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## **An investigation on regulation on trichome metabolism related genes against salt stress in Soybean (*Glycine max L. Merr.*)**

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Plants have species-specific salt tolerance capacities. Induction of antioxidant defences, accumulation of osmolytes, vacuolar localization of Na<sup>+</sup> are the components of salt tolerance mechanisms. Structural adaptations like changes in leaf size, stomatal opening/closure and modifications of leaf anatomy against salinity stress also play important role in salt tolerance. The trichome metabolism related genes and their molecular mechanisms were identified in Arabidopsis. The molecular mechanism of trichome formation in the epidermis is under control of *GLABROUS 1 (GL1)*, *GLABROUS 3 (GL3)* and *TRANSPARENT TESTA GLABRA 1 (TTG1)* genes. The aim of this study is to determine the regulation of trichome-metabolism-related genes against salt stress in soybean (*Glycine max L. Merr.*) plants. The 14-day-old Ataem-7 and S04-05 soybean seedlings were subjected to 0, 50, 100 and 150 mM NaCl stress. qRT-PCR analysis demonstrated an induction of the soybean orthologs of *GL2* and *GL3* genes in soybean plants after 50, 100 and 150 mM NaCl treatments in both varieties. While the expression level of *TTG1* ortholog gene was negatively affected in both soybean varieties under different concentrations of salinity, *GL1* ortholog gene expression profile differed as a result of changing salt concentrations in both varieties with respect to control plants. *GL1-GL3* and *TTG1* ortholog genes are also important for trichome formation for soybean. According to our results, *GL1* seems to be the main regulatory gene for initiation of trichome in two soybean varieties under salt stress.

### **Biography**

Özge Çelik has completed his PhD from Istanbul University. She is working in Molecular Biology and Genetics Department in Istanbul Kultur University as an Assoc. Prof. She is working on abiotic stress tolerance in plants, mutation breeding and plant molecular biology. She has published 16 papers in reputed journals and has been serving as an editorial board member of reputed. She has published one scientific book and a chapter in a reputed book in the field of Plant Science.

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