Abstract

Root branching allows plants to explore rhizosphere, to gain efficiently water, mineral nutrients or enter in various biotic interactions. Initiation of lateral root formation is localized to pericycle cells, flanking the xylem poles of diarch vascular bundle in *Arabidopsis thaliana*. Right in these pericycle cells, there is the expression pattern of the gene trap line MGT180. In this theseis , I have provided the evidence that the expression pattern of MGT180 is related with *AT-HOOK MOTIF CONTAINING NUCLEAR LOCALIZED18 (AHL18; At3g60870). AHL18* belongs to a gene family of 29 transcriptional factors of *Arabidopsis*. *AHL18* has not been functionally characterized yet, the analysis of singlemutant *ahl18* and some others revealed no significant phenotype. However, one of doublemutants, E15, showed a significant phenotype. This phenotype was evident mainly in the aboveground part of plants, and was not corresponding to any phenotype of *AHL* mutation described so far. There is a known redundancy among some *AHL* genes, confirmed by crossing of *ahl18* and *ahl28* leading to E15 plant. Translation phusion *AHL18-mRUBY* and *AHL22-mRUBY* under native promotors should reveal, where these two related proteins act, and if they fiction in autonomous manner or not.

Key words

Arabidopsis thaliana, lateral root, AHL, pericycle