F207

Cloning of cDNA and Genomic DNA Encoding the Chloroplast Translational Elongation Factor(EF-Tu) from Maize(*Zea mays* L.)

Kyu Lee Choi* and Woong Seop Sim
Department of biology, Korea University

A cDNA library was constructed into a vector λgt11 with maize poly(A)$^+$ RNA. In order to construct a partial genomic library, the 17kb,18kb and 8kb *Bam*HI fragments which show the signal in genomic southern hybridization analysis using a tobacco EF-Tu genomic DNA as a probe was isolated from total genomic DNA of maize leaves and ligated into a vector EMBL3. Putative three genomic clones(λG3, λG5, λG7) and twelve cDNA clones for maize EF-Tu were isolated by plaque hybridization. These genomic clones were further analyzed by southern hybridization with different restriction endonucleases. The 3kb *Eco*RI fragment, 5kb *Nco*I fragment , and 5kb *Eco*RI/*Bam*HI fragment of the inserts in λG3, λG5, and λG7 were hybridized with the same probe and subcloned into a vector pDELTA2. Each of the clones were named pDMG3, pDMG5, and pDMG7. The *Eco*RI fragments of twelve cDNA clones hybridized with the same probe were isolated from the cDNA clones and some of them were subcloned into a vector pBluscriptSKII.

F208

The Best Combination of *Agrobacterium tumefaciens* Strains and Ti-plasmids for the Construction of the Most Efficient Binary Vector System.

Kim, Mi Suk* and Woong Seop Sim
Department of Biology, Korea University

The purpose of this study is to obtain the most efficient combination of *Agrobacterium tumefaciens* strains and Ti plasmids for transforming dicotyledonous plants. Ti plasmid-curing *A. tumefaciens* A136 and KU12C3 were transformed with four kinds of Ti plasmids, pTiBo542, pTiA6, pTiKU12 and pTiAch5, respectively. The stems of 28 species of dicotyledonous plants were then inoculated with these transformants and examined for crown gall formation. The results are as follows : first, the different combination of *A. tumefaciens* strains and Ti plasmids showed quite a difference in terms of the crown gall formation. Second, *A. tumefaciens* KU12C3 showed wider host range than A136. Third, the strains harboring pTiBo542 had wider host ranges than strains containing any other Ti plasmid vector.

In conclusion, *A. tumefaciens* KU12C3 harboring pTiBo542 is the most efficient combination for transforming dicotyledonous plants.