

**Table S3.** Quantitative gene expression in control potato plants grown on media with 1.5% or 5% sucrose.

<b>Genes</b>	<b>Organs</b>	<b>1.5% Sucrose</b>	<b>5% Sucrose</b>	<b>p-value (t-test)</b>
<i>StTIR1a</i>	Leaves	861.34	307.16	<b>0.037</b>
	stems	277.46	215.03	0.287
	Roots	303.00	172.92	0.089
<i>StTIR1b</i>	Leaves	92.90	32.89	<b>0.021</b>
	stems	56.73	43.19	0.330
	roots	61.77	35.59	0.126
<i>StTIR1c</i>	Leaves	39.54	6.23	0.116
	stems	38.63	29.08	0.268
	roots	14.46	11.46	0.361
<i>StAFB4</i>	Leaves	379.31	114.00	<b>0.039</b>
	stems	608.30	349.79	0.185
	roots	593.50	200.99	0.175
<i>StAFB6</i>	Leaves	435.55	212.64	0.167
	stems	318.72	168.31	0.143
	Roots	393.08	164.28	0.053
<i>SHAA2</i>	Leaves	3740.56	1037.88	<b>0.038</b>
	Stems	1765.62	933.62	0.147
	Roots	1658.50	480.82	<b>0.026</b>
<i>SHAA3</i>	leaves	2293.82	1176.20	0.202
	stems	2039.02	1486.37	0.172
	roots	1008.19	754.08	0.362
<i>SHAA12</i>	leaves	509.43	73.14	0.191
	stems	272.53	217.40	0.361
	roots	356.44	205.08	0.342
<i>SHAA15</i>	leaves	548.17	115.82	0.242
	stems	185.88	187.67	0.488
	roots	336.81	230.24	0.390
<i>StARF2a</i>	leaves	340.43	339.53	0.499
	stems	571.47	254.95	0.170
	Roots	354.56	131.31	<b>0.015</b>
<i>StARF4</i>	leaves	104.89	121.22	0.424
	stems	331.66	227.15	0.327
	roots	109.11	74.40	0.169
<i>StARF5</i>	leaves	19.04	19.57	0.490
	stems	94.02	151.34	0.347
	roots	203.14	93.97	0.284
<i>StARF6</i>	leaves	34.59	18.63	0.186
	stems	304.25	123.96	0.209
	roots	128.35	28.26	0.215
<i>StARF8b</i>	leaves	23.88	22.86	0.482
	Stems	157.00	98.06	<b>0.038</b>
	roots	37.76	25.16	0.326
<i>StARF18</i>	leaves	9.09	18.24	0.268
	stems	56.60	59.34	0.464
	roots	84.93	28.82	0.095

<i>StARF19a</i>	leaves	138.32	101.32	0.342
	stems	256.40	203.80	0.368
	roots	184.79	116.39	0.170
<i>StHK2</i>	leaves	57.15	73.52	0.119
	stems	102.44	83.94	0.153
	roots	138.06	68.24	<b>0.014</b>
<i>StHK3</i>	leaves	113.56	124.75	0.359
	stems	102.41	118.03	0.264
	roots	278.84	114.36	<b>0.028</b>
<i>StHK4</i>	leaves	84.03	41.11	<b>0.021</b>
	stems	346.82	482.21	0.321
	roots	281.09	271.69	0.477
<i>StHP1a</i>	leaves	482.32	282.97	0.305
	stems	737.62	272.93	0.226
	roots	474.41	749.75	0.251
<i>StHP1b</i>	leaves	138.57	107.64	0.402
	stems	172.57	61.74	0.229
	roots	154.37	142.38	0.466
<i>StHP4a</i>	leaves	97.61	140.61	0.254
	Stems	20.59	2.80	<b>0.010</b>
	roots	4.94	1.52	0.077
<i>StRR4</i>	leaves	920.94	323.44	0.195
	stems	805.54	463.32	0.177
	roots	672.75	838.59	0.097
<i>StRR9a</i>	leaves	710.09	92.38	0.203
	Stems	560.63	187.64	<b>0.018</b>
	roots	445.06	179.36	0.140
<i>StRR9c</i>	leaves	48.90	27.52	0.302
	stems	157.65	209.09	0.141
	roots	129.12	167.72	0.183
<i>StRR9d</i>	leaves	338.03	61.98	0.228
	stems	394.71	110.26	0.301
	roots	704.11	233.15	0.155
<i>StRR1a</i>	leaves	88.81	99.69	0.354
	stems	59.62	60.45	0.480
	roots	89.07	83.93	0.420
<i>StRR1b</i>	leaves	119.59	164.46	0.249
	stems	131.36	156.11	0.138
	roots	285.81	333.89	0.335
<i>StRR11</i>	leaves	19.11	11.05	0.284
	stems	50.64	27.25	0.102
	roots	63.29	25.60	<b>0.050</b>
<i>StRR14</i>	leaves	24.48	14.31	0.063
	stems	34.94	16.28	0.053
	Roots	30.45	12.39	<b>0.002</b>
<i>StRR18a</i>	leaves	68.84	42.36	<b>0.024</b>
	stems	160.93	300.85	<b>0.043</b>

	roots	214.17	125.03	<b><i>0.035</i></b>
<i>StRR18b</i>	leaves	63.56	71.37	0.346
	stems	87.51	60.07	0.173
	Roots	171.18	<b>73.33</b>	<b><i>0.021</i></b>

Relevant differences between 5% and 1.5% columns (fold changes > 2) are marked blue (down-regulation). Significant differences ( $p < 0.05$ ) are marked in bold italics (right column), marginal differences ( $p < 0.1$ ) are marked in italics.