



## Analysis of differential gene expression during floral bud abortion in radish (*Raphanus sativus* L.)

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**ABSTRACT.** Radish floral bud abortion (FBA) is an adverse biological phenomenon that occurs during reproduction. Although FBA occurs frequently, its mechanism remains unknown. To elucidate the molecular mechanism underlying FBA, we detected gene expression differences between aborted and normal buds of radish using cDNA-amplified fragment length polymorphism (AFLP) and real-time polymerase chain reaction (real-time PCR). A total of 221 differentially expressed transcript-derived fragments (TDFs) were detected by 256 cDNA-AFLP primer combinations, of which 114 were upregulated and 107 were downregulated in the aborted buds. A total of 54 TDFs were cloned and sequenced. A BLAST search revealed that all TDFs have homologous sequences and 29 of these corresponded to known genes, whose functions were mainly related to metabolism, stimulus response, transcriptional regulation, and transportation. Expressions of 6 TDFs with different functions were further analyzed by real-time PCR yielding expression profiling results consistent with the cDNA-AFLP analysis. Our results indicated that radish FBA is related to abnormalities in

various physiological and biochemical plant processes.

**Key words:** Radish; Floral bud abortion; Gene expression; cDNA-AFLP; Real-time PCR