

Supplemental Table 1 Mean gene upregulation (fold change) in wheat plant leaves containing the *Dnx* gene for resistance at 24 h after phloem feeding by Russian wheat aphid biotype 1

Gene ID	Species	Putative ID	Mean Fold Change (+) ^a	<i>P</i> (<i>t</i> -test)	E-value
β-glucanases/ Hydrolases^b					
BJ227672	wheat	β 1,3-glucanase (<i>GLG</i>)	5.64	0.0042	8.0E-53
BJ286329	barley	β 1,3-D-glucan glucanohydrolase isoenzyme	5.26	0.0089	3.0E-60
AF112965	barley	β glucanase	4.94	0.0019	5.0E-58
AF112967	wheat	β 1,3-glucanase	4.25	0.0001	1.0E-21
CA664763	barley	glucan endo-1,3- β -glucosidase precursor	3.14	0.0090	8.0E-10
Y18212	wheat	glucan endo-1,3- β -glucosidase precursor	4.94	0.0215	2.0E-45
CK208387	rice	xyloglucan endo-1,4- β -D-glucanase	2.46	0.0124	2.0E-53
Chitinases					
AB029936	wheat	Chitinase III (<i>Chia-3</i>)	6.77	0.0011	3.0E-69
CK205943	barley	Chitinase (<i>Chia</i>)	4.67	0.0011	1.0E-14
AF112963	wheat	Chitinase II (<i>Chia-2</i>)	4.21	0.0032	5.0E-82
AF112966	wheat	Chitinase IV (<i>Chia-4</i>)	3.01	0.0020	1.0E-82
AB029934	barley	Chitinase	2.06	0.0005	4.0E-55
Membrane Proteins					
CA684533	wheat	WIR1B protein (<i>WIR1B</i>)	5.27	0.0153	7.0E-21
CK169277	wheat	WIR1A protein (<i>WIR1A</i>)	4.61	0.0009	4.0E-34
CA713419	barley	Sec61 alpha subunit	2.91	0.0350	4.0E-34
CK194889	rice	Nodulin-like protein	2.19	0.0416	6.0E-11
CA688344	rice	Hypothet. protein (membrane-attack)	2.48	0.0004	5.0E-28
BU099852	rice	Hypothet. protein (Zn finger domain)	2.58	0.0013	2.0E-26
BJ309335	rice	Putative speckle-type Zn finger domain protein	2.45	0.0068	6.0E-31
Protein Kinases					
BQ165982	wheat	Serine/threonine protein kinase	4.08	0.0158	1.0E-10
CA717510	Arabidopsis	Receptor protein kinase-like protein	3.93	0.0409	7.0E-28

BG907089	rice	Receptor serine/threonine kinase PR5K-like	3.93	0.0177	7.0E-07
CA623616	rice	LRR-like protein	3.65	0.0020	2.0E-16
BT009398	sorghum	LRR-containing glycoprotein precursor	3.51	0.0481	4.0E-07
CA600792	rice	LRR, putative	3.13	0.0068	5.0E-21
CA732035	wheat	Wall-associated kinase 3	2.79	0.0142	7.0E-70
CA744929	rice	Serine/threonine kinase PR5K	2.13	0.0492	2.0E-10
BQ162481	rice	Intramembrane serine protease	2.14	0.0043	2.0E-11
BJ264288	rice	Putative potyviral helper protease-interacting protein	3.00	0.0072	2.0E-54
CA686730	rice	OSJNBa0081C01.17 protein	2.73	0.0047	9.0E-59
BE424472	rice	Calcium-dependent protein kinase	2.56	0.0000	3.0E-52

Calcium and Iron Ion Binding

BJ254055	wheat	Peroxidase precursor	7.31	0.0008	8.0E-32
CK199508	rice	Peroxidase 3 precursor	4.07	0.0207	4.0E-61
AF181661	wheat	EF-hand Ca ²⁺ -binding protein	2.51	0.0001	5.0E-24
CA687531	maize	Annexin p33	2.10	0.0009	2.0E-52
BJ321259	rice	Calmodulin-2	4.06	0.0068	8.0E-56
BT009397	rice	Fungal elicitor response gene	3.71	0.0007	3.0E-27
CA745732	barley	Mlo3	3.03	0.0019	2.0E-45
BJ229742	rice	Glutathione transferase	2.94	0.0362	8.0E-75
CA652948	rice	Glutathione S-transferase	2.85	0.0233	5.0E-32
BE515437	rice	Glutathione S-transferase (fragment)	2.84	0.0053	7.0E-36
CD883484	rice	Monosaccharide transporter 4	2.95	0.0086	1.0E-13
CA647624	barley	HGA6 (carbohydrate transport)	3.04	0.0436	8.0E-35
CA742640	rice	HGWP repeat containing protein	2.81	0.0314	3.0E-29

Monoxygenase/Oxidoreductase

CA603417	rice	Putative cytochrome P450	8.56	0.0001	7.0E-23
Q5WMQ8	rice	Putative cytochrome P450	7.56	0.0017	2.0E-20
CA670384	rice	Putative cytochrome P450 monooxygenase	7.32	0.0028	4.0E-17
AY596268	wheat	Polyphenol oxidase (fragment)	5.08	0.0015	2.0E-53
CA666521	rice	Putative cytochrome P450	5.07	0.0292	9.0E-33
CA668708	rice	Putative cytochrome P450	4.53	0.0066	1.0E-12
CD875437	rice	Putative membrane protein	4.40	0.0045	2.0E-15
CA691758	rice	Putative cytochrome P450	2.61	0.0225	2.0E-21

CA663807	wheat	Cytochrome P450	2.55	0.0099	4.0E-15
CA668908	rice	Putative elicitor-inducible cytochrome P450	2.02	0.0194	2.0E-42
CA599187	rice	Putative Fe-dependent oxidoreductase	3.92	0.0107	9.0E-11
CN009367	<i>Lithospermum</i>	LEDI-5c protein (oxidoreductase)	2.81	0.0330	2.0E-53
CA601808	rice	Putative oxidoreductase	2.50	0.0269	3.0E-10
BT008984	rice	Putative ascorbate oxidase AO4	4.02	0.0013	1.0E-36
AJ610099	rice	Putative flavanone 3-hydroxylase	5.02	0.0018	1.0E-70
CA695230	rice	Putative anthocyanidin hydroxylase	4.77	0.0202	5.0E-29
CA692409	rice	Sterol 14-demethylase (fragment)	2.77	0.0060	4.0E-22
BJ253690	tulip tree	Laccase (EC 1.10.3.2)	2.74	0.0223	7.0E-09
CA679100	rice	Oxidoreductase	4.63	0.0370	1.0E-31

Salicylate Signaling

AF384143	wheat	PR protein 1	7.89	0.0085	2.0E-32
CD915938	wheat	PR protein 4	6.99	0.0045	3.0E-14
CA692789	wheat	PR protein 4	4.42	0.0048	1.0E-22
AF442967	wheat	Thaumatococcus-like protein	5.82	0.0377	2.0E-59
CA721939	wheat	Thaumatococcus-like protein	4.95	0.0031	9.0E-22
CD863039	wheat	Thaumatococcus-like protein precursor	2.72	0.0086	2.0E-33
CA668995	barley	Thaumatococcus-like protein TLP8	2.93	0.0079	1.0E-45
CK195830	rice	WRKY12 transcription factor	4.92	0.0007	2.0E-11
CK161752	barley	Putative WRKY1 protein	2.95	0.0130	3.0E-13
CA623872	rice	WRKY10	2.22	0.0001	4.0E-32
CA698434	barley	Putative WRKY5 protein	2.18	0.0228	2.0E-14
CA662086	rice	Putative SA-binding protein 2	4.53	0.0016	2.0E-12
CK208840	rice	Alternative oxidase	2.71	0.0014	4.0E-42
CA606181	rice	Ankyrin-like protein	2.49	0.0025	1.0E-07
BE604247	barley	Putative nematode-resistance protein	2.11	0.0173	4.0E-29

Pathogen Defense Response Proteins

BJ302168	rice	Aucellin-like aspartic protease-like protein)	4.69	0.0236	1.0E-06
CK163901	rice	NBS-LRR-like protein	3.51	0.0106	4.0E-17
BJ286240	rice	Putative Avr9/Cf-9 rapidly elicited protein	2.85	0.0025	1.0E-36
CD937391	rice	Putat. hydroxyanthranilate hydroxycinnamoyltransferase 3	2.46	0.0003	5.0E-13

CK216297	maize	Bet v I allergen	2.44	0.0273	3.0E-51
BJ273225	barley	SNAP-34	2.39	0.0000	6.0E-21
BJ214918	barley	NBS-LRR disease resistance protein homologue	3.17	0.0165	7.0E-64
BJ213107	barley	NBS-LRR disease resistance protein homologue	2.62	0.0004	5.0E-15
AY249528	soybean	Disease resistance protein homologue	3.07	0.0357	3.0E-60
BG606917	barley	Myb4 transcription factor fragment	2.04	0.0015	4.0E-14
BJ282389	rice	Putative myb protein	3.00	0.0362	2.0E-18
BJ243736	rice	Putative phosphatidylinositol phosphatidylcholine transferase protein	2.44	0.0440	1.0E-62
CK209172	rice	Putative ornithine decarboxylase	2.39	0.0347	3.0E-43
BJ234909	maize	Homocysteine S-methyltransferase 1	2.20	0.0363	5.0E-56
CA670445	barley	Methionine synthase 2 enzyme	2.10	0.0102	1.0E-51
Jasmonate Signaling					
CK196251	rice	β -ketoacyl-CoA synthase	3.83	0.0015	6.0E-56
CD452988	rice	GDSL lipase/acylhydrolase	3.40	0.0002	2.0E-07
CA712411	rice	Hydrolase	3.02	0.0119	5.0E-40
CD884095	rice	Putative Defective Anther Dehiscence1	2.94	0.0003	3.0E-06
BT008992	barley	Lipoxygenase 1	2.78	0.0120	8.0E-21
CA616263	sesame	σ --3 fatty acid desaturase	2.27	0.0103	5.0E-08
CA616263	sesame	σ --3 fatty acid desaturase, chloroplast precursor	2.24	0.0019	5.0E-08
CA650490	rice	12-OPDA reductase	2.07	0.0653	3.0E-61
Arthropod Chemical Defense Proteins					
X85228	human	Super cysteine rich protein (fragment)	4.68	0.0400	9.0E-09
CA689554	rice	Putative cycloartenol synthase	4.85	0.0303	2.0E-46
CA690727	barley	Ent-kaurene synthase-like protein	2.89	0.0018	7.0E-28
CA667998	rice	Putative monoterpene synthase	2.25	0.0216	4.0E-19
BQ162134	rice	Shikimate kinase 2	2.88	0.0007	6.0E-59
BQ169201	rice	Putative UDP-glucose glucosyltransferase	3.62	0.0068	1.0E-34
CA651243	rice	Putative flavonol 4'-sulfotransferase	3.55	0.0026	3.0E-07
BJ281711	rice	Putative UDP-glucose:salicylic acid glucosyltransferase	2.70	0.0119	9.0E-25
CA695961	rice	Putative UDP-glucose: flavonoid 7-O-glucosyltransferase	2.68	0.0035	3.0E-38
CA670456	rice	Glucosyltransferase	2.30	0.0002	1.0E-14

BQ578676	barley	Bowman-Birk type trypsin inhibitor	2.42	0.0046	5.0E-32
CK216349	rice	Trypsin α -amylase inhibitor	5.22	0.0018	5.0E-07
CA611113	rice	PDR4 ABC transporter	3.74	0.0013	1.0E-22
CA682753	rice	PDR-like ABC transporter	3.44	0.0186	3.0E-39
BJ239965	rice	ABC transporter permease protein	3.47	0.0049	4.0E-28
CK216158	rice	Putative cupin family protein	2.59	0.0054	4.0E-20
CA652856	wheat	Germin-like protein precursor	3.92	0.0096	6.0E-17
BJ285213	rice	Putative polygalacturonase inhibitor	3.58	0.0070	9.0E-34

Abscisic Acid Signaling

BJ226189	rice	C2 GRAM domain-containing protein	4.00	0.0019	1.0E-12
CK215979	rice	Putative phi-1 (<i>PHI</i>)	3.78	0.0011	5.0E-36
BJ225818	rice	Putative phi-1 (<i>PHI</i>)	2.70	0.0019	3.0E-30
AJ611498	rice	Putative phi-1 (<i>PHI</i>)	2.07	0.0093	2.0E-33

Ethylene Signaling

CA655474	rice	Ethylene-insensitive-3-like protein (<i>EIN3</i>)	2.58	0.0294	2.0E-21
BJ285466	rice	AP2 domain-containing transcription factor	3.73	0.0009	1.0E-05

Arthropod Physical Defense Proteins

BJ281221	wheat	Phenylalanine ammonia-lyase (<i>PAL</i>) fragment	5.81	0.0076	7.0E-33
BF199967	wheat	Phenylalanine ammonia-lyase	4.88	0.0006	3.0E-47
CK193066	rice	Cinnamyl alcohol dehydrogenase (<i>CAD</i>)	2.15	0.0021	1.0E-20
CK199451	rice	Putative cinnamoyl-CoA reductase	2.09	0.0004	1.0E-28
CK212487	wheat	Cinnamoyl-CoA reductase (<i>CCR</i>)	2.47	0.0224	6.0E-32
CK215460	faba bean	4-coumarate: CoA ligase	2.50	0.0111	5.0E-17
CD898086	rice	Putative latex-abundant protein	4.09	0.0085	5.0E-24
CA625572	maize	40S ribosomal protein S8	2.40	0.0139	5.0E-21
CA681727	rice	Putative ribosomal protein S29	2.24	0.0019	1.0E-28
BT009301	rice	Putative sorbitol transporter	3.21	0.0225	4.0E-27
BT009444	rice	Putative UDP-glucose dehydrogenase	2.17	0.0012	2.0E-48
CD872898	rice	Putative galactosyltransferase	5.66	0.0002	3.0E-35
BG607332	maize	Roothairless 3	3.58	0.0231	4.0E-15
CA715084	rice	UDP-glucuronic acid decarboxylase	3.06	0.0065	2.0E-34
BJ296624	barley	UDP-D-glucuronate decarboxylase (fragment)	2.38	0.0001	4.0E-43
CA609522	rice	Fiber protein Fb2-like	2.29	0.0111	9.0E-33

CA699183	rice	Cellulose synthase-like A1 (<i>CsIA</i>)	3.48	0.0037	5.0E-39
CK194966	rice	Cellulose synthase-like D2 (<i>CSLD2</i>)	2.04	0.0000	3.0E-28
BQ171266	rice	Cell cycle associated protein Mob1-like protein	3.97	0.0249	1.0E-23
BJ306089	rice	Putative cytokinin dehydrogenase	3.42	0.0096	9.0E-27
AB029887	wheat	Sucrose:fructan 6-fructosyltransferase (6- <i>SFT</i>)	6.62	0.0008	2.0E-18
CK206362	wheat	Sucrose:sucrose 1-fructosyltransferase (1- <i>SST</i>)	2.64	0.0039	4.0E-46
CA631663	wheat	Endotransglucosylase/hydrolase (<i>XTH5</i>)	2.93	0.0368	3.0E-06
CN011869	barley	Xyloglucan endotransglycosylase (<i>XET</i>)	4.48	0.0487	5.0E-42
CA686606	rice	Putative XET	3.99	0.0069	9.0E-52
BJ228146	rice	XET precursor	3.03	0.0259	1.0E-13
CK212220	sugarcane	Mitochondrial alternative oxidase 1d	3.61	0.0035	3.0E-27
BJ286960	wheat	Blue copper-binding protein homolog	3.96	0.0015	2.0E-08
BJ230140	rice	Putative aldose reductase	2.45	0.0442	2.0E-49
CK212407	wheat	Putative vacuolar defense protein precursor	2.22	0.0366	2.0E-62
CA655789	rice	Putative tonoplast membrane integral protein	2.14	0.0008	7.0E-23
BJ229131	rice	Spl7 protein	4.15	0.0016	7.0E-16
CK202183	rice	Putative B12D protein	3.31	0.0306	3.0E-15
BJ272922	rice	Transcription factor	3.61	0.0020	1.0E-24
BJ292438	rice	BCS1 ATP & nucleotide binding protein	2.90	0.0096	2.0E-51
CA611762	rice	Putative nucleic acid binding protein	2.70	0.0406	3.0E-39
AJ613161	rice	Putative phytosulfokine receptor	2.52	0.0445	1.0E-41

^a Mean log₂ transcript values present or marginal in 4 of 6 arrays hybridized with *Dnx* probes .

^b Functional classification determined by GO Annotation Pub Med .