

Analysis of Genes Activated by Salt and ER Stress in bZIP17 and bZIP28 Gene Transgenic Potato Plants

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Potato (*Solanum tuberosum* L.) is susceptible to various environmental stresses such as salt, high temperature, and drought. Especially, potato tuber growth is greatly affected by drought that causes not only yield reduction but also loss of tuber quality. Since unpredictable global weather changes cause more severe and frequent water limiting conditions, improvement of potato drought tolerance can minimize such adverse effects under drought and can impact on sustainable potato production. Genetic engineering can be utilized to improve potato drought tolerance, but such approaches using endogenous potato genes have rarely been applied. We were obtained AtbZIP28 gene transgenic potato plants. It is identified transcript levels at various stress conditions, polyethylene glycol (PEG), NaCl, (ABA). Also, For identification to regulate ER stress response genes in AtbZIP28 gene transgenic potato plant, we screened seven potato genes from RNA-seq analysis under TM treatment. Five and two genes were up- and down-regulated by TM, respectively. Their expression patterns were re-examined at stress agents known to elicit TM, DTT, DMSO and salt stress.

Keywords: drought, RNA-seq, transgenic plant

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