root cultures of *Achyranthes japonica* were established by infection leaf and stem explants with *Agrobacterium rhizogenes* A4 and 15834. The induced hairy roots were subjected to paper electrophoresis for the detection of opine and opine-positive clones which were considered to have been transformed. Four hairy root clones were selected according to the growth rate and pattern. Among media tested, 1/2 MS medium substituted phosphate concentration by 0.63mM K<sub>2</sub>HPO<sub>4</sub>, nitrogen source, 19.7mM KNO<sub>3</sub> supplemented with 2% sucrose at 20°C showed the highest growth rate in dark condition. Hairy root AJ3 clone showed content of total saponin (0.536% dry wt.), whose level were much higher than those of intact plant root (0.305% dry wt.).