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Isolation of fertility-related genes of multiple-allele-inherited male sterility in *Brassica rapa* ssp *pekinensis* by cDNA-AFLP

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ABSTRACT. To better understand the molecular mechanisms of multiple-allele-inherited male sterility in Chinese cabbage (*Brassica rapa* ssp *pekinensis*), differentially expressed genes in fertile and sterile plants must be isolated. We used cDNA-AFLP analysis to isolate differentially expressed genes in fertile and sterile buds of the two-type line, AB01. Sixteen high-quality sequences were generated, 11 of which were up-regulated in fertile buds, and five of which were up-regulated in sterile buds. Based on BLAST screening and functional annotation, these genes have homology with genes encoding known flower- or bud-specific proteins, metabolism-related proteins and cell-structure proteins. In addition, the full-length cDNA sequences of the *actin* gene were cloned from the cabbage plants by RACE and used as an internal standard for semi-quantitative reverse transcription-PCR. Expression of three flower- or bud-specific differentially expressed transcript-derived fragments in fertile and sterile buds was examined using RT-PCR; the expression patterns of these genes were similar to the patterns observed in the cDNA-AFLP analysis.

Key words: Chinese cabbage; Male sterility; Fertility-related genes; cDNA-AFLP

