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Transgenic Cabbage (*Brassica rapa* L.) introduced ferritin gene results in enhanced resistance to biotic stress

Shin Hye-Young, Arvintulga Bataa, Jin-Heui Park & Kwon-Kyoo Kang

Department of Horticulture, Hankyong National University, 67 Seokjeong-dong, Ansung city, Kyonggi-do 456-749, South Korea

Objectives

In order to increase the ferritin content of cabbage (*Brassica rapa* L.) by using genetic engineering, we introduced the soybean ferritin gene (SoyFr) into cabbage tissue via *Agrobacterium temefacience* strain (LBA4404/pBI121) and investigated molecular chacterization to T2 and T3 generation.

Materials and Methods

1. Material

   Plant: Chinese cabbage (cv.Seoul baechu)

   Agrobacterium strain: LBA4404/pBI121

2. Methods

   Breeding of transgenic plants using *Agrobacterium tumefacience*

   Molecular characterization: (Southern blot, RT-PCR analysis, RealTime PCR, Northern blot)

Results and Discussion

Ferritin gene isolated from soybean was introduced into cabbage (*Brassica rapa* L.) cotyledons via *Agrobacterium tumefaciences*-mediated transformation. Transgenic lines carrying of transgene was confirmed for integration into the cabbage genome using Southern blot hybridization and PCR analysis. Transcription of transgene in various transgenic lines was determined using RT-PCR or Northern blot analysis. Ferritin contents were investigated transgenic lines and control (non-transformed). Plants of selected transgenic lines were treated with biotic stress (bacterial, fungal and virus). Compared to control (non-transformed) plants, two transgenic lines showed enhanced resistance to some biotic stress.

* *Corresponding author* : Kwon-Kyoo Kang, TEL: 031-670-5104, E-mail: kykang@hknu.hankyong.ac.kr