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Study of T-DNA Tagged Mutant which Affects Leaf Development-related Gene Expression in Arabidopsis.

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Plants are composed of three basic organs, namely, roots, stems and leaves. The leaves are modified to floral organs, such as petals, stamens and carpels. Thus, the leaf is a key organ for understanding plant morphogenesis. Arabidopsis C24 plants expressing RD29::LUC were used for *A. tumefaciens*-mediated T-DNA insertion/activation mutagenesis (pSKI015 vector). We screened the T-DNA insertion mutant pools to identify the genetic loci that affect cell signaling for inducing target gene, and isolated a mutant plant which has narrow shape of leaf. The cell numbers of sub-epidermal palisade layer were significantly less in mutant plant than wild type (C24 RD29A::LUC). We found it is recessive based on the F1 phenotype of backcross lines. The genomic fragment in the flanking region of T-DNA left border of mutant plants was isolated by thermal asymmetric interlaced PCR (TAIL-PCR) and was sequenced it. Database searches with the fragment sequence revealed that the T-DNA tag was inserted into c-terminal UTR region of ribosomal protein L17 (RPL17 ; At1g27400) gene on chromosome 1. We suggest that RPL17 is related to cell cycle, such as cyclinD, according to RT-PCR data and plays a role in regulator of cell proliferation/differentiation during plant organogenesis based on our phenotypic results.