

더덕에서 Low Temperature And Salt Responsive Protein(*CILTSR*) 유전자의 분리

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Isolation of Low Temperature And Salt Responsive Protein(*CILTSR*) Gene from *Codonopsis lanceolata*

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ABSTRACTS

Outdoor algal cultures are exposed to a variety of changes in environmental conditions. Those changes are taking place in two different time scales. One is the circadian cycle which include variations in light and temperature in a 24 h cycle. The other one is a seasonal cycle that varies based on the climatic and geographical location of the particular habitat in which the algae are growing. High salinity stress severely limits the growth and agricultural productivity of crops. However, plants are able to adapt themselves to such environmental stress by balancing intracellular metabolites through osmotic stress perception and signaling. To adjusting against salinity, osmolytes are accumulated either in the cytoplasm or vacuole to increase the osmotic pressure of the cell.

C. lanceolata, a perennial herb, belongs to Campanulaceae. Its root is used a good source of a wild vegetable as well as a medicinal plant. In this study we analyzed 1,000 ESTs (expressed sequence tags) from *C. lanceolata* and isolated Low Temperature And Salt Responsive Protein gene(*CILTSR*) which related in abiotic stress. In this study, we characterized the *CILTSR* gene by nucleotide sequencing and sequence analysis. The *CILTSR* characterized in this work possess an open reading frame of 165 bp encoding a deduced 54 amino acid polypeptide. *CILTSR* protein sequence shared the strong homology 85% with *A. thaliana* (AAF26090). The other Low Temperature And Salt Responsive protein shared a homology of 84% with

L. chinensis (BAD34659), 82% with *P. trifoliata* (AAQ84111), 79% with *S. tuberosum* (BAC23051), 78% with *O. sativa* (XP479247), 74% with *H. vulgare* (CAC37082), 71% with *h. paten* (AAR87656), 51% with *P. glaucum* (AAV88601), 50% with *B. napus* (AAV35467). In the phylogenetic analysis, *CILTSR* was closer with Low Temperature And Salt Responsive protein of *Poncirus trifoliata* (AAQ84111).