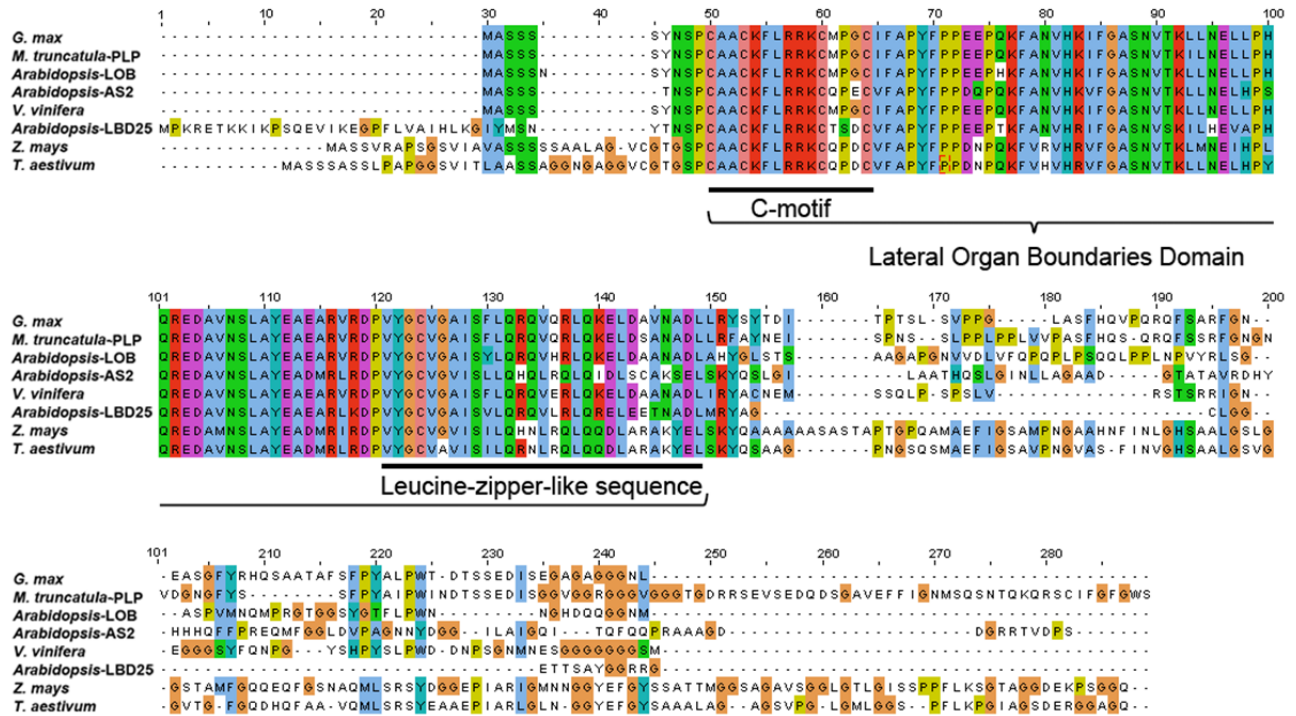
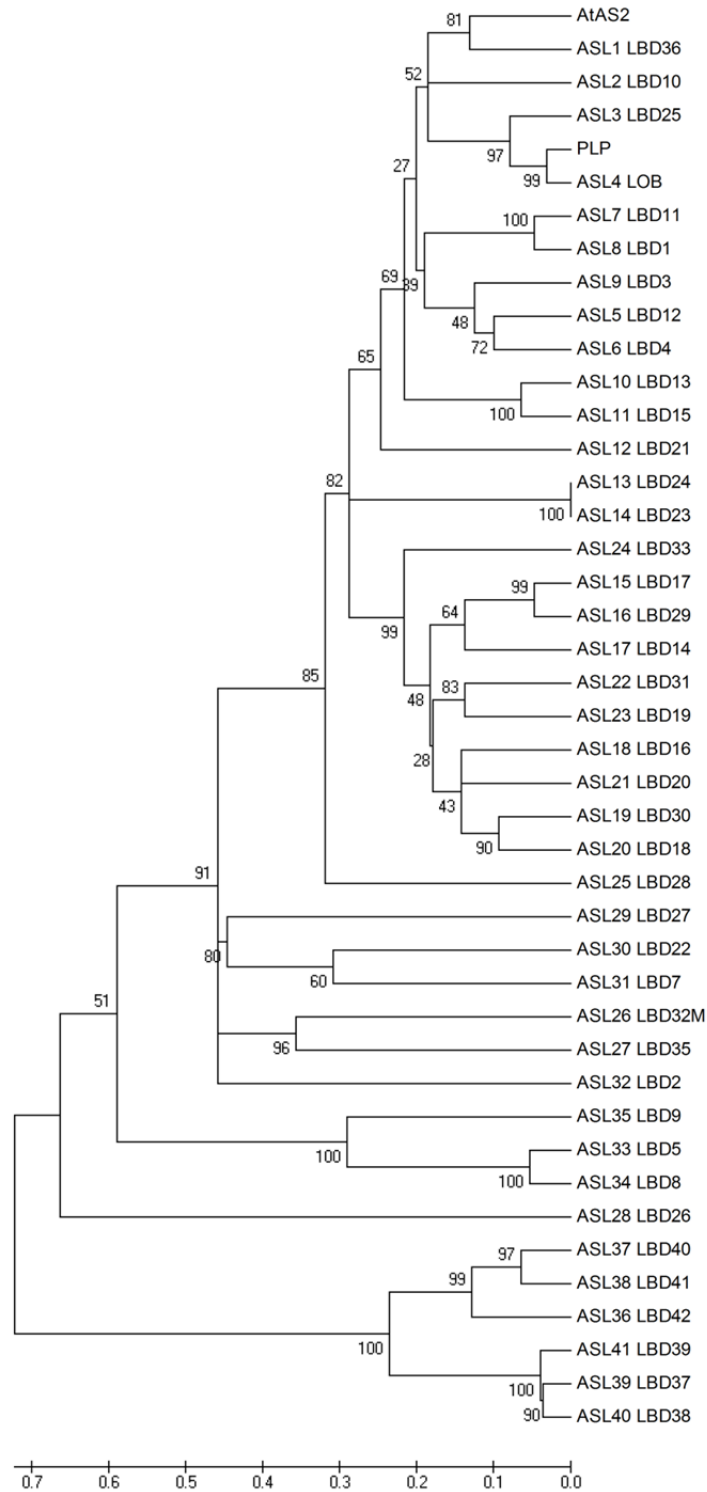


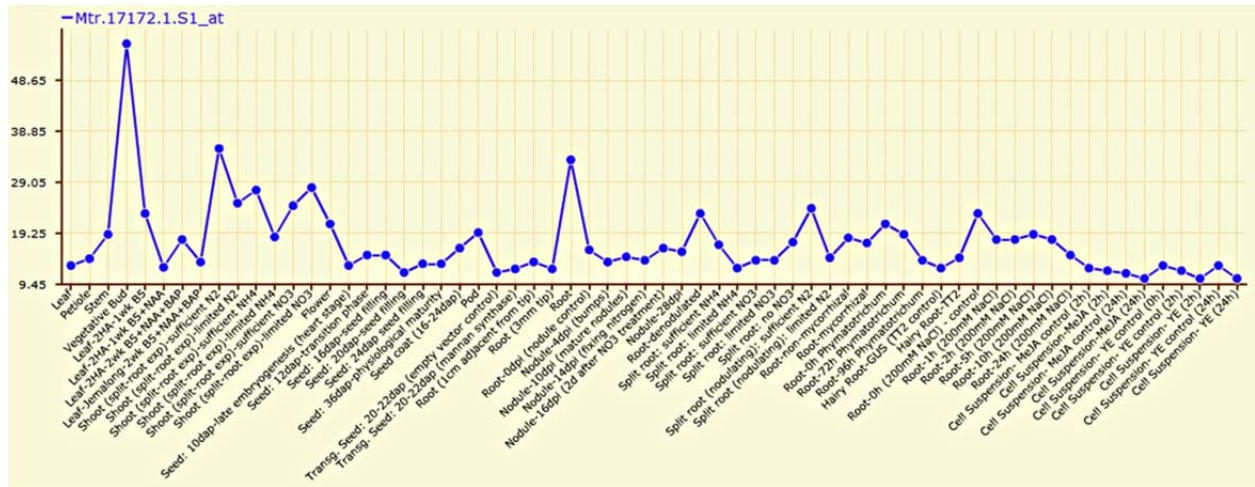
## Supporting Information Figs S1-S5



**Fig. S1** Alignment of amino acid sequences of PLP and other LOB proteins from *Glycine max*, *Vitis vinifera*, *Zea mays*, *Triticum aestivum* and *Arabidopsis*. The frame shows the conserved lateral organ boundary domain.

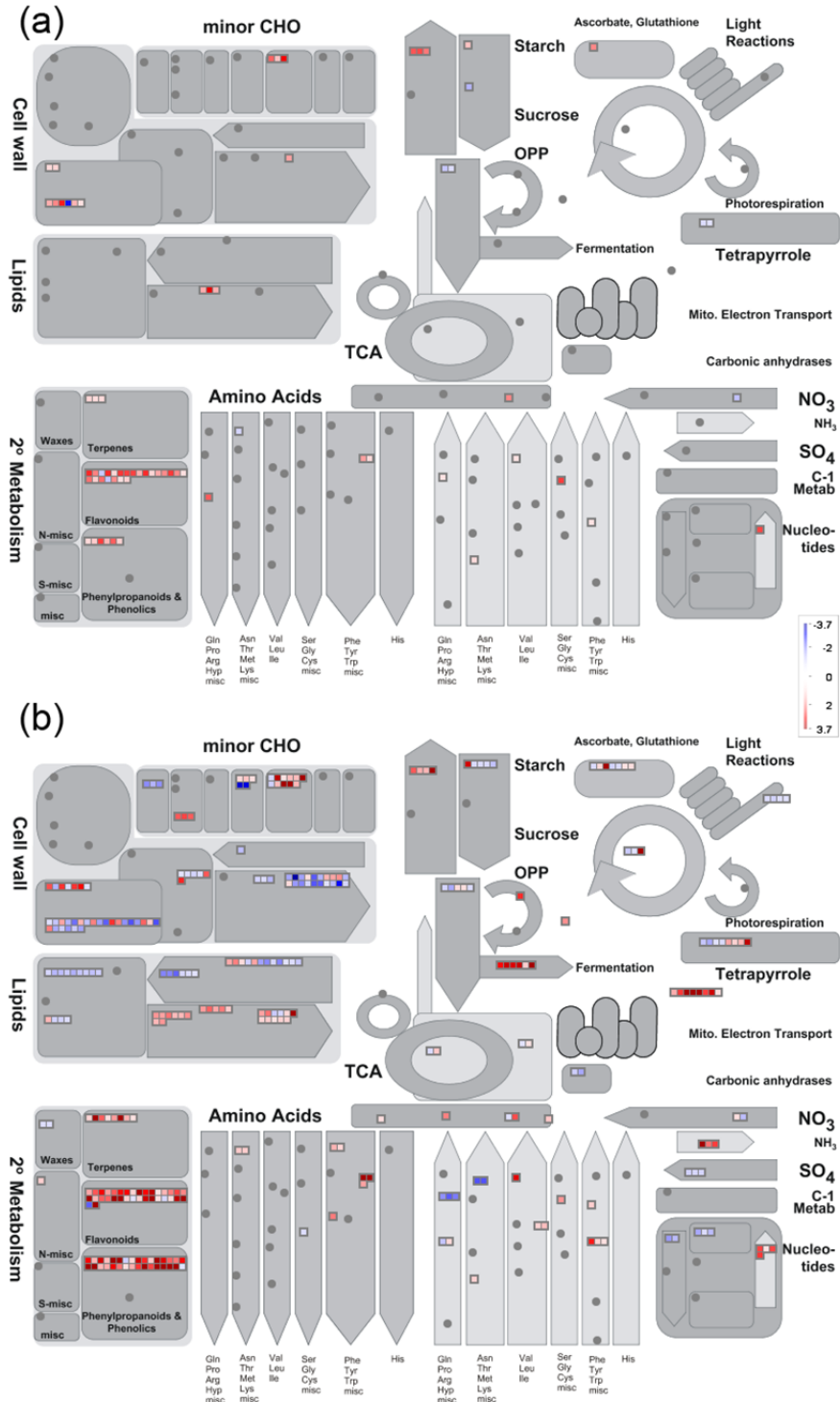


**Fig. S2** Phylogenetic tree of PLP and other members of the LOB domain gene family from *Arabidopsis*. PLP is evolutionarily closer to the ASL4/LOB (At5g63090).



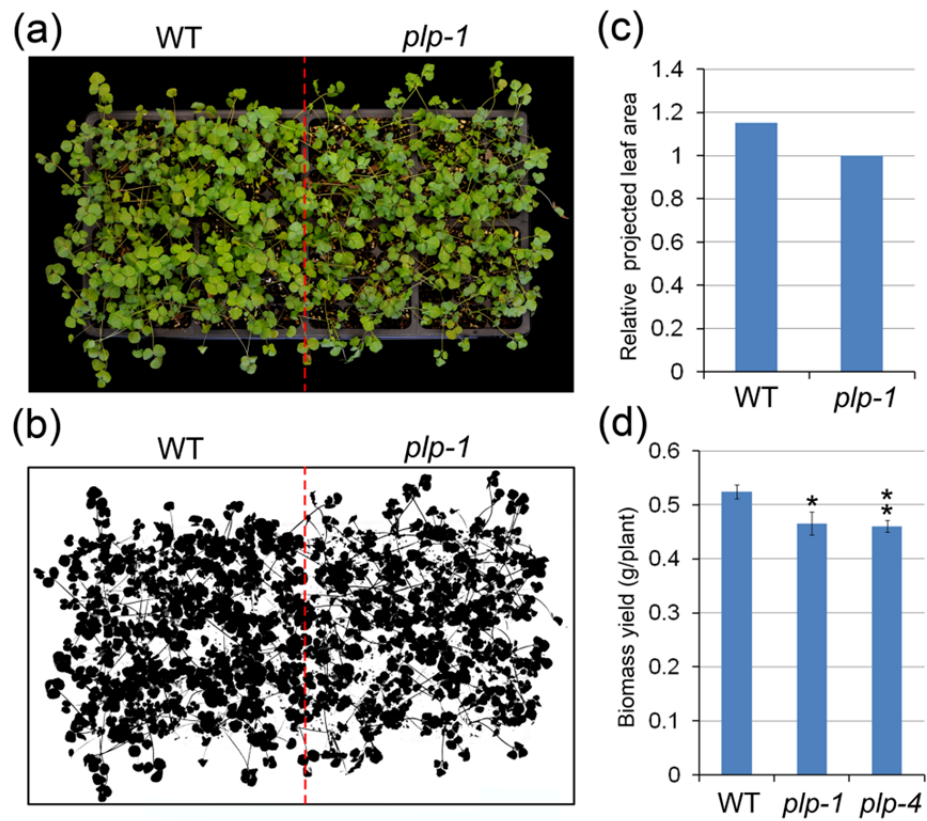
**Fig. S3** Expression profiling of the *PLP* transcripts.

The data for *PLP* (probe set *Mtr.17172.1.S1\_at*) is accessible at <http://bioinfo.noble.org/gen-atlas/>.



**Fig. S4** Differential expression of metabolic genes in the *plp* mutant.

Visualization of the genes at ZT6 (a) and ZT18 (b) with MapMan 3.5.1R2 using log<sub>2</sub>-transformed ratios of mutant divided by wild-type. Red, up-regulated genes; Blue, down-regulated genes.



**Fig. S5** Vegetative growth of wild-type and *plp* mutant plants.

(a) 48 three-week-old plants of wild-type (left) and *plp-1* mutant (right) are growing in a single tray. (b) Image of projected leaf area of wild-type and *plp-1* mutant plants in the same tray. (c) Relative projected leaf area of wild-type and *plp-1* mutant. (d) Average of fresh biomass yield of above ground part of wild-type, *plp-1* and *plp-4* mutant plants. Values are means  $\pm$  SE (n = 80). *P*-values: \*, < 0.05; \*\*, < 0.005.