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Tomato Transformation by Vitamin C Biosynthesis Related Genes

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Objectives

L-ascorbic acid (vitamin C) in fruit is an essential component of human nutrition. The objective is to transform tomatoes with *GalUR* and *GLOase* gene that are related to the vitamin C biosynthesis and to select the transformed tomatoes by mannose. Vitamin C levels in tomato fruit have been known to be associated with the expression levels of *GalUR* and *GLOase* gene. Mannose can be used as one of alternative selection agents in the plant transformation process. It inhibits the energy supply in the plant carbon metabolism by uptaking the inorganic phosphate so that plant eventually would die.

Materials and Methods

1. Materials: cotyledon explants from tomato inbred line D and H; *Agrobacterium* strain and clone: EHA101/pGalUR3635 and LBA4404/pGLOase3635; Medium: B5 MS medium supplemented with sucrose 10g/L, mannose (10, 15, 20g/L), zeatin 2mg/L, IAA 0.2mg/L
2. Method: *Agrobacterium*-mediated transformation; PCR; Southern analysis

Results and Discussion

We obtained T₁ plants transformed separately with *GalUR* and *GLOase* gene. They are growing in the green house and will be tested soon for Vitamin C levels.



T₁ tomato plants (taken on Oct. 4, 2004)