

04-1-8

Agrobacterium-Mediated Transformation of Cucumber (*Cucumis sativus* L.) with Human Bcl2-encoding Gene

Jung Hee Kwon¹, Je Wook Woo¹, Hyun Wook Kang², Byung Hoon Min³, and
Byung Whan Min^{1*}

¹Biotechnology Center, Nong Woo Bio Co., Ltd. Yeosu, 469-885, Korea

²Cucumber Team, Nong Woo Bio Co., Ltd. Miryang, 627-834, Korea

³Dept. Horticultural Science, Pai Chai University, 302-735, Korea

Objectives

To establish high frequency of transformation system for cucumber, various conditions for transformation were investigated. Transgenic cucumber plants were obtained by selecting *Agrobacterium*-mediated transformed hypocotyls on kanamycin (100mg/L) containing medium. Bcl-2 gene is an anti-apoptotic member of the Bcl-2 family of cell death regulators. In this study, we expect that transgenic cucumber plants are protected by several lethal abiotic stresses including heat, cold, menadione and hydrogen peroxide.

Material and Methods

Cotyledons of the cucumber inbred lines were inoculated with *Agrobacterium* strain LBA4404 harboring human Bcl-2 gene.

Results and Discussion

Transgenic cucumber plants were successfully obtained from cotyledon explants inoculated with *Agrobacterium tumefaciens*, which harboured a binaty vector plasmid with human Bcl-2 gene.

1. Integration of the Bcl-2 gene into genome was confirmed by Southern blot analysis. The results showed that at least one or two copies of Bcl-2 gene were integrated into cucumber genome.

2. Over 10 transgenic cucumber plants were obtained.

3. In the future, T1 progeny of transgenic cucumber plants will be tested to plant defense response by pathogen infection.