

**Table S1.** Primer sequences used for qPCR assays of specific lignin biosynthetic genes<sup>a</sup>

Genes	Type	Primer (5' to 3')
<i>PAL1</i>	Forward	GCTTGGCAAAGACGGATGTC
	Reverse	AGCGCCAACCTACCCATTGAT
<i>PAL6</i>	Forward	CTCAAGCTCATGTCCTCCACA
	Reverse	TCAGCACCTTCTTCGACACC
<i>C3H2</i>	Forward	AAGCCACTGGTTGTCAGGAG
	Reverse	TGAACTCCTGCCCTTCTTCG
<i>C3H3</i>	Forward	AAGATCATGGAGGAGCACGC
	Reverse	CGGTGATCATGTCCCAGAGG
<i>CCR2</i>	Forward	GAAACAGCGCGGTTACGTT
	Reverse	AGGAATGCTGGCAACAAACCC
<i>CCR6</i>	Forward	TGACTGACGATCCAGAGCAG
	Reverse	GCAGAATTCAAGGTCGCTCC
<i>COMT1</i>	Forward	GGTTCGCCGCCATGAAGACTA
	Reverse	CAGGTGGATGCATCAGAGAGGTA
<i>COMT2</i>	Forward	GTCCGCCGATCTGAGAATCTTC
	Reverse	CGACGACACAACCAGTAGAG
<i>COMT3</i>	Forward	GAGTATCATGGCACGGACCC
	Reverse	ACGCCATTGAAGCCCTTGTA
<i>CAD1</i>	Forward	TTACCTACCAGCTCCAGCCA
	Reverse	TCTGGAATTGCACGCACCAA

<sup>a</sup>Primer sequences were designed for the newly identified candidate lignin biosynthetic genes or redesigned in cases where previously reported primers [3] do not exhibit target gene specificity.