

P 33 Introduction and Expression of Rat Gene for L-gulono- γ -lactone Oxidase (*GLOase*), the Key Enzyme of L-ascorbic Acid Biosynthesis, in Lettuce

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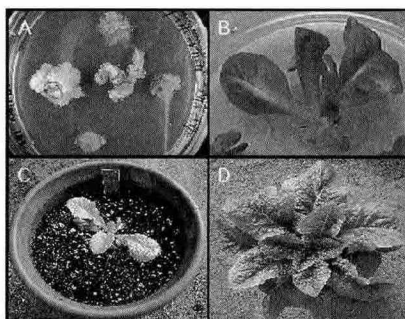
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Objectives

This study was carried out to develop the reliable method for the introduction of a *GLOase* gene into lettuce (*Lactuca sativa* L.) and the transgenic lettuce plants with high L-ascorbic acid content.

Material and Method

1. Plant material: cotyledons 3 days after seedling of Lettuce (*Lactuca sativa* L.) var. Hanbat Green Skirt
2. Method: *Agrobacterium tumefaciens* LBA4404-mediated transformation

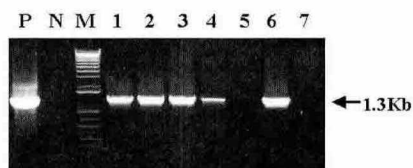


A : Shoot formation in a selection medium
B : Regulation of the putative transgenic plant
C and D : Whole transgenic plant in the pot

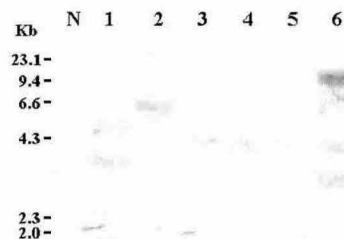
3. Regeneration medium: MS basal medium containing 3% sucrose, 0.5 mg/L BAP, and 0.1 mg/L NAA

Results

1. PCR and DNA gel blot analyses showed that the *GLOase* gene was stably integrated into the lettuce genome.
2. A total of 70 transgenic plants were obtained in this study (transformation rate: 1.6%).
3. Further works: measurement of L-ascorbic acid content in the progeny.



P : Positive control, N : Nontransformed plant
1 ~ 7 : The putative transgenic plants



Hinf III
N : Negative control
1 ~ 6 : Transgenic plants