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DNA Sequence Variation of Candidate Gene for Salt Tolerance in Soybean Mutant

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[Abstract]

Soil salinity is a major factor that reduces crop yields. The amount of soil affected by salinity is about 83 million hectares (FAO 2000), which is increasing due to the effects of climate change. In soybean [*Glycine max* (L.) Merr.], nutritional properties such as protein, starch, and sucrose content together with biomass and yield tends to reduce due to excessive salt. As a result of QTL mapping using the 169 F_{2:3} population from the KA-1285 (salt-tolerant) x Daepung (salt-sensitive) in a previous study, two major QTLs (Gm03_39796778 and Gm03_40600088) related to salt tolerance were found on chromosome 3. In this study, the CDS region of the Gmsalt3 gene was analyzed using the ABI 3730xl DNA Analyzer (Macrogen, Korea). The sequence of Gmsalt3 gene in KA-1285 was compared with Williams 82.a4.v1 and PI483463 (*Glycine soja*). Two transversions were found at exon6 in KA-1285 and PI483463. Currently, whole genome sequencing and variation analysis using the Illumine Novaseq 6000 machine (Illumina, USA) are in progress. The results of this study can provide useful molecular markers for the selection of salt-tolerant soybeans and can be used as basic data for future salt-tolerant gene research.

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