Ⅲ-9

In vitro Culture and Plant Regeneration via Organogenesis of *Hypericum perforatum* L.

Department of Biology, Chonnam National University, Gwangju.
Mei-lan Jin and Baik Hwang※

Objectives

Hypericum perforatum L. is a traditional medicinal plant which is gaining popularity mainly for the treatment of depression and wound healing. Recently, this plants were shown to have potential as a source of novel anticancer compounds.

The object of this study was to establish an efficient shoot regeneration and then to make successful transformants.

Materials and Methods

1. *In vitro* germination

◦ Plant materials: *Hypericum perforatum* L.

◦ Surface - sterilization: Seeds were washed with running tap water and were surface-sterilized using sodium hypochlorite (0.3%, v/v) for 10 min, followed by three or four washes in sterile distilled water. Surface-sterilized seeds were placed on MS basal media for germination.

2. Callus induction and Plant regeneration

◦ Plant materials: The leaf (5×5 mm), internode segments (5-10 mm) excised from the stock plant, which served as the experiment material for callus induction.

◦ Medium and growth regulators: MS medium containing different combinations on concentrations (0.1, 0.5, 1.0, 2.0 mg/L) of auxins (NAA, IBA, IAA) and cytokinins (BA, Kinetin).

◦ Culture condition: 25 ℃, 16-h photoperiod (50 umol · m^{-2} · s^{-1})

Corresponding author : (E-mail) bhwang@chonnam.ac.kr (Tel) 062-530-3390

Results and Discussion

1. Callus induction of *H. perforatum* was examined on media with auxins and cytokinins. Callus induced both leaf and internode in most combination of plant growth regulators.

2. An efficient procedure for shoot organogenesis of *H. perforatum* was established. Internodes were identified as the most suitable type of explant for shoot formation. Best results (90%, efficiency of shoot formation per explant) for shoot organogenesis were obtained with 0.1 mg/L IBA and 0.1 mg/L BA. The shoots transferred to plant growth regulators- free MS medium for root formation spontaneously formed roots on same medium after 3 weeks.

3. Plantles were transferred to the greenhouse. Overall, it took about 3 months from shoot internodes to plants growth in the greenhouse.