Abstract

Salinity stress is a worldwide main reason of decrease in agronomy yield. Deferent strategy use by higher plant to exclude overdose of sodium ion from cytoplasm. One of the major form is sodium transportation in vacuole using anti/porter proteins like SOS1. Salinity Overlay Sensitive 1 is one of the main plasma membrane anti/porter protein which cause resistance to high dose of sodium chloride. Plant with no copy of SOS1 genes have sensitivity to sodium ion and aggregated more sodium ion related to wild type in cytoplasm. In This experiment, we evaluated relative gene expression of SOS1 genes in three canola cultivars, Hayolla 401, Hayolla 308 and RGS003, response to three doses of NaCl, 150,300 and 450 mM. The experiment was carried out in institute of biotechnology of University of Zabol in 2013. Canola SOS1 sequence were aligned to other SOS sequence species and exon junction were determined. Separated exons strategy was used to primer design. After real time qPCR, melting curve analysis show only specific target genes, SOS1 and GAPDH as internal control, were amplified. Pfaffle relative gene expression method was use to calculated fold changes for SOS1 gene related to housekeeping gene. Fold change result showed salinity stress in all cases almost up-regulated SOS1 gene however these overexpress only in Hayolla401 with 450 mM NaCl was statistically significant. Also 50% down-regulation in Hayoll401 SOS1 expression was observed when 150 mM NaCl was treated. This result with up-coming planed experiments potentially can use to early evaluation of canola salt resistance cultivars.

Key words: plasma membrane, Salinity stress Na^+/H^+ antiporter gen

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Graduate School
Faculty of Agriculture
Department of Plant Breeding
The Thesis Submitted for the Degree OF Master of Science
(In the field of Plant breeding)

Evaluation of gen expression of plasma membrane Na+/H+ antiporter under salinity stress in *Brassica napus*

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September 2013