(O3-04)

Isolation of a Rice c/DRE Binding Factor cDNA and Development of CBF Transgenic Rice

So-Hyeon Baek*, Chun-Sun Seo, Woon-Chul Shin,
Hyeon-Jung Kang, Hyun-Soon Kim[1], Kwang-Geun Park[1], Chung-Kon Kim
Honam Agricultural Research Institute, NICS, RDA, [1]Research & Development Bureau, RDA

Productivity of agricultural crops is greatly affected by environmental stresses such as high salinity, low temperature, drought. This study was conducted to isolate a salt tolerant gene and to develop salt tolerant rice for reclaimed-saline areas through biotechnology. A rice CBF (c/DRE binding factor) cDNA was isolated from rice (cv Nipponbare) using RT-PCR. The full-length cDNA of the CBF gene consists of 838 nucleotides and 274 amino acid residues. The *OsCBF4* share from 33 to 49% identity of deduced amino acid sequence with different CBFs. Real-Time PCR analysis revealed that the expression of *OsCBF4* was markedly induced under salt and cold treatment more than under normal. The rice *OsCBF4* gene was expressed under salt and drought conditions similar to rice *OsDREB2A*. In order to develop salt tolerant rice using CBF4 gene, transgenic rice plants containing the rice *OsCBF4* gene were obtained via *Agrobacterium*-mediated transformation. Multiplied calli were cultured on shoot induction medium. After 4 weeks, phosphinothricin resistant shoots were obtained from the calli on the selection medium. Eighty regenerated plantlets were obtained and the stable incorporation of the rice *OsCBF4* gene into rice genome was confirmed by PCR and Southern analyses. The stable expression of introduced genes was also validated by northern analysis in T_0 plants. The transgenic rice plants can be used to examine the role of genes under abiotic stresses.
* corresponding author: Tel. 063-840-2168, e-mail: shbaek@rda.go.kr

(O3-05)

Mass Production of Siberian Ginseng (*Eleutherococcus senticosus*) Plantlets by the Temporary Immersion Culture System

je-wook Woo, Eun-hee Kim, Soon-Kee Sung*

Appled Biotechnology Team, Dongbu Advanced Research Institute, Daejeon 305-708, Korea

Siberian ginseng (*Eleutherococcus senticosus*) is a useful medicinal woody plant that is distributed throughout the cold regions of northeast Asia.
An efficient regeneration procedure was established using temporary immersion (TI) bioreactor via somatic embryogenesis of zygotic embryo extracted stratification treated seeds.
Zygotic embryo of *E. senticosus* cultured on Murashige and Skoog's (MS) medium with 2,4-D produced somatic embryos directly from the surface of matured embryo without