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Data Article

Phenotypic characterization of an Arabidopsis T-DNA insertion line SALK_063500

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ABSTRACT

In this article we report the identification of a homozygous lethal T-DNA (transfer DNA) line within the coding region of the At1G05290 gene in the genome *of Arabidopsis thaliana* (Arabidopsis) line, SALK_063500. The T-DNA insertion is found within exon one of the AT1G05290 gene, however a homozygous T-DNA allele is unattainable. In the heterozygous T-DNA allele the expression levels of AT1G05290 were compared to wild type Arabidopsis (Col-0, Columbia). Further analyses revealed an aberrant silique phenotype found in the heterozygous SALK_063500 plants that is attributed to the reduced rate of pollen tube germination. These data are original and have not been published elsewhere.

Specifications Table

Subject area	*Biology*
More specific subject area	*Plant biology*
Type of data	*Tables, Graphs, Figures*

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How data was acquired	*DNA-PCR, Quantitative Realtime PCR (qPCR), Plant phenotypes, Pollen tube germination assay, Image J analyses*
Data format	*Raw, Analyzed*
Experimental factors	*Col-0 (Columbia) and SALK_063500 Arabidopsis plants*
Experimental features	*DNA-PCR was employed to identify the T-DNA insertion in SALK_063500. AT1G05290 expression levels were examined with qPCR. Both silique and pollen tube germination phenotypes were recorded.*
Data source location	*Gainesville, Florida, USA*
Data accessibility	*Data is within this article.*

Value of the data

- T-DNA insertion lines provide an important resource for genetic analyses in plant research, and SALK lines are the most commonly used T-DNA insertion lines. Therefore assessments of phenotypes observed in SALK lines are valuable assets for advancing our understanding of basic plant biology.
- Documentation of the phenotype of the SALK_063500 line will make the plant community aware of the role AT1G05290 plays in pollen development, thereby furthering research in this field.
- The data presented could provide insights into understanding the molecular mechanisms of male sterility in plants.

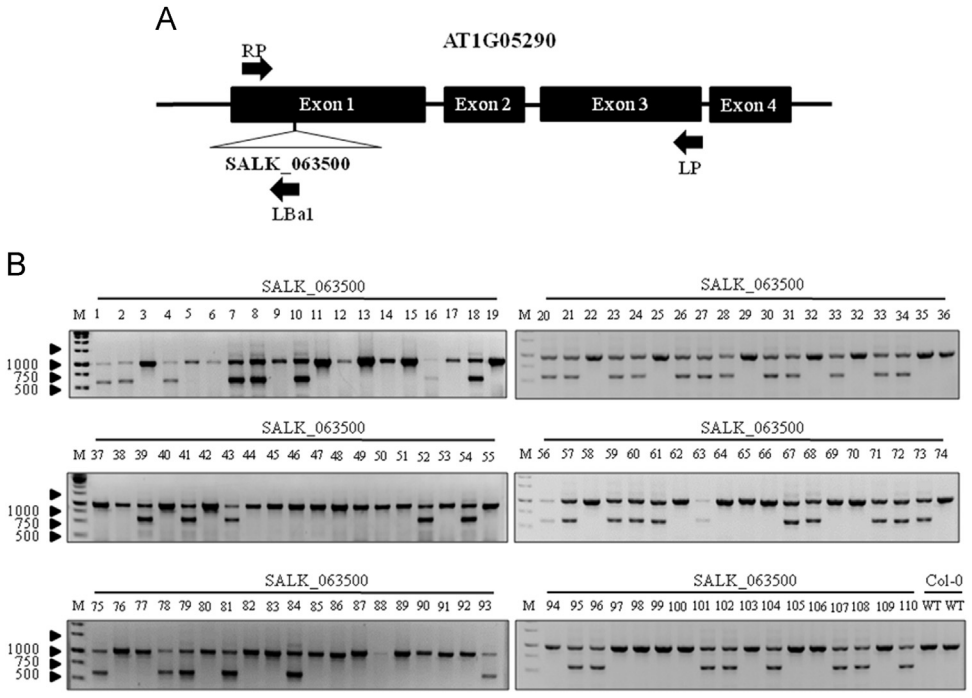

Fig. 1. T-DNA insertion in the exon1 of AT1G05290 in SALK_063500. (A) Gene structure of AT1G05290. The T-DNA position is +127 bp after the transcription start site. Primers used to screen the SALK_063500 line, indicated by black arrows RP, LBa1, and LP, and were derived from the SALK T_DNA primer design web tool (http://signal.salk.edu/tdnaprimers.2.html). (B) PCR amplification of wild type allele band using forward (RP), reverse (LP) and T-DNA band (LBa1). 110 randomly selected SALK_063500 seedlings and two Col-0 wild type (WT) seedlings were used in search for a homozygous T-DNA insertion line, none were identified. Homozygous wild type allele are seen as single bands at 991 bp whereas heterozygous individuals have double bands, with a single wild type allele band at 991 bp and a T-DNA allele band at around 440–740 bp. All primer sequences are listed in Table 1.