## **Supplementary Information**

## Drought response transcriptomics are altered in poplar with reduced tonoplast sucrose transporter expression

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**Table S1**. T-DNA insertion site analysis.

**Figure S1**. Plant-wide transcript abundance of *SUT* genes in leaf, xylem, bark and roots of wild type and SUT4-RNAi transgenic plants.

**Figure S2**. Transcript abundance of sucrose cleaving enzymes in different organs of WT and *SUT4*-RNAi plants under WW conditions.

**Figure S3**. Inter-organ correlations of *AQP* transcript abundance.

**Figure S4**. Heatmap illustration of *SUT4*-RNAi and DR effects on *LEA*, *HSP20*, *BSP/VSP* transcript abundance in roots.

**Figure S5.** Heatmap illustration of *SUT4*-RNAi and DR effects on transcript abundance of genes associated with abscisic acid, jasmonic acid and ethylene signaling in roots.

Dataset S1. Gene expression analysis by RNA-Seq.

**Dataset S2**. Root co-expression gene network analysis.

Tab	ole S1.	T-DNA	insertion	site	anal	ysis
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Line	Total read pairs (M)	Hybrid read pairs <sup>1</sup>	Insertion site	Nearest genome coordinate (P. trichocarpa v3.0)
F	32,756,771	4	Potri.009G049200	Chr09:5430076
G	29,853,306	5	intergenic (3' to Potri.004G190400)	Chr04:20513764
н	12,791,788	0	-	-

<sup>1</sup> Junction-flanking read pairs, with one read of the pair mapping to the T-DNA and the other to the genome.



**Fig. S1.** Plant-wide transcript abundance of *SUT* genes in leaf, xylem, bark and roots of wild type and *SUT4*-RNAi transgenic plants. Values represent FPKM means  $\pm$  SD for n=3 biological replicates. Statistical significance of transgenic effect was determined using two-sample student's *t*-test (\*\*\*, *P* ≤0.005).



**Fig. S2.** Transcript abundance of sucrose cleaving enzymes in different organs of WT and *SUT4*-RNAi plants under WW conditions. FPKM values were summed from multiple gene models of each gene family for each biological replicate and log10-transformed. Data are means ± SD of n=3 biological replicates. *CIN*, cell-wall invertase; *VIN*, vacuolar invertase; *NIN*, neutral invertase; *SUS*, sucrose synthase.

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	PIPZ.7	PIP1.5	PIP1.2	PIPZ.0	PIPZ.5	PIPZ.2	PIP2.3	PIP1.1	PIP2.4	PIPZ.1
VVI LVS.B	0.84	0.41	0.80	0.58	0.75	0.00	0.00	0.06	0.00	0.53
LVS. X	0.75	0.60	0.79	0.74	0.81	0.00	0.35	0.06	0.40	0.28
L VS. R	0.77	0.82	0.49	0.00	0.00	0.65	0.02	0.49	0.42	0.36
R VS. B	0.59	0.52	0.02	0.10	0.08	0.08	0.04	0.10	0.42	0.22
R VS. A	0.60	0.78	0.28	0.07	0.01	0.00	0.07	0.10	0.30	0.00
D VS. A	0.95	0.47	0.78	0.82	0.80	0.75	0.55	0.45	0.12	0.01
RNAi Lvs. B	0.84	0.54	0.91	0.02	0.02	0.02	0.12	0.18	0.56	0.24
L vs. X	0.86	0.41	0.77	0.00	0.07	0.00	0.01	0.02	0.44	0.02
L vs. R	0.16	0.12	0.00	0.04	0.00	0.00	0.02	0.33	0.04	0.14
R vs. B	0.34	0.32	0.11	0.04	0.00	0.00	0.03	0.23	0.02	0.04
R vs. X	0.22	0.61	0.00	0.14	0.03	0.00	0.18	0.02	0.24	0.24
B VS. X	0.96	0.69	0.89	0.53	0.55	0.54	0.77	0.34	0.29	0.04
FPKM	81	112	407	143	280	179	426	408	290	552
FPKM	81	112 0661397	407	143	280	179	426	408	290	552
FPKM	81	112 0662397 Potri	407	143	280	179 01618610 Potri (	426	408	290 00612170 00612170	552 Decomposition
FPKM	81 90 <sup>311</sup> TIP4.1	112 06623976 90 <sup>511</sup> TIP1.1	407	143 50 50 <sup>3605099</sup> 80 <sup>5119</sup> TIP1.2	280 0960110 0960110 0960110	179 01678610 90 <sup>1678</sup> 70 <sup>1670</sup>	426 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	408 0 <sup>A</sup> G2 <sup>1650</sup> 90 <sup>K11.0</sup> TIP1.6	290 06612170 90 <sup>6612170</sup> 70 <sup>6612170</sup>	552 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FPKM WT Lvs. B	81 90 <sup>011.</sup> TIP4.1 0.58	112 06623910 potiti TIP1.1 0.81	407 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	143	280 9969772 9969772 9071.0 TIP2.1	179 01618610 90 <sup>1618610</sup> 70 <sup>1619</sup> TIP1.4	426 0 0 8 0 10 8 0 10 10 10 10 10 10 10 10 10 10 10 10 1	408 00,62,650 90,62,650 90,62,650 90,62,650 7,10000000000	290 0060210 9060210 9050210 7110215	552 0 0 0 0 0 0 0 0 3 0 0 0 3 3
FPKM WT L vs. B L vs. X	81 <sub>2</sub> 0 <sup>51,C</sup> TIP4.1 0.58 0.39	112 90662 <sup>3910</sup> 90 <sup>5110</sup> TIP1.1 0.81 0.67	407 9 9 9 9 9 9 7 1 1 9 2.2 0.85 0.56	143 9 9 9 9 9 9 9 9 9 9 9 9 9	280 99692 909692 711P2.1 0.07 0.72	179 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	426 0 0 9 0 9 0 10 10 10 10 10 10 10 10 10 10 10 10 1	408 0401 0401 0401 004 0.42 0.04	290 0662110 90662110 90562110 905710 TIP1.5 0.83 0.00	552 0 0 0 0 0 0 0 3 0 0 0 6
FPKM WT Lvs. B Lvs. X Lvs. R	81 2011 11P4.1 0.58 0.39 0.57	112 906623910 90 <sup>6710</sup> TIP1.1 0.81 0.67 0.22	407 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	143 0 0 0 0 0 0 0 0 0 0 0 0 0	280 280 280 280 280 280 280 280	179 016 <sup>98</sup> 016 <sup>98</sup> 7016 <sup>10</sup> 1016 <sup>10</sup> 1017 1019	426 0 0 0 0 0 0 0 0 14 0.14 0.02	408 0402 0461 0500 7000 7000 7000 7000 7000 7000 700	290 290 290 290 290 290 201 201 201 201 201 201 201 201 201 20	552 0 16 0 0 0 0 0 0 0 0 0 0 0 0 0
FPKM WT L vs. B L vs. X L vs. R R vs. B	81 90 <sup>51</sup> TIP4.1 0.58 0.39 0.57 0.76	112 po <sup>6</sup> 3 <sup>39</sup> 10 po <sup>111</sup> TIP1.1 0.81 0.67 0.22 0.19	407 8 90161252 8 90110 TIP2.2 0.85 0.56 0.18 0.19	143 143 143 143 143 143 143 143	280 9969776 9969776 TIP2.1 0.07 0.72 0.33 0.49	179 0161 <sup>86</sup> 90 <sup>161</sup> 90 <sup>161</sup> 90 <sup>161</sup> 11P1.4 0.48 0.75 0.19 0.01	426	408 046165 80 <sup>46165</sup> 80 <sup>461</sup> 11P1.6 0.42 0.04 0.01 0.12	290 9060110 9060110 90701 TIP1.5 0.83 0.00 0.24 0.33	552 0 16 0 0 0 0 0 0 0 0 0 0 0 0 0
FPKM WT L vs. B L vs. X L vs. R R vs. B R vs. X	81 voit TIP4.1 0.58 0.39 0.57 0.76 0.68	112 Posti TIP1.1 0.81 0.67 0.22 0.19 0.13	407 8 90162353 90116 711P2.2 0.85 0.56 0.18 0.19 0.68	143 9 9 9 9 9 9 9 9 9 9 9 9 9	280 9967 7097 711P2.1 0.07 0.72 0.33 0.49 0.31	179 0161861 80 1101.4 0.48 0.75 0.19 0.01 0.08	426	408 0461 <sup>550</sup> 80 <sup>461</sup> TIP1.6 0.42 0.04 0.01 0.12 0.61	290 9060270 9060270 711P1.5 0.83 0.00 0.24 0.33 0.00	552 Control Control C
FPKM WT L vs. B L vs. X L vs. R R vs. B R vs. X B vs. X	81 200 200 200 200 200 200 200 200 200 20	112 Posting Rotification TIP1.1 0.81 0.67 0.22 0.19 0.13 0.92	407 8 8 8 9 9 10 10 2 10 2 10 2 10 2 10 10 10 10 10 10 10 10 10 10	143 0 0 0 0 0 0 0 0 0 0 0 0 0	280 99607 907 11P2.1 0.07 0.72 0.33 0.49 0.31 0.00	179 0161 <sup>86</sup> 80 <sup>67</sup> 711P1.4 0.48 0.75 0.19 0.01 0.08 0.64	426	408 0461 80 0461 80 7 11P1.6 0.42 0.04 0.01 0.12 0.61 0.33	290 906(7)170 906(7)170 711P1.5 0.83 0.00 0.24 0.33 0.00 0.00	552 0 0 0 0 0 0 0 0 0 0 0 0 0
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FPKM WT Lvs. B Lvs. X Lvs. R R vs. B R vs. X B vs. X RNAi Lvs. B Lvs. X	81 20 <sup>3</sup> 11P4.1 0.58 0.39 0.57 0.76 0.68 0.88 0.28 0.29	112 80662391 80672 11P1.1 0.81 0.67 0.22 0.19 0.13 0.92 0.29 0.29	407 9 9 9 9 9 9 9 9 7 1 9 2 2 8 9 9 7 1 9 2 2 8 9 9 7 1 9 9 7 1 9 7 1 9 7 1 9 7 1 9 7 1 9 7 1 9 7 1 9 7 1 9 7 9 7	143 9 9 9 9 9 9 9 9 9 9 9 9 9	280 9960776 7077 0.72 0.33 0.49 0.31 0.00 0.29 0.10	179 0,638 179 179 0,638 0,638 0,75 0,19 0,01 0,08 0,64 0,00 0,01	426 0 0 0 0 0 0 0 0 0 0 0 0 0	408 0 0 0 0 0 0 0 0 0 0 0 0 0	290 8 8 9667 11P1.5 0.83 0.00 0.24 0.33 0.00 0.00 0.21 0.53	552 P P P P P P P P P P P P P
FPKM WT Lvs. B Lvs. X Lvs. R R vs. B R vs. X B vs. X RNAi Lvs. B Lvs. X Lvs. R	81 2007 2007 2007 2007 2007 2007 2007 200	112 Potri TIP1.1 0.81 0.67 0.22 0.19 0.13 0.92 0.29 0.34	407 90167259 90167259 90567 0.56 0.18 0.19 0.68 0.69 0.12 0.04 0.02	143 0 0 0 0 0 0 0 0 0 0 0 0 0	280 9 9 9 9 9 9 9 9 9 9 9 9 9	179 0 0 0 0 0 0 0 0 0 0 0 0 0	426 9 9 9 9 9 9 9 9 9 9 9 9 9	408 A08 A07 A07 A07 A07 A07 A07 A07 A07	290 8 8 8 8 9 8 9 8 1 1 1 1 1 5 0.83 0.00 0.24 0.33 0.00 0.24 0.33 0.00 0.24 0.33 0.00 0.21 0.53 0.27 0.53 0.27 0.53 0.27 0.53 0.00 0.24 0.53 0.00 0.24 0.53 0.00 0.24 0.53 0.00 0.24 0.53 0.00 0.24 0.53 0.27 0.53 0.27 0.53 0.27 0.53 0.00 0.24 0.24 0.24 0.53 0.25 0	552 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9
FPKM WT L vs. B L vs. X L vs. R R vs. B R vs. X B vs. X RNAi L vs. B L vs. R L vs. R R vs. B	81 2017 20	112 Portion FIP1.1 0.81 0.67 0.22 0.19 0.13 0.92 0.29 0.34 0.20	407 30 30 407 407 407 407 407 407 407 40	143 30 50 50 50 50 50 50 50 50 50 5	280 99 99 99 99 99 90 11 90 12 0.07 0.72 0.33 0.49 0.31 0.00 0.29 0.10 0.04 0.00	179 0 0 0 0 0 0 0 0 0 0 0 0 0	426 9 9 9 9 9 9 9 9 9 9 9 9 9	408 0 0 0 0 0 0 0 0 0 0 0 0 0	290 290 201 201 201 201 201 201 201 20	552 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9
FPKM WT L vs. B L vs. X L vs. X R vs. B R vs. X RNAi L vs. R L vs. X L vs. R R vs. B R vs. X	81 2007 20	112 9663391 7077 707	407 8 8 9 8 9 8 1 1 1 2 2 8 8 9 8 1 1 2 2 8 1 1 2 2 1 2 1 2 2 1 2 1 2 2 1 2 1 2 2 1 2 1 2 1 2 2 1 2 2 1 2 1 2 2 1 2 2 1 2 1 2 2 1 2 2 1 2 1 2 2 1 2 2 1 2 2 1 1 2 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	143 3 5 5 5 5 5 5 5 5 5 5 5 5 5	280 9 9 9 9 9 9 9 9 9 9 9 9 9	179 015960 7015960 7015960 7019 0.019 0.01 0.08 0.64 0.00 0.01 0.16 0.00	426 38 426 426 426 426 426 426 426 426	408 0 0 0 0 0 0 0 0 0 0 0 0 0	290 290 201 201 201 201 201 201 201 20	552 1609 171P2.4 0.33 0.06 0.02 0.00 0.12 0.09 0.08 0.22 0.37 0.23 0.13
FPKM WT L vs. B L vs. X L vs. R R vs. B R vs. X RNAi L vs. B L vs. X L vs. R R vs. B R vs. X S S S S S S S S S S S S S S S S S S S	81 200 TIP4.1 0.39 0.57 0.76 0.68 0.28 0.29 0.06 0.43 0.33	112 96613916 96717 71P1.1 0.67 0.22 0.19 0.13 0.92 0.29 0.29 0.34 0.20 0.25 0.99	407 9 9 9 9 11P2.2 0.85 0.56 0.18 0.19 0.68 0.69 0.12 0.04 0.02 0.19 0.16 0.83	143 3 3 3 3 3 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5	280 9 9 9 9 9 9 9 9 9 9 9 9 9	179 0 179 0 0 0 0 0 0 0 0 0 0 0 0 0	426 A26 A26 A26 A26 A26 A26 A26 A	408 A08 A08 A08 A08 A08 A08 A08 A	290 P P P P P P P P P P P P P	552 0 0 0 0 0 0 0 0 0 0 0 0 0
FPKM WT L vs. B L vs. X L vs. X B vs. X RNAi L vs. B L vs. X L vs. R R vs. X L vs. R R vs. B S vs. X B vs. X C vs. A C vs. A	81 Pot <sup>11</sup> 0.58 0.39 0.57 0.76 0.68 0.28 0.29 0.06 0.43 0.34 0.33 0.33	112 soft soft rip1.1 0.67 0.22 0.19 0.13 0.92 0.29 0.34 0.20 0.25 0.29 0.34 0.20 0.25 0.29 0.34 0.20 0.25 0.34 0.20 0.25 0.34 0.20 0.25 0.34 0.25 0.34 0.25 0.34 0.25 0.34 0.25 0.34 0.25 0.34 0.25 0.34 0.25 0.34 0.25 0.34 0.25 0.34 0.34 0.34 0.35 0.34 0.35 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.35 0.34 0.34 0.35 0.34 0.35 0.34 0.35 0.34 0.35 0.34 0.35 0.34 0.35 0.35 0.34 0.35 0.35 0.34 0.35 0.35 0.35 0.35 0.34 0.35	407 9 9 9 9 9 9 9 9 9 9 9 9 9	143 S S S S S S S S S S S S S	280 P 0.072 P 0.072 0.033 0.49 0.31 0.00 0.29 0.10 0.04 0.00 0.07 0.53	179 P P P P P P P P P P P P P	426 2 9697 2 97 11P1.8 0.14 0.02 0.02 0.02 0.09 0.17 0.11 0.02 0.27 0.01 0.02 0.09 0.17 0.11 0.22 0.23 0.24 0.14 0.02 0.27 0.15 0.00 0.02 0.05 0.00 0.02 0.02 0.03 0.02 0.17 0.14 0.02 0.27 0.14 0.02 0.02 0.02 0.02 0.03 0.02 0.22 0.23 0.24 0.24 0.24 0.24 0.25 0.2	408 A08 A04 A04 A04 A04 A04 A04 A05 A08 A08 A08 A08 A08 A08 A08 A08 A08 A08	290 P 106 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	552 , , , , , , , , , , , , , , , , , , ,

**Fig. S3.** Inter-organ correlations of *AQP* transcript abundance. A, *PIP* genes. B, *TIP* genes. The upper half of each panel presents correlations between WT organs, and the lower half, RNAi transgenic organs. Values are *r*2 from linear regressions with n=9 independent comparisons for each gene and organ pair. The FPKM value for each gene is presented as average transcript abundance across all organs. L, leaf; B, bark; X, xylem and R, root.

A. LEA	RNA WW	i/WT DR	DR/	WW RNAi	FPKM	В. нярго	RNAi WW	/WT DR	DR/ WT	WW RNAi	FPKM
Potri.016G046400	-1.9	<u>2.0</u>	5.6	<u>9.4</u>	360	Potri.010G195700	4.3	<u>4.9</u>	<u>2.6</u>	3.2	81
Potri.016G071600	-0.5	<u>1.5</u>	0.7	<u>2.7</u>	325	Potri.008G062300	3.7	<u>4.3</u>	0.7	1.3	60
Potri.010G012100	0.2	<u>1.9</u>	0.7	<u>2.4</u>	301	Potri.009G039200	1.1	<u>1.8</u>	<u>-2.1</u>	<u>-1.4</u>	52
Potri.007G146300	0.2	0.6	0.9	<u>1.4</u>	205	Potri.003G109200	2.8	<u>2.7</u>	-1.1	-1.1	51
Potri.T111300	-1.5	<u>2.1</u>	5.7	9.4	114	Potri.019G081200	4.1	<u>4.8</u>	<u>-1.9</u>	-1.3	47
Potri.002G165000	-0.3	<u>4.5</u>	<u>2.2</u>	7.0	70	Potri.006G223900	2.6	<u>4.7</u>	-2.1	0.0	47
Potri.009G158900	0.0	<u>1.5</u>	-0.1	<u>1.4</u>	46	Potri.017G130700	0.7	<u>1.9</u>	-1.0	0.1	20
Potri.006G159400	-0.1	-0.3	<u>1.0</u>	<u>0.8</u>	31	Potri.001G192600	0.3	<u>3.4</u>	<u>3.8</u>	<u>6.9</u>	19
Potri.004G197600	0.1	<u>2.2</u>	0.3	<u>2.4</u>	30	Potri.018G140600	<u>1.3</u>	<u>1.3</u>	-1.0	-1.0	16
Potri.009G145700	-0.2	<u>-2.8</u>	-0.4	<u>-3.0</u>	19	Potri.013G089200	4.3	<u>4.9</u>	1.4	2.0	14
Potri.015G148200	-0.3	-0.3	-1.0	<u>-1.0</u>	18	Potri.010G175200	3.4	<u>2.4</u>	0.5	-0.5	10
Potri.011G127900	0.2	<u>-1.7</u>	<u>-1.7</u>	<u>-3.6</u>	16	Potri.T125900	3.5	<u>4.5</u>	<u>3.0</u>	4.0	6
Potri.001G173000	0.3	0.8	<u>6.7</u>	7.2	14						
Potri.014G106100	0.2	<u>1.4</u>	<u>-1.5</u>	-0.3	13	C. VSP/BSP	RNAi	/WT	DR/	WW	FPKM
Potri.005G122400	-1.1	0.8	<u>6.5</u>	8.4	13	Potri 013G100800	1 1	1 7			280
Potri.001G418000	0.1	<u>1.5</u>	-0.7	0.8	12	Potri 013G100700	1.1	17	1.0	1.6	105
Potri.017G108500	-0.3	<u>1.8</u>	<u>4.2</u>	6.3	12	Potri 013G100700	1.1	2.1	0.8	1.6	103
Potri.001G173200	0.5	0.6	<u>7.1</u>	<u>7.2</u>	11	Potri 0086028500	-0.1	-1.6	0.0	-15	34
Potri.002G180000	0.0	-0.2	<u>-1.2</u>	<u>-1.4</u>	10	Potri 0136080300	3.1	0.5	2.6	-0.1	24
Potri.004G046000	0.7	0.1	<u>6.3</u>	5.7	7	Potri T096300	0.1	1.8	1 1	2.8	23
Potri.009G019600	0.2	0.8	0.7	<u>1.2</u>	7	Potri 0136082800	3.1	1.0	2.6	0.9	23
Potri.T181400	0.0	-0.5	-0.9	<u>-1.4</u>	7	Potri 0196050200	4.3	0.1	2.0	-2.2	9
Potri.017G108300	-1.2	<u>1.0</u>	<u>4.7</u>	<u>6.9</u>	7	1011.0150050200		0.1			2
Potri.016G142300	-1.1	<u>-1.3</u>	<u>1.3</u>	1.1	6						
Potri.015G002400	0.4	<u>-1.7</u>	<u>3.0</u>	0.9	6						
Potri.017G108400	-0.4	0.6	<u>5.3</u>	<u>6.3</u>	6						
Potri.003G141200	0.1	-0.7	-0.6	<u>-1.4</u>	5						

**Fig. S4.** Heatmap illustration of *SUT4*-RNAi and DR effects on *LEA* (A), *HSP20* (B) and *BSP/VSP* (C) transcript abundance in roots. Values are log2-transformed fold-changes, and genes are arranged by their transcript abundance (FPKM average) in roots. Significant transgenic or DR effects are denoted by bold-underlined ( $Q \le 0.05$ ) or bold-italics ( $P \le 0.05$ ).

A (ABA)	RNAi	/WT	DR/	ww		C (ethylene)	RNA	i/WT	DR/	ww	W FPKM				
PYR/PYL/RCAR	YL/RCAR WW DR WT RNAI		ERF	WW	DR	WT	RNAi	FPKIVI							
Potri.003G091700	-0.3	-0.4	<u>-1.8</u>	<u>-1.9</u>	80	Potri.004G197400	0.2	<u>1.1</u>	-0.5	0.4	165				
Potri.001G092500	0.0	-0.2	-0.7	<u>-0.9</u>	62	Potri.007G090600	0.4	0.2	<u>-1.8</u>	<u>-2.0</u>	164				
Potri.006G104100	-0.4	0.3	-3.7	-3.0	58	Potri.010G006800	-0.1	<u>-1.1</u>	<u>2.0</u>	1.0	163				
Potri.016G125400	-0.4	0.7	<u>-3.4</u>	<u>-2.3</u>	52	Potri.005G168700	0.0	<u>0.8</u>	-0.3	0.5	150				
Potri.003G139200	-0.1	-0.3	<u>-1.7</u>	<u>-1.8</u>	50	Potri.005G077300	0.2	-0.1	-1.1	<u>-1.3</u>	107				
Potri.010G183900	-0.7	1.0	<u>-3.9</u>	<u>-2.2</u>	16	Potri.003G150800	0.3	<u>1.5</u>	0.0	<u>1.2</u>	97				
PP2C						Potri.011G115600	-0.1	0.4	0.9	<u>1.5</u>	89				
Potri.008G059200	0.2	0.1	<u>2.2</u>	<u>2.1</u>	72	Potri.002G094200	-0.1	0.3	0.5	<u>0.9</u>	82				
Potri.010G199600	-0.1	0.0	<u>2.7</u>	<u>2.8</u>	50	Potri.005G195000	-0.6	<u>2.2</u>	<u>2.7</u>	5.5	77				
Potri.012G002700	-0.6	-0.6	<u>3.8</u>	<u>3.8</u>	44	Potri.007G138100	0.3	0.4	1.0	<u>1.0</u>	68				
Potri.009G037300	-0.6	0.0	4.1	<u>4.7</u>	41	Potri.002G065600	0.0	<u>1.9</u>	<u>3.0</u>	<u>4.9</u>	58				
Potri.T137100	-0.7	<u>-1.1</u>	<u>3.6</u>	<u>3.2</u>	25	Potri.014G159000	0.2	<u>1.9</u>	0.7	<u>2.4</u>	56				
Potri.001G245200	-0.1	-0.5	<u>4.0</u>	<u>3.7</u>	19	Potri.008G210900	-0.6	-0.2	<u>-1.6</u>	<u>-1.2</u>	44				
Potri.015G018800	-0.8	<u>-1.4</u>	3.5	<u>2.9</u>	12	Potri.001G356100	0.0	<u>0.9</u>	0.3	<u>1.3</u>	40				
SnRK2						Potri.004G047600	0.3	<u>1.2</u>	0.7	<u>1.6</u>	39				
Potri.002G099700	0.2	0.4	<u>2.0</u>	<u>2.3</u>	10	Potri.019G131300	0.4	<u>1.9</u>	-0.4	<u>1.0</u>	37				
SnRK3						Potri.011G057000	0.3	<u>1.3</u>	<u>1.3</u>	<u>2.3</u>	32				
Potri.006G186200	-0.5	<u>-1.2</u>	0.0	-0.6	133	Potri.008G120100	0.1	<u>1.3</u>	-0.3	<u>0.9</u>	31				
Potri.016G133900	-0.4	<u>-0.9</u>	<u>1.7</u>	<u>1.3</u>	69	Potri.017G013700	-0.1	0.3	0.5	<u>0.9</u>	27				
Potri.010G079000	0.1	<u>1.2</u>	<u>1.8</u>	-0.7	60	Potri.001G397200	0.5	<u>1.0</u>	0.6	<u>1.1</u>	27				
Potri.010G002500	0.0	0.5	<u>1.8</u>	<u>2.3</u>	58	Potri.005G140900	0.3	<u>1.0</u>	-0.1	0.6	26				
Potri.018G108500	-0.1	-0.1	<u>1.4</u>	<u>1.4</u>	53	Potri.014G025200	-0.2	0.7	0.3	<u>1.2</u>	22				
Potri.016G133500	-0.1	0.6	<u>1.3</u>	<u>2.0</u>	47	Potri.001G154100	-0.1	<u>3.3</u>	-0.5	<u>2.8</u>	22				
Potri.006G062800	-0.5	<u>-1.4</u>	<u>1.6</u>	0.7	42	Potri.003G081200	0.2	<u>3.5</u>	<u>-1.3</u>	<u>2.0</u>	21				
Potri.018G109100	-0.1	-0.1	<u>1.3</u>	<u>1.3</u>	39	Potri.014G126100	0.2	<u>1.4</u>	-0.3	<u>0.8</u>	20				
Potri.019G128100	-0.1	-0.2	<u>1.6</u>	<u>1.5</u>	36	Potri.007G046500	-0.1	0.4	<u>-1.1</u>	-0.6	18				
Potri.014G104200	0.2	0.6	<u>1.3</u>	<u>1.7</u>	28	Potri.012G134000	0.3	<u>4.0</u>	1.1	<u>4.8</u>	18				
Potri.018G019900	-0.5	<u>1.2</u>	-0.5	<u>1.2</u>	20	Potri.013G135600	0.7	<u>1.2</u>	-0.9	-0.4	18				
Potri.011G067600	-0.1	0.2	0.6	<u>0.9</u>	17	Potri.006G138900	-0.8	0.6	<u>4.0</u>	<u>5.4</u>	17				
Potri.003G181900	-0.2	0.4	<u>2.1</u>	<u>2.6</u>	13	Potri.009G075300	-0.1	<u>-1.2</u>	0.6	-0.5	17				
Potri.013G156000	0.1	0.4	1.0	<u>1.4</u>	12	Potri.009G101900	-0.2	2.2	1.3	<u>3.8</u>	16				
Potri.008G160200	-0.7	<u>2.1</u>	-0.9	<u>1.8</u>	8	Potri.008G073600	0.0	0.3	0.9	<u>1.2</u>	15				
ASR1						Potri.002G039100	0.2	<u>1.6</u>	1.1	<u>2.5</u>	14				
Potri.005G193800	-0.6	<u>-1.8</u>	<u>2.9</u>	<u>1.8</u>	15	Potri.010G183700	0.1	<u>1.5</u>	0.4	<u>1.9</u>	13				
ABF						Potri.013G158500	-0.1	0.9	<u>-1.6</u>	-0.7	12				
Potri.014G028200	-0.2	0.0	<u>1.5</u>	<u>1.6</u>	66	Potri.011G162400	-0.3	-0.2	<u>1.2</u>	<u>1.3</u>	11				
Potri.004G140600	0.0	-0.1	<u>1.7</u>	<u>1.7</u>	36	Potri.003G150700	0.1	<u>1.4</u>	-0.2	<u>1.1</u>	11				
Potri.009G101200	0.1	-0.5	<u>1.5</u>	<u>0.8</u>	31	Potri.007G076800	-0.8	<u>4.2</u>	-0.1	<u>4.8</u>	11				
Potri.002G067400	-0.2	0.7	0.2	<u>1.1</u>	14	Potri.001G280100	-0.5	<u>-1.7</u>	-0.3	<u>-1.5</u>	11				
B (jasmonic acid)	)					Potri.002G124000	-0.3	<u>1.2</u>	-0.5	<u>1.0</u>	9				
JAZ															
Potri.006G139400	0.1	<u>3.3</u>	0.3	<u>3.5</u>	125										
Potri.010G108200	0.2	<u>1.5</u>	0.4	<u>1.8</u>	96										
Potri.006G217200	0.1	0.7	1.0	<u>1.6</u>	84										

Fig.	<b>S5.</b> Heatmap illustration of <i>SUT4</i> -RNAi and DR effects on transcript abundance of genes
d55	blated with ABA (A), JA (B) and ethylene (C) signaling in roots. Values are log2-transformed
fold	l-changes. Genes are sorted by their transcript abundance (FPKM average) in roots. Significant
RN/	Ai or DR effects are denoted by bold-underlines ( $Q \leq 0.05$ ) or bold-italics ( $P \leq 0.05$ ). ASR, ABA
stre	ss ripening; ABF, ABA-responsive element binding factor; ERF, ethylene response factor; JAZ,
jasr	nonate ZIM-domain; PP2C, protein phosphatase 2C; PYR/PYL/RCAR, pyrabactin resistance/PYR-
like	/regulatory components of ABA receptor family; SnRK, sucrose non-fermenting-1 (SNF1)-
rela	ted protein kinase.

 Potri.006G217200
 0.1
 6.7
 1.0
 1.6
 84

 Potri.003G068900
 0.5
 4.3
 1.7
 5.6
 69

 Potri.008G133400
 0.2
 1.6
 0.8
 2.1
 65

 Potri.003G165000
 0.0
 2.9
 1.5
 4.4
 34

 Potri.011G083900
 0.6
 6.3
 0.6
 6.4
 27

 Potri.001G062500
 -0.4
 2.3
 1.7
 4.4
 26

 Potri.001G1662000
 0.5
 4.1
 0.9
 4.6
 14