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형질전환 토마토 캘러스와 식물체에서의 hepatitis A virus VP1의 발현

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Expression of hepatitis A virus VP1 in transgenic tomato calli and plants

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Objective

Hepatitis A virus (HAV) causes one of the acute viral hepatitis in humans after an incubation period of approximately 2 to 6 weeks. Among the capsid proteins of HAV, VP1 appears to be the dominant structural protein. Studies of isolated structural proteins or synthetic peptides for the induction of neutralizing antibodies suggest that VP1 contains a major immunodominant epitope of HAV. Therefore, the production of large quantities of soluble HAV VP1 proteins would be necessary for immunological and biochemical studies directed toward vaccine development

Materials and Methods

○ Materials

pILTAP 357, BCTV Vector, MicroTom

○ Methods

Agrobacterium-mediated transformation, DNA & RNA extraction, genomic DNA PCR, RT-PCR, Western blot analysis, Plant tissue culture and regeneration

Results

In this study, we describe the expression of recombinant hepatitis A virus (HAV) VP1 in transgenic calli. The insertion of the HAV VP1 gene in the genome of calli

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was confirmed by genomic DNA PCR and the expression of the HAV VP1 gene was examined by RT-PCR analysis. We are in the process of examining the expression of recombinant VP1 proteins by western blot analysis. Also, we are currently constructing transgenic plants expressing HAV VP1.

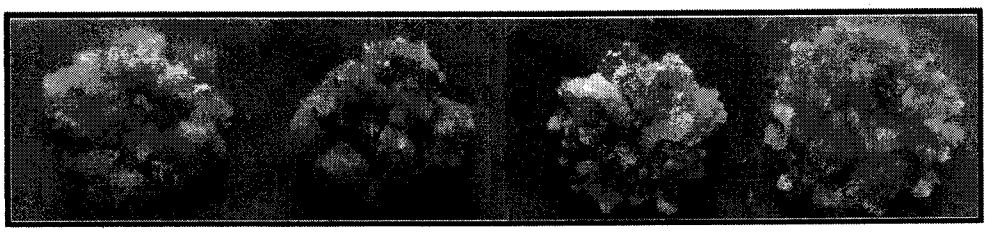

Figure 1. Establishment of tomato callus

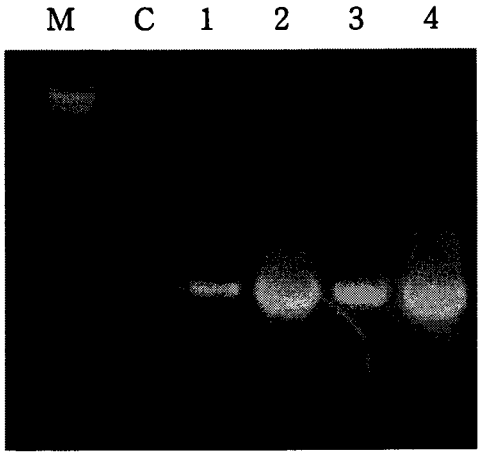

Figure 2. Confirmation of HAV VP1 gene insertion in tomato transgenic calli by genomic DNA PCR. M : molecular marker; C : normal callus; Lanes 1-4 : transgenic calli