

Figure S1. Tissue-specific expression of genes in Chinese fir wood-forming tissues.

I, Specific isolation of secondary phloem, xylem, cambial cells from Chinese fir trunks via the frozen laser microdissection method. Left panel, the overall structure of woody tissues in radial sections. Right panel, the anatomical structure of cambium (1), secondary xylem (2) and secondary phloem (3). The scale is 1:10. The dying of sections was by 0.1% toluidine blue solution. **II,** Tissue-specific expression of genes in Chinese fir wood-forming tissues. The reference gene was *60S* rRNA. a, b, c and d represented the difference in gene expression levels in secondary phloem tissues (**blue columns**) and cambium (**yellow columns**) compared to those in secondary xylem cells (**green columns**). a, p -value<0.001; b, $0.05 < p$ -value < 0.01, c, $0.01 < p$ -value < 0.05, d, p -value>0.05.

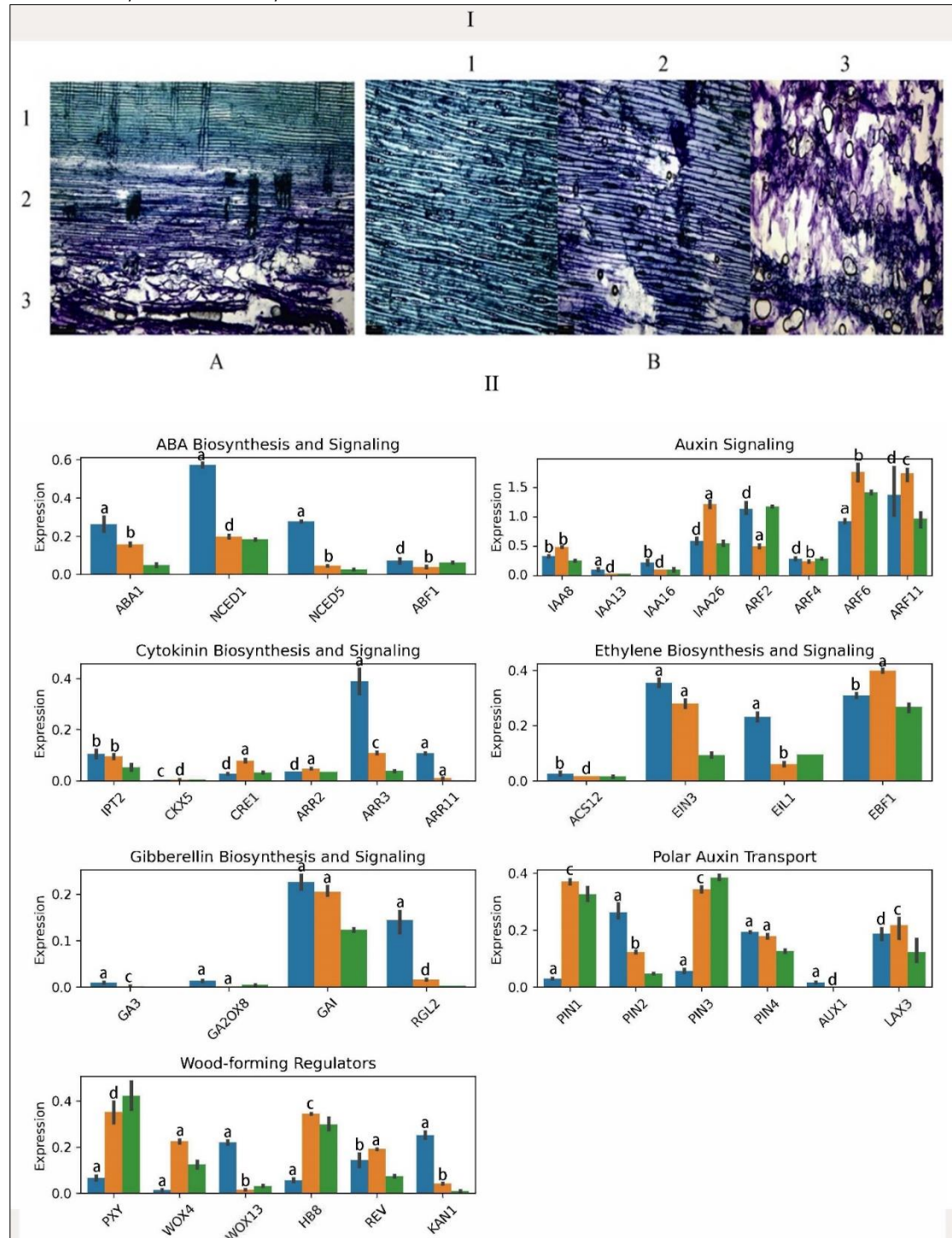


Figure S2. Expression profiles of genes related to ethylene biosynthesis and signaling in differently treated samples. a, p -value<0.001; b, $0.05 < p$ -value <0.01, c, $0.01 < p$ -value<0.05, d, p -value>0.05.

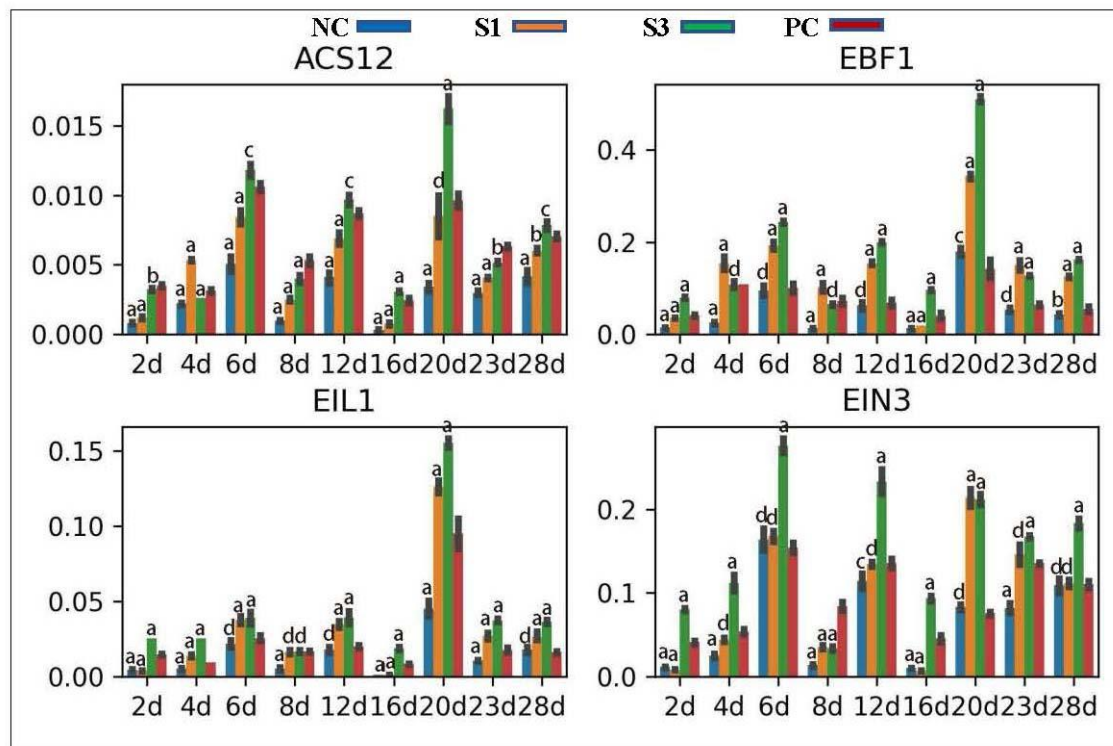


Table S1. Functional annotation and classification of selected genes

Gene Name	Accession Number	Blastx E-value	Functional Annotation	qPCR Primers
PIN1	MW934397	4e-140	PIN-FORMED 1	Forward primer: TACTACTGCGCGGTTTGGAA Reverse primer: CATACCTCGGGAACCGTAAGC
PIN2	MW934398	0.0	PIN-FORMED 2	Forward primer: TTTGTCTGATGCCGGTCTTG Reverse primer: AAGTGGCAACGGATTTTCCA
PIN3	MW934399	0.0	PIN-FORMED 3	Forward primer: TACTACTGCGCGGTTTGGAA Reverse primer: CATACCTCGGGAACCGTAAGC
PIN4	MW934400	0.0	PIN-FORMED 4	Forward primer: GGAGCCGCGGAATGG Reverse primer: TCGCGAGGACTGCAAAGAAT
AUX1	MW934387	0.0	AUXIN RESISTANT 1	Forward primer: GCTCCCCAAGTCAGCATTTTC Reverse primer: GCAAACCCAAAGGTAATGAACTG
LAX3	MW934396	0.0	Like AUX1 3	Forward primer: TTCAAATCAGGTAGCGCAGGTA Reverse primer: TGGAAGAGTATGCCAGACACCAT
IAA8	MW934388	3e-73	Indole-3-acetic acid-induced protein 8	Forward primer: TTCGATCCTTCCGGTGTAATA Reverse primer: CAGCCTTTCCTTCACCCTCTT
IAA13	MW934390	1e-57	Auxin-induced protein 13	Forward primer: TTGGCTTTGGAGGACATGTTC Reverse primer: TGCATAGGAATCTGCCCAGAA
IAA16	MW934392	3e-69	Indole-3-acetic acid-induced protein 16	Forward primer: GACTACTGTGCTTGCTGATCCA Reverse primer: TGGCCACCCCAACAATCTG
IAA26	MW934393	4e-40	Indole-3-acetic acid inducible 26	Forward primer: GCAGCTCTATTCCAGCTCAAAAC Reverse primer: CCGCTCAACACAGATGGGTGA
ARF2	MW934382	0.0	Auxin response factor 2	Forward primer: GATGCCACATGCACAAATCC Reverse primer: CAGCCTTCAATGGCTCTGACT
ARF4	MW934383	1e-157	Auxin response factor 4	Forward primer: TGTGCGCCCTTATGATGTTC Reverse primer: CCTGGTCTGCATGGAGATTCA
ARF6	MW934384	0.0	Auxin response factor 6	Forward primer: CTGGCCTTGGTGACTTGGA Reverse primer: TGTAATTCATCCCAACCAACCT
ARF11	MW934385	0.0	Auxin response factor 11	Forward primer: CTACTTCTTGGTATCAGACGTGCAA Reverse primer: CCAATATGCATACTGTCACTGGATAG

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IPT2	MW934411	1e-128	tRNA isopentenyl transferase 2	Forward primer: AGCCGGCAAATCTCGTCTT Reverse primer: CGAGTCAGCGTTGAGGATCTC
CKX5	MW934409	0.0	Cytokinin oxidase 5	Forward primer: GGAACGCTTTCTAATGCTGGAA Reverse primer: TGGAGCACGTTGCTGATCTG
CRE1	MW934410	0.0	Cytokinin response 1	Forward primer: CACCTTTGCCGTCTACACTAAAGA Reverse primer: ACGGTGGCTTCCGTTCTCT
ARR2	MW934406	4e-118	Arabidopsis response regulator 2	Forward primer: TTGCGAGTTTTAGTGGTTGATGA Reverse primer: GCCCCGAGAACATGTTGTAAGTTC
ARR3	MW934407	1e-51	Arabidopsis response regulator 3	Forward primer: CAAGGCGTTGGAGGTGTTG Reverse primer: TGGCATACAGTAGTCTGTGATAATC ATATT
ARR11	MW934408	2e-55	Arabidopsis response regulator 11	Forward primer: GACGATCCCTTGTGCCTCAT Reverse primer: CGGGTACATGTTGTACGTTGT
GA3	MW934420	6e-112	GA requiring 3	Forward primer: ACGGTCATCAAGGAACTGACA Reverse primer: GCAGGTTTCCCAGGACAGGTA
GA ₂ ox 8	MZ540759	1e-70	Gibberellin 2-oxidase 8	Forward primer: CAGGGAGGGAAAGTGGATCAT Reverse primer: GAGGTCGCCAACGTTGATG
GAI	MW934423	2e-166	Gibberellic acid insensitive	Forward primer: GCGCCATGGGAAAGGTT Reverse primer: GTCCTGTGGAAGGAATCCGTAA
RGL2	MZ540760	7e-56	RGA-like 2	Forward primer: CTCGAGTTTGCTCAATCAATAGGA Reverse primer: CAGATTCATCCAGTTCTTCCATTTC
ABA1	MW934375	0.0	ABA deficient 1	Forward primer: AAGGATTTGAGCGCTGTGAGA Reverse primer: GGAGAGCAGCCAAGGCATT
NCED 1	MW934379	0.0	Carotenoid cleavage dioxygenase 1	Forward primer: GGTTGTCACAAAGGAGGGAATAA Reverse primer: ATTGCGAAGTCATGCATCATG
NCED 5	MW934381	0.0	Nine-cis-epoxycarotenoid dioxygenase 5	Forward primer: TGCAGTCCGCCATGATAGC Reverse primer: GACATCGTAGCTCAGAGCGAAA
ABF1	MW934376	1e-36	Absciscic acid responsive element-binding factor 1	Forward primer: TGCACAGAGACAGGCCACAT Reverse primer: CAACTCCAGCTTTGACCAAGAA
ACS12	MW934377	3e-169	1-amino-	Forward primer:

			cyclopropane-1-carboxylate synthase12	TGGCTGGCTGTTGTTAACCA Reverse primer: ATGCTCGTGGGTGGACAAG
EIN3	MW934430	2e-171	Ethylene-insensitive3	Forward primer: TGGCTGGCTGTTGTTAACCA Reverse primer: ATGCTCGTGGGTGGACAAG
EIL1	MW934429	2e-127	Ethylene-insensitive3-like 1	Forward primer: TCAGAGACTGGAACATGAAAATAACAA Reverse primer: CTTGGGATGCTAGCTGTCTACTTCT
EBF1	MW934428	3e-165	EIN3-binding F box protein 1	Forward primer: TGCATCTTGATGGAGACATCATG Reverse primer: TTCGACTCTCCTTGCAGTACAAAG
PXY	MW934435	0.0	Phloem-intercalated with xylem	Forward primer: ATGGAAGCATCCCCACCAAG Reverse primer: TGCCATGGAATCCCTCCAAC
WOX4	MW934436	3e-39	WUSCHEL related homeobox 4	Forward primer: GCAGGCAATCAACAGCAACA Reverse primer: CGTTGGGTGTCCTCATTCCA
WOX1 3	MW934437	4e-44	WUSCHEL related homeobox 13	Forward primer: CCCTTCTTCGCTTCCCAGTT Reverse primer: ATTGGAGTGGCTGTGCCTT
HB8	MW934440	0.0	Homeobox-leucine zipper protein 8	Forward primer: CCGCTTGCAGAAGCAAGTTT Reverse primer: CGCGGTGTCAGATGGTTTTG
REV	MW934442	1e-91	REVOLUTA	Forward primer: TTTCTGCGGGAAAAGCGAAC Reverse primer: TTAACTGGCCGGGTCAAAGG
KAN1	MW934444	1e-47	KANADI 1	Forward primer: TGCAGGGTTCGATTTGTGGA Reverse primer: TGTGGAGGCGCTGATTCTT