

Table 1 Suppl. Primers used for real time quantitative PCR analysis for cell division/expansion-related, cellulose synthase encoding, lignin biosynthesis related, and brittle culm-related genes and predicted open reading frames (ORFs) for *DNL2*.

Items	Genes names	Forward primers (5'-3')	Reverse primers (5'-3')
Cell division/ expansion-related genes	<i>Cdc2</i>	CCGCCTCGCTATCAACG	TCGACCTCGCCATCACC
	<i>Cdc3</i>	ACCTCCTCTTCTCCGACTGC	TCCGTGAACCCGCTTGG
	<i>CycB1</i>	ATCTCACC GTTCTACAGCATA	CGTACTGCATCAGTGCCAATT
	<i>CycB2</i>	CGGTGGATTGGAGTGTTCT	GCGAGGTAAAGGCTGAGTG
	<i>MCM3</i>	GCCAAGTCCCAGCTCCTAA	GCAGCGGTCAAACCAACAC
	<i>RAN2</i>	AGCCAAGCAGGTCACATTCC	AGGTTGCGGTCAACGACAAG
	<i>SPL16</i>	ACTACACGCACCACCAAATC	CCTGGAGGAAAGGGAAGC
	<i>RP42A</i>	GCAGCAATCTGGCATCACC	CAATCCCACAAGCCTAACG
	<i>H4</i>	GCATCTCGGGGCTCATCTAC	CATGGCGGTGACGGTCTT
	<i>EXPA</i>	AAGAGCCAGCCGATGCG	CGGAAGGAGGCGACGAA
	<i>XTR</i>	CCCTGCTCCTCTCTCTC	ACAGGTTCCCATACCCACA
Cellulose synthase encoding genes	<i>OsCesA1</i>	GGCATT CAGGGTCCAGT	CCAAATCAGCCTCAGTTAGT
	<i>OsCesA2</i>	ATCTATTTGCGGTCTTCCA	AAATCGCCTTCTTCATCAG
	<i>OsCesA3</i>	GGGCAGATGGTTGATGAC	TTGAACAGGTAGATTGGGAT
	<i>OsCesA4</i>	GGTCGTGGAGGAGGAAGT	CCTGGTGATCGCTGAGTT
	<i>OsCesA5</i>	TTCCAACGCAATCAATAAC	TTCCAACCAAACCCCTTCA
	<i>OsCesA6</i>	GGTATGGGTATGGTGGTG	GCAGGCAAGGTACAGTAAGC
	<i>OsCesA7</i>	CCACGAGCCCGTCAACT	CAGATCCTTCCCAGCCAC
	<i>OsCesA8</i>	CCTTGAGATGAGGTGGAGT	CTTGAGGAGACCCTGGAA
	<i>OsCesA9</i>	TCGGACGGAAGGTTTG	GTTGCGGTTGGCGTAT
	<i>OsCesA11</i>	CTCTGGTTCGGTGGTCTTCG	TCGGTTGCTCCGTCGTG
	<i>OsCSLD-4</i>	TGCTGTGCCACCTCTACCCG	CCCGACCAGACGAAGACGATG
	<i>OsCSL-F6</i>	TTCTTCAACTTCTGGGTCTCTT	ACCACCACCGGCGTCTT
Lignin biosynthesis related genes	<i>OsBC1</i>	GGCAACATCAACGACCCG	CGCATCAGCACCTCCGACT
	<i>OsBC3</i>	ATGGGTCCCTTGATACGAT	GCCTCTACATAACCACGAAT
	<i>OsBC10</i>	CTTCTTCTACAATCGGCAGGTC	AGAACACGCTCAGCCTCGA
	<i>OsBC12</i>	GTGGTTCGGTGGAATCAGTT	TCTCCCTTACTTGGCATCTT
	<i>OsBC14</i>	ACAGAAGCATACGCCACCT	CACGAGCATCAAACGACAG
	<i>OsBC15</i>	CGATGTGGCGGTGGATG	CGAGCGTGTCTGTTCTTGG
Brittle culm-related genes	<i>OsCOA1</i>	AAGAGCGACGCCCTGTA	TGGTGCTTGTCCGTGATG
	<i>OsCAD2</i>	ATGGGCGTGAAGGTGG	TCGGAGCTGACGAGGTAG
	<i>OsCCR2</i>	ACCAGAGGCTCAGGGATT	GCCACCGTGACAACAGG
	<i>OsCCR3</i>	GGTCTTCAACTCCTCCGTCAC	GTCGCTCCAGGTGTTCTCG
	<i>OsCCR19</i>	GCGTCGTGGCTCGTCAA	TTCTTCGGGTCTATCTGGGTT
	<i>OsCOMT1</i>	TCGT CAGGTGCGAGATGG	TCCTCGTTGGGCGTCAG
	<i>OsPAL1</i>	TCGGAACAAAGTACCTGACC	TTGCCTTCGTTGATAGCC
Predicted ORFs	<i>ORF1</i>	GTTTCGCCAAGAAATACTCAA	CACAGGCATATTCAACAAAA
	<i>ORF2</i>	TGTGCTGGAAAGCCTTAG	GCATGAAGATACTGCCATTTA
	<i>ORF3</i>	GCTCTGGTTTCGCCTGATA	AGCCCTTTCCTACTTTATCTC
	<i>ORF4</i>	CATTGCTTTGCTGCTTGA	GAGGTTTCTTCCCATACTAAAT
	<i>ORF5</i>	GATGACCTGACTACCACCTG	CACTCAATGCCTCAAAGAGC
	<i>ORF6</i>	GCTGGGGACCTTGACTGC	GCAACAAGAGGGTCTGCC
	<i>ORF7</i>	CAGTTCTGGCTCATCGGC	CTGCTTGGAGGTGAGGGT
	<i>ORF8</i>	CCGTGACATCAGGAAATG	CAGCATGAAGATGCCAAT
	<i>ORF9</i>	AACCGTATGGCGCTAATG	GCAAGCCTCTTCAATCAAAT
	<i>ORF10</i>	CCGATTCATGTCCTACACGC	AAGATGATGAGAAGCACCTTCG

Table 2 Suppl. Primers used for fine mapping performance of *dn12*.

Primers designations	Forward primers (5'-3')	Reverse primers (5'-3')
RM7093	CTCTCTTTGCCTAATTGCCTTGTTG	TTGTAGACCGGCAGCATTATTGG
Indel4	CCGCTTGTGGACTTCTTGT	GGGTGATGTAGACCGATGC
Indel7	GGCGAGGTTTGAGGCCAGTT	TGCCATTGCCAGCCGTTTC
Indel11	GTAAATGAATCATCAGGAT	TGTGAGGTCAATGTAAGTAGT
TG9	TCGAAACACTAATAGCAAA	TTGGACGCCTGGATTGTAC
TG3	TAGTAGTAATAGCTTAGCAGT	CATTICTTATAACAACGAATC
Indel14	AGCAATGCAAGTAGAAAAG	TGTGGAGTAGGAGGAGTAT
IM1	ATGTGAACAGCAAATAAATG	GCCTGCTATTGATACTTCC
IM4	GCTGGGTGGCTATACCAA	ACGGGAAAGGGAGAAGAG
IM6	CTCCTCCCCGTCTTCCTC	CGCCTTCTTAGCGGTGTC
IM10	CCCAGAGTGAGTTGTCGGT	GTGATTTTATTATTATTAGCAGAGC