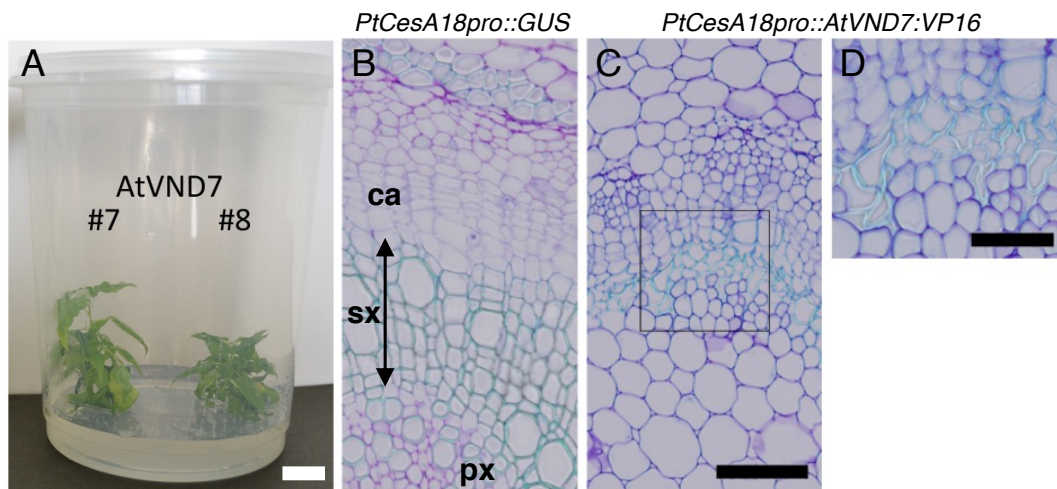


Supplementary Material

1 Supplementary Figure and Table

1.1 Supplementary Figure



Supplementary Figure 1. Histological observations of xylem tissues in *PtCesA18pro::AtVND7:VP16* aspens. (A) Transgenic aspens grown in a sterile half-strength Murashige and Skoog growth medium. Typical view of plants carrying the *PtCesA18pro::VND7:VP16* line 7 and 8. (B,C) Stem sections of *PtCesA18pro::GUS* (B) and *PtCesA18pro::AtVND7:VP16* (C) stained with toluidine blue. (D) Enlargement of the area indicated by the black square is shown in (C). px; primary xylem, sx; secondary xylem, ca; cambium. Bars = 2 cm (A), 50 μ m (B,C), 25 μ m (D). In *PtCesA18pro::AtVND7:VP16* xylem, no clear secondary xylem was not observed. Instead, the collapsed xylem vessel-like cells could be recognized at the position where secondary xylem should be found.

1.2 Supplementary Table

Supplementary Table 2. Primers used in this study.

For cloning		
PtCesA18p-Hind_F	aagcttaactagttcagtttttacaccgttttg	PtCesA18pro for GUS
PtCesA18p-Sma_R2	cccgggCAGATTCCATCATcttgcttattaccactt	PtCesA18pro for GUS
PtCesA18p-EV_F	gatatcaaggcttaactagttcagtttttacaccg	PtCesA18pro for SND1, VND7, MYB46
PtCesA18p-SND1_R	CTTATTATCAGCCATcttgcttattaccac	PtCesA18pro for SND1
PtCesA18p-SND1_F	gtggtataagcaagATGGCTGATAATAAG	SND1
SND1(-stop)_Avr_R	cctaggTACAGATAAATGAAGAAGTGGGTC	SND1
PtCesA18p-VND7_R	CATTATATTATCCATcttgcttattaccac	PtCesA18pro for VND7
PtCesA18p-VND7_F	gtggtataagcaagATGGATAATATAATG	VND7
VND7(-stop)_Avr_R	cctaggCGAGTCAGGGAAGCATCCAAGAGA	VND7
CesA18p-MYB46_R	CTCTGGCTTCCTCATcttgcttattaccac	PtCesA18pro for MYB46
CesA18p-MYB46_F	gtggtataagcaagATGAGGAAGCCAGAG	MYB46
MYB46(-stop)Avr_R	cctaggTATGCTTTGTTGAAGTTGAAGTAAA	MYB46
For real-time PCR		
PtELF4A uni	ACACAGTCTCAGCTACTCATGGTGA	
PtELF4A rev	ATTTATGACAAGGGACACTTGCTG	
VP16 R1	ACTCGAAGTCGGCCATATCCAGAG	
MYB46 RT F	CCTTGACCCACATACAAACCAACAA	
SND1 RT F	AGTTTCCTGACTCCAAGCAAACCTCG	
PttXCP RT-F	CGAAGACTTCAGTTACAGAGATGTGG	
PttXCP RT-R	CACCGTTGTTGACTATGAACTCG	
PttMYB003 RT-F	CCACATCCTCACCAAACGATAGTAC	
PttMYB003 RT-R	CGCCACTCACATCATATCGGTTA	
PttGT47A RT-F	CACTTGTGATCTCACACCCATG	
PttGT47A RT-R	CCAAAGTAGAACGCTGGAGTAGC	
PttCald5H RT-F	CCAATATAGGCAAGCCTGTGAATC	
PttCald5H RT-R	GATAGAGTCGATGAATCTATCAAGAGCC	
PttCesA18 RT-F	GGAATCCTGTCAATAGAGAAACGTA	
PttCesA18 RT-R	CAGAGATTCAAATGAAAGCATAGCT	
GUS-for	TTGATGTGCTGTGCCTGAACC	
GUS-rev	CCCTTTCTTGTTACCGCCAAC	
For genome check		
PtCesA18p-VND7_F	gtggtataagcaagATGGATAATATAATG	
PtCesA18p-SND1_F	gtggtataagcaagATGGCTGATAATAAG	
CesA18p-MYB46_F	gtggtataagcaagATGAGGAAGCCAGAG	
VP16+stop_R	TCAGCTAcTTACCCACCGTACTCGTCAATTCC	
Bgl-NPT_F	agatctatgattgaacaagatggattg	
NPT-Bgl_R	agatctcagaagaactcgtcaagaag	