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An Arabidopsis lost of function mutant *edal*, the ubiquitin-conjugating enzyme (E2) homologue, shows disease resistance against phytopathogens

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A T-DNA tagging mutant showing resistance against *Alternaria brassicicola* was screened from 11,000 T-DNA tagged lines. The mutant was named as *edal*, enhanced disease resistance against *A. brassicicola*. The T-DNA is inserted at the C-terminal region, 32 base pairs upstream of the stop codon in the MUG 13.6 gene at chromosome 5 (GenBank AB005245). The MUG 13.6 clone has a predicted open reading frame (756 bps) and six exons and five introns. The ORF of *edal* encoded a homologue of an ubiquitin-conjugating enzyme (E2) gene. To determine copy number of the T-DNA and *EDAI* gene at the mutant, we conducted Southern blot analysis by using the probes of the *EDAI* gene or *npt II* gene incorporated in T-DNA tagging vector. Only single copy of both T-DNA and *EDAI* gene was detected in the *edal* mutant. *Gus* activity showed that *EDAI* gene was significantly expressed in response to environmental stress (wounding and fungal infection) and plant growth regulators such as abscisic acid and jasmonic acid. These results suggest that the *edal* mutant appears to be regulated by JA and ABA dependent defense pathway. In addition, E2 might act as a negative regulator in the defense signal transduction pathway of Arabidopsis.

Keywords: T DNA tagging, disease resistant, ubiquitin-conjugating enzyme