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## **AtSZF1, a single zinc finger domain protein, regulates ABA response in *Arabidopsis***

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### **Objectives**

We have screened T-DNA insertion mutant pools and isolated genes involved in ABA response in *Arabidopsis*.

### **Materials and Methods**

#### 1. Material

Plant-*Arabidopsis thaliana* plants (ecotype C24)

Tagging vector-pSK1015 (provided by Prof. Detlef Weigel)

#### 2. Methods

*Arabidopsis* plants were mutagenized with an *Agrobacterium tumefaciens*-mediated T-DNA transformation using the activation tagging vector pSK1015. Seeds from T2 plants which are resistance to bialaphos (30mg/L) were used for screening mutants sensitive to ABA..

### **Results and Discussion**

The phytohormone abscisic acid (ABA) regulates dormancy, growth of seeds, and abiotic stress responses. We isolated a mutant that showed extremely sensitive to exogenous ABA, but not NaCl, glucose, and sucrose. Genetic analysis indicated it to be a single locus, recessive mutation. TAIL-PCR analysis of this mutant indicated that a T-DNA was inserted in the second exon of *Arabidopsis* gene encoding SZF1, a single zinc finger domain protein. Seedlings harboring additional mutations in AtSZF1, *szf1-2*, *szf1-3*, *szf1-4* and *szf1-5* from SALK stock center exhibited similar phenotypes with *szf1-1*, and these were suppressed when 35S::SZF1 was introduced into *szf1-1*. Consistent with AtSZF1 being a putative transcription factor, a SZF fused with green fluorescent protein (GFP) was localized to the nucleus. The expression of RD29A and other stress responsive genes were highly induced in the *szf1* mutant compared to wild type plants. Furthermore, the *szf* plants are more sensitive to drought stress. Together these results suggest that AtSZF1 is an important component of ABA mediated stress response of plants.

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