(05-1-47)

Isolation and Characterization of Gene Encoding Methyl-CpG-Binding Domain (MBD) Protein in Cytoplasmic Male-Sterile (CMS) Line in Red Pepper (*Capsicum annuum* L.)

Keun Hyang Lee, Seon Young Lee, Jin Heui Park, Kwon Kyoo Kang

Department of Horticulture, Hankyong National University, 67 Seokjeong-dong, Ansung city, Kyonggi-do 456-749, South Korea

Objectives

To identify the genes involed in the development of cytoplasmic male-sterile (CMS) line in red pepper, we applied a differential hybridization method using mRNA from male fertility and male sterile flower of pepper respectively. Thus, we have isolated and characterized a methyl-CpG-binding domain (MBD) gene encoding MBD protein.

Materials and Methods

1. Materials

Red pepper (*Capsicum annuum L.*) of male sterile and male fertile line

2. Methods

Differential hybridization, Sequence analysis, Southern blot, Northern blot

Result and Discussion

Differential hybridization (DH) is a method for identifying differentially expressed gene in eukaryotic cells. The mRNA is synthesized with Not I(dT) primer and ligated Pst I adaptor to both sides of synthetic cDNA. DH was employed to identify the genes inducing cytoplasmic male-sterile (CMS) in flowers. We screened MBD gene from mRNA of CMS line. Southern blot analysis showed that one copy were existed in red pepper. Northern blot analysis showed that the gene was expressed specially in flower, fruit of CMS line. We considered the gene encoding MBD protein, which considered to be key components in DNA methylation mediated transcriptional silencing.

*Corresponding author : Kwon Kyoo Kang, Tel : 031-670-5104, E-mail : kykang@hnu.hankyong.ac.kr