04-1-33

Agrobacterium-mediated genetic transformation of corn (Zea may L.)

Mi Ae Cho[1], Yun Mi Song1, Woo Hyung Choi, Yun Ok Park1, Tom Clemente[2], Jin Suck Kim[3], Jang Ryol Liu[4], and Pil Son Choi[5*]

1Eugentech Inc., 2Plant Science Initiative, University of nebraska-Lincoln, USA, 3Korea Research Institute of Chemical Technology, 4Laboratory of Plant Cell Biotechnology, Korea Research Institute of Bioscience and Biotechnology (KRIBB), 5Department of Medicinal Plant Resources, Nambu University

Objectives

To development consensus genetic transformation system of corn using A. tumefaciens mediated immature embryo cocultivation.

Materials and Methods

1. Genotypes of corn (HiII type)
2. Plant regeneration via somatic embryogenesis, Agrobacterium cocultivation method, GUS assay, Southern blot analysis

Results and Discussion

Using Agrobacterium-mediated transformation methods (Shirley et al., 2001) with some modified, immature embryos of Hi II genotype were infected with Agrobacterium strain C58 carrying pPTN290 bearing the GUS as reporter gene and NPTII gene as selectable marker, that driven by a Ubi1 promoter or a CaMV35S promoter, respectively. We have produced 3 primary putative transgenic callus clones, and obtained plants (T0) from them. Southern blot analysis (T1) and GUS expression (T0) revealed that the forign GUS gene integrated into chromosomal DNA region, and that expressed at the transcriptional level in these transgenic plants, respectively.

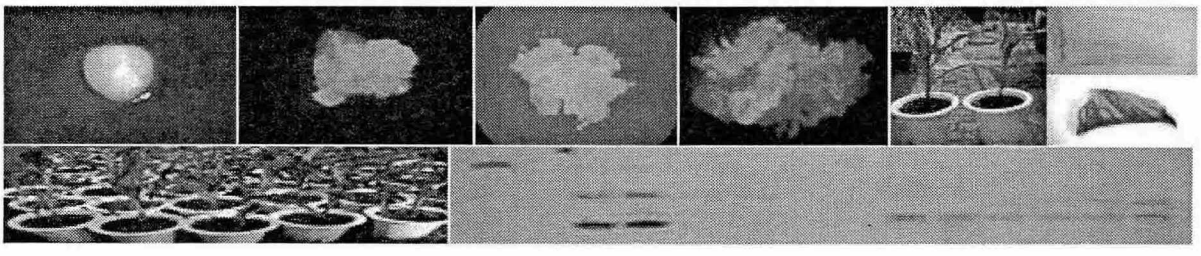

Fig 1. GUS assay and Southern blot analysis of transgenic corn (T0,T1) produced from Agrobacterium tumefaciens-mediated immature embryo cocultivation method

*Corresponding author: Pil Son Choi, TEL: 062-970-0161; E-mail: cps6546@nambu.ac.kr