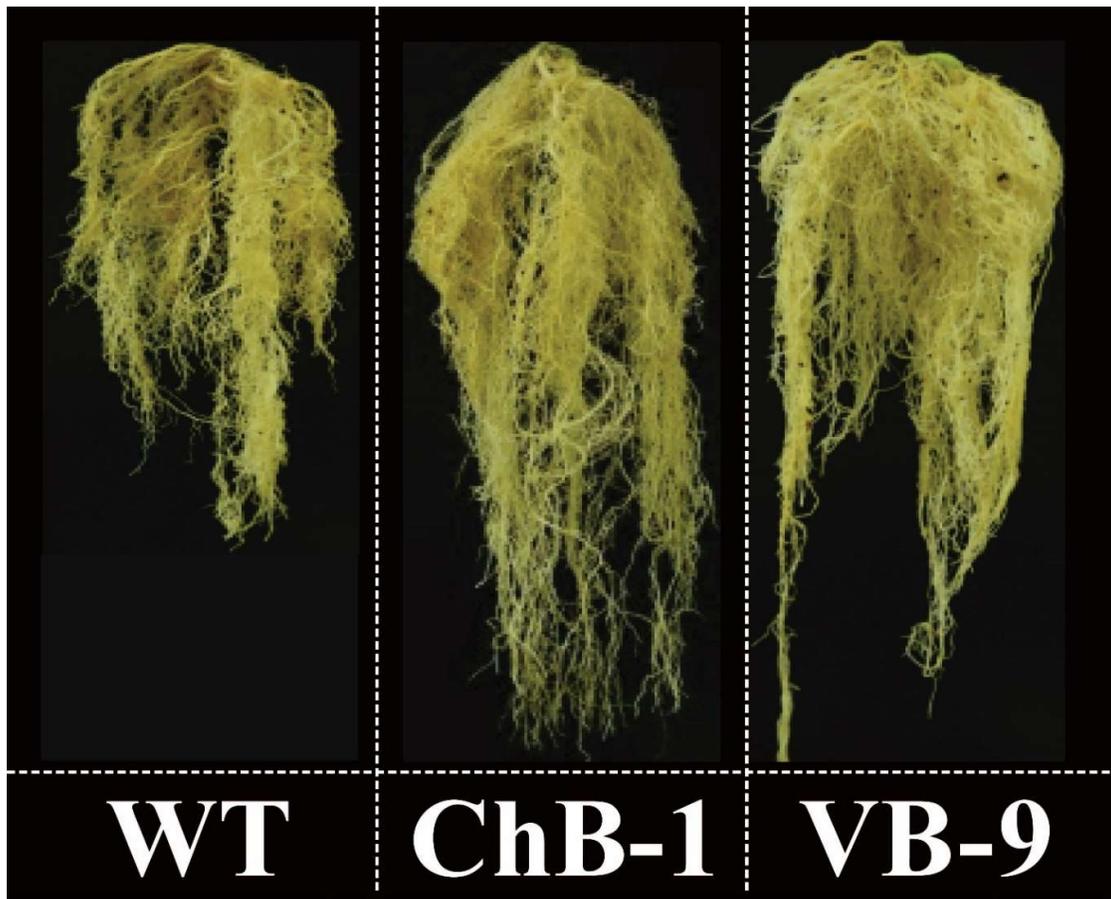
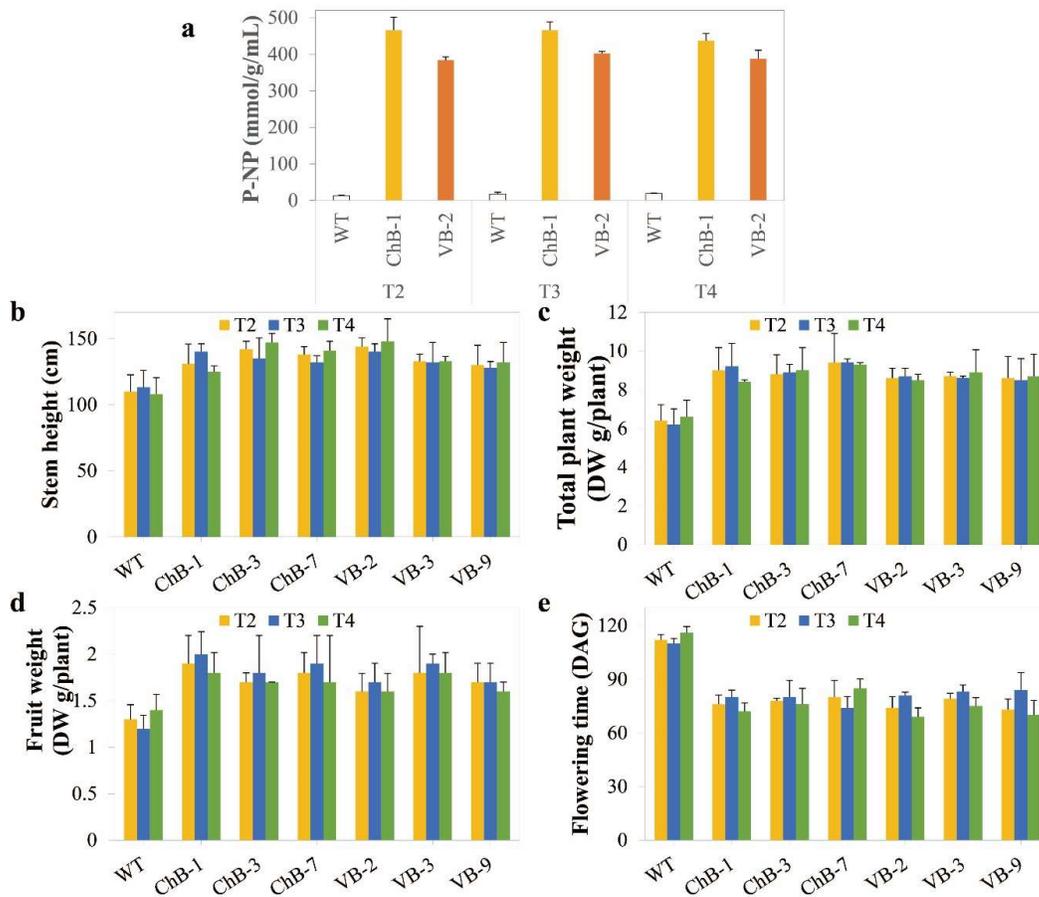


Supplementary Table S1: Functional role of MDH (EC 1.1.1.37).

Functional roles of MDH (EC 1.1.1.37)			
	Plants	Characteristic	References
Knock-down	Cotton	Reduce 30% fresh biomass weight	[1]
	Arabidopsis	Reduce 50% biomass weight	[2]
	Tomato	Reduce: 50% root length; 50% root dry weight	[3]
Overexpression	Cotton	Increase 20% fresh biomass weight	[1]
	Alfalfa	Increase 120% dry biomass weight; 100% roots dry weight	[4]
	Arabidopsis	Increase 70% dry biomass weight	[5]
	Tobacco	Increase 20% fresh biomass weight; 50% root growth rate	[6]

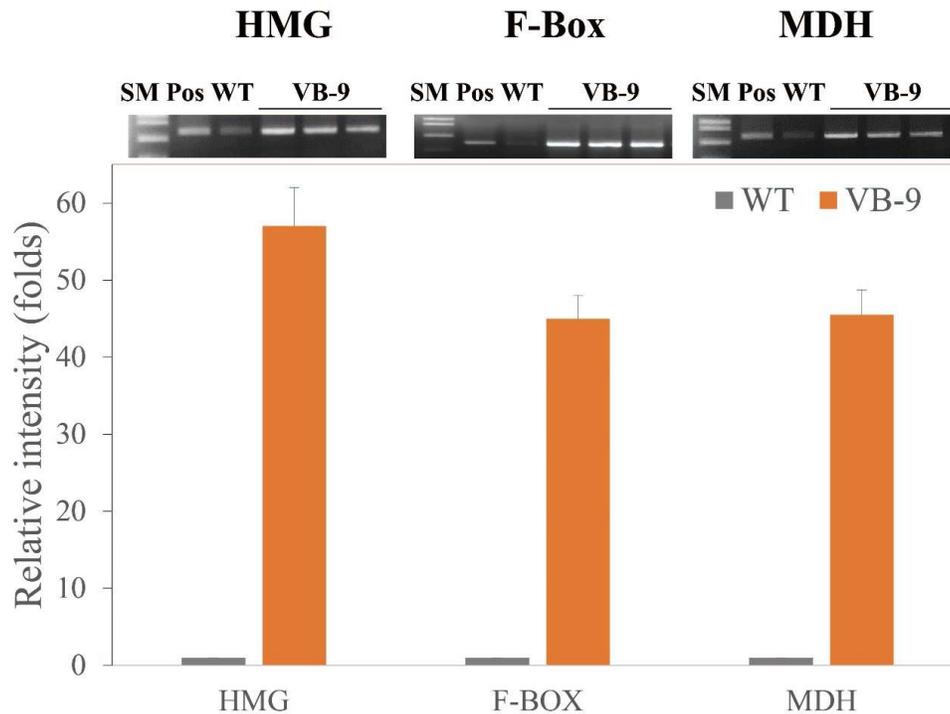


Supplemental Figure S1. Root development in the wild-type and T1 generation of transgenic tobacco plants overexpressing *T. maritima* BglB targeted to the chloroplasts and vacuoles after harvest.



**Supplemental Figure S2.** (a)  $\beta$ -Glucosidase enzymatic activities and (b-e) phenotype characteristics of the wild-type and transgenic tobacco plants overexpressing *T. maritima* BglB targeted to the chloroplasts and vacuoles (T2 to T4 generations).

## mRNA transcriptional expression levels



**Supplemental Figure S3.** Results of mRNA expression levels of HMG, F-Box, and MDH in the transgenic tobacco plants overexpressing *T. maritima* BglB targeted to the vacuole in comparison with those in the wild-type tobacco plants.

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