(05-1-60)

In Vitro Flowering of Soybean (*Glycine max*)

Young Jin Kim[1]*, Seung Bum Lee[2], and Henry Daniell[2]

[1]Honam Agricultural Research Institute, NICS, RDA, Iksan 570-080, South Korea

[2]Department of Molecular Biology and Microbiology, University of Central Florida, 4000 Central Florida Boulevard, Biomolecular Science, Building 20, Room 336, Orlando, FL 32816-2364

Objectives

We have tried to make transformation of *phalaneopsis* orchid through *Agrobacterium tumefaciens* and successfully obtained transgenic *phalaneopsis* by tissue culture system.

Materials and Methods

1. Material

Three soybean genotypes : Pungsannamulkong, Bosukkong, Williams 82; MS medium with plant hormones

2. Methods

Three-day-old cotyledons after germination induced adventitious shoots and were compared for organogenic responses on various media cultured under light conditions.

Results and Discussion

The optimal medium for the induction of multiple shoots from cotyledon in Pungsannamulkong (shoot formation rate, 99%) was MS medium supplemented with 2.5 ㎎/l 6-benzylaminopurine (BAP), and Bosukkong (94%) was MS medium supplemented with 1.5 ㎎/l thidiazuron (TDZ), but for Williams 82 (92%), MS medium supplemented with 0.5 ㎎/l TDZ, 1 ㎎/l BAP, and 0.01 ㎎/l α-naphtalene acetic acid (NAA). Higher root induction (94%) was observed from the shoots placed on rooting medium. Plantlets were transferred onto the same medium supplemented with 1% activated charcoal for further development. With this treatment, regenerated plantlets were obtained within 7 weeks. In vitro induction of flowering was developed from auxiliary buds of mature cotyledon in soybean. Although the proportion of seedlings induced to flower is influenced by genotypic variation, a cytokinin or a shift in the auxin-cytokinin equilibrium is known to bring about in vitro induction of flowering. The optimal medium for the induction of in vitro inflorescence from cotyledon in Bosukkong (flowering induction rate, 74%) and Pungsannamulkong (63%) was MS medium supplemented with 2 ㎎/l TDZ. Some of inflorescence buds were developed seed set, but observed reduction of pollen fertility.

**Corresponding author* : Young Jin Kim, Tel : 063-840-2237, E-mail : yjikim@rda.go.kr