(W-III-3) :

T-DNA INSERTIONAL MUTAGENESIS

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Nowadays different transformation systems for higher plants are available, of which the most efficient is probably the T-DNA vector system derived from the Ti-plasmid of *Agrobacterim* tumefaciens. The T-DNA is a unique insertional element that is integrated into the plant nuclear genome after transfer from agrabacteria. All the results available indicate that these insertions are random and stable. Thus, T-DNA border sequence serves as a mutator via interruption of the plant genome and as a tag for isolation of the interrupted sequences by insertion sequences linked to the flanking genome DNA.

However, many insertions will not cause gene inactivation, because of the large proportion of repetitive DNA in most higher plant species. Since *Arabidopsis*, due to its small genome size and excellent genetics, has become a model for plant molecular biology, the possible application of gene tagging techniques to this plant was explored.

To detect and isolate T-DNA insertions in plant genes, gene fusion techniques were developed. We constructed a Ti-plasmid-derived vector containing a GUS reporter gene devoid a promoter(pOST 2002). The expression of this reporter depends on the fromation, by integration, of an adequate fusion with a plant gene.

Here we describe the isolation via T-DNA tagging and the characterization of the isolated gene and a new vector for the gene tagging. New improved construct(pOST 2005) carrying two plant selectable marker genes and a bacterial selectable marker gene. a bacterial replicon and promoterless reporter gene linked to the right integration site of the T-DNA will be used to induce and identify transcriptional or translational plant gene fusions and to rescue mutated plant genesin *E.coli*. Now we are constructing transgenic lines with this vector in *Arabidopsis*.

(W-III-4) :

SEARCH FOR PLANT HOST FACTORS INTERACTING WITH CUCUMBER MOSAIC VIRUS PROTEINS USING YEAST TWO-HYBRID SYSTEM

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This study focused on searching for plant host factors interacting with CMV proteins using yeast two hybrid system. Protein-protein interaction mechanism is regarded as an important factor in almost all of the biological phenomena and yeast two-hybrid system has a merit in finding the interacting proteins