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Identification of N-terminal 21 Amino Acid Region of Soybean
(*Glycine max*) *SLTI25* Encoding Ribosomal Protein Genes
S6 for Chloroplast Targeting

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The suppression subtractive hybridization (SSH) was used to isolate low temperature stress inducible genes from soybean. Functional Analysis of stress inducible genes *SLTI25* showed high homology with genes encoding Ribosomal protein S13. The full-length with intron of *SLTI25* is 1,858 bp containing 5 exon and 6 intron. The full-length cDNA of *SLTI25* is 742 bp contained an open reading frame (ORF) consisted 151 amino acid (aa). The derived amino acid sequence showed the highest identity of 95% with ribosomal protein S13 from *P. ginseng* (BAA96366). *SLTI25* gene showed one copy number in the soybean genome using Southern blot analysis. The expression of *SLTI25* gene during low temperature stress, salt, wounding, ABA, and drought showed various induction. Wounding is early induction and LT, salt, ABA are late induction. Cellular localization of *SLTI25* (full amino acids) is chloroplast, 21 amino acids at N-terminal is cytosol, and the reminder 130 amino acids is cytosol.

Key words: Soybean, low temperature, ribosomal protein, GFP

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Inhibitory Effect of Hwang-Dae-San (HDS) Methanol Extract on PMA-
induced MMP-9 Expression in MCF-7 Human Breast Cancer Cells

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In this study, methanol extract of Hwang-Dae-San(HDSM) was examined for its potential inhibitory effect on PMA-induced MMP-9 expression in MCF-7 human breast cancer cells. We found that HDSM dramatically inhibits PMA-induced MMP-9 expression in gelatin zymography. Also, the Matrigel invasion assay showed that HDSM effectively inhibits PMA-induced migration of MCF-7 cells as compared with the control, not treat with PMA, in a dose-dependent manner. Moreover, treatment of MCF-7 cells with HDSM decreased the levels of PMA-stimulated MMP-9 mRNA expression in a concentration-dependent manner.

These results suggest that HDSM could be used as potential anti-tumor agent for anti-metastasis and anti-migration suppressing PMA-induced cancer cell invasion through the inhibition of MMP-9 gene expression level.

Key words: MMP-9, MCF-7 Cells, Hwang-Dae-San, invasion