(05-1-66)

# Expression of *ROT* 3 Gene by *Agrobacterium*-mediated Transformation in Perilla Leaf *(Perilla frutescens)*

**Hyun-Suk Lee[1], Kyung-Min Kim[2], Kyung-Tae Kim[3], Jae-Keun Sohn[1]***

[1]Department of Agronomy, Kyungpook National University, Daegu, 702-701, Korea. [2]Institute of Genetic Engineering, Kyungpook National University, Daegu, 702-701, Korea. [3]College of Natural Resources and Life Science, Dong-A University, Busan, 604-714, Korea.

## Objectives

This study was carried out to obtain the transgenic perilla with an improved leaf shape using *Agrobacterium*-mediated transformation system of *ROT*3 gene.

## Materials and Methods

1. Plant material:

Cotyledon and hypocotyl explants excised from 7-day-old seedlings

*Agrobacterium* strain – C58C1Kif$^r$/pBI-*ROT*3

2. Methods:

Transformants were selected from *Agrobacterium* infected perilla explants on MS medium with 0.1~0.5 mg/L BA, 1.0~2.0 mg/L NAA, 50 mg/L kanamycin, and 250 mg/L cefotaxime. Elongated shoots (2~4 cm length) were transferred to MS basal medium for rhizogenesis.

## Results and Discussion

The highest efficiency (26.5%) of shoot regeneration was obtained from the cotyledon tissues cultured on MS medium with 0.5mg/L NAA and 1.0mg/L BA. The high frequency of adventitious shoots was induced directly without an intervening callus phase from cotyledon and hypocotyl explants. The transformants were confirmed by PCR and RT-PCR analysis. The leaf characteristics of transgenic perilla were compared with those of donor plants.

**Corresponding author* : Jae Keun Sohn, Tel : 053-950-5711, E-mail : jhsohn@knu.ac.kr