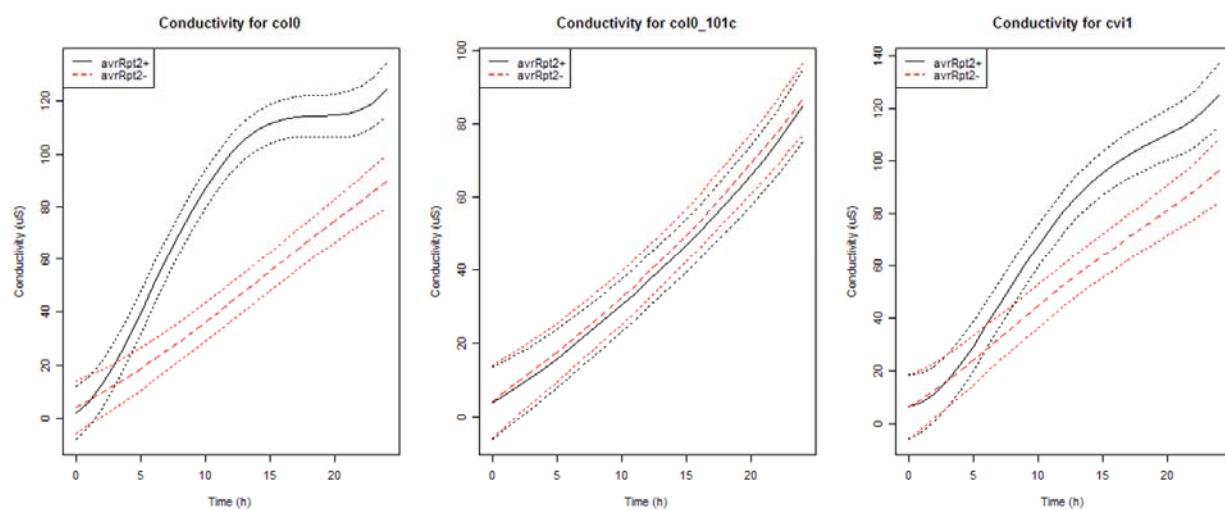


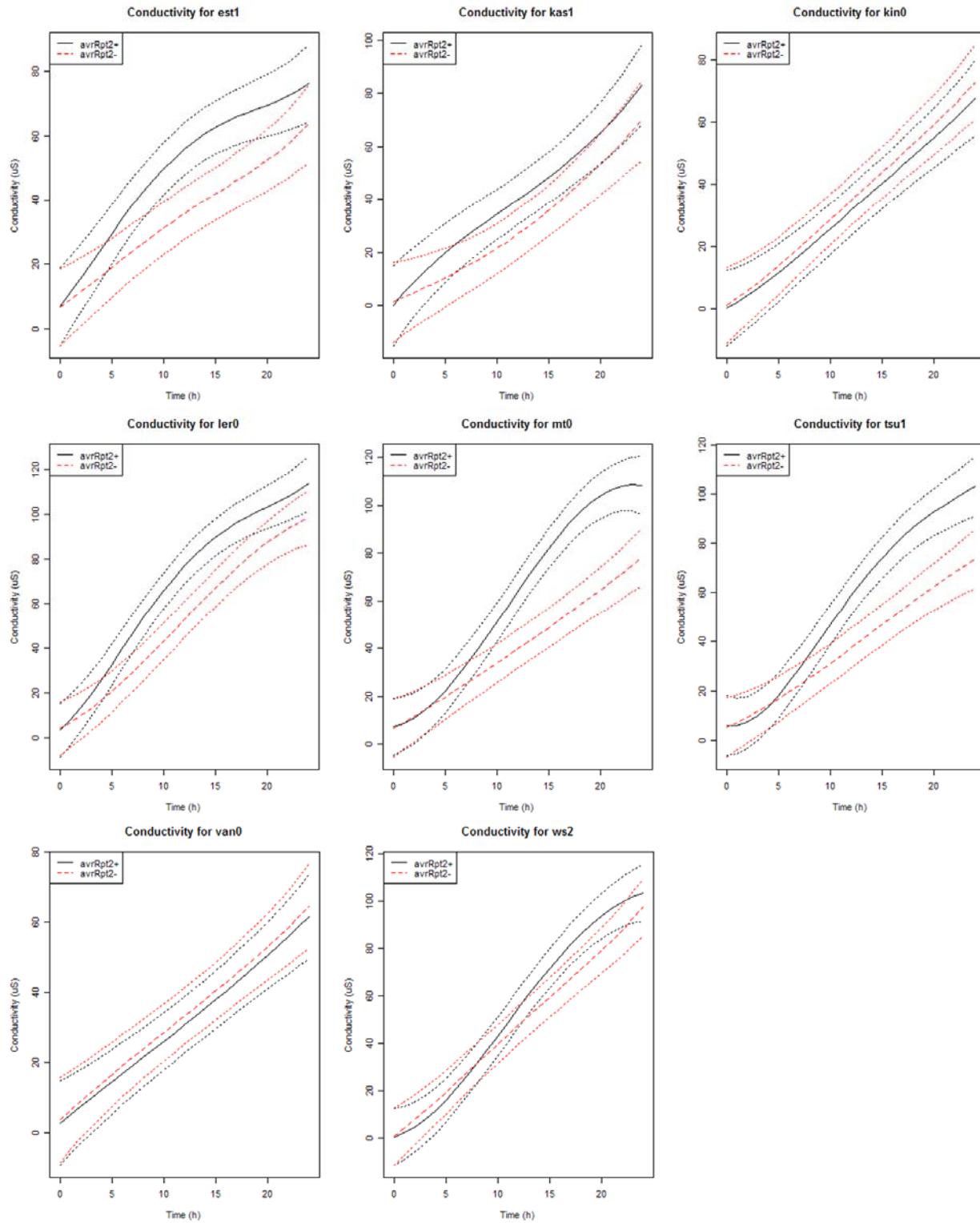
Supplemental Data. van Poecke et al. Natural Variation in *RPS2*-Mediated Resistance Among *Arabidopsis* Accessions: Correlation Between Gene Expression Profiles and Phenotypic Responses.

Supplemental Figure 1. Geographic origins of the *Arabidopsis* accessions used are indicated on the world map. In the inset, the altitudes of the origins are indicated.

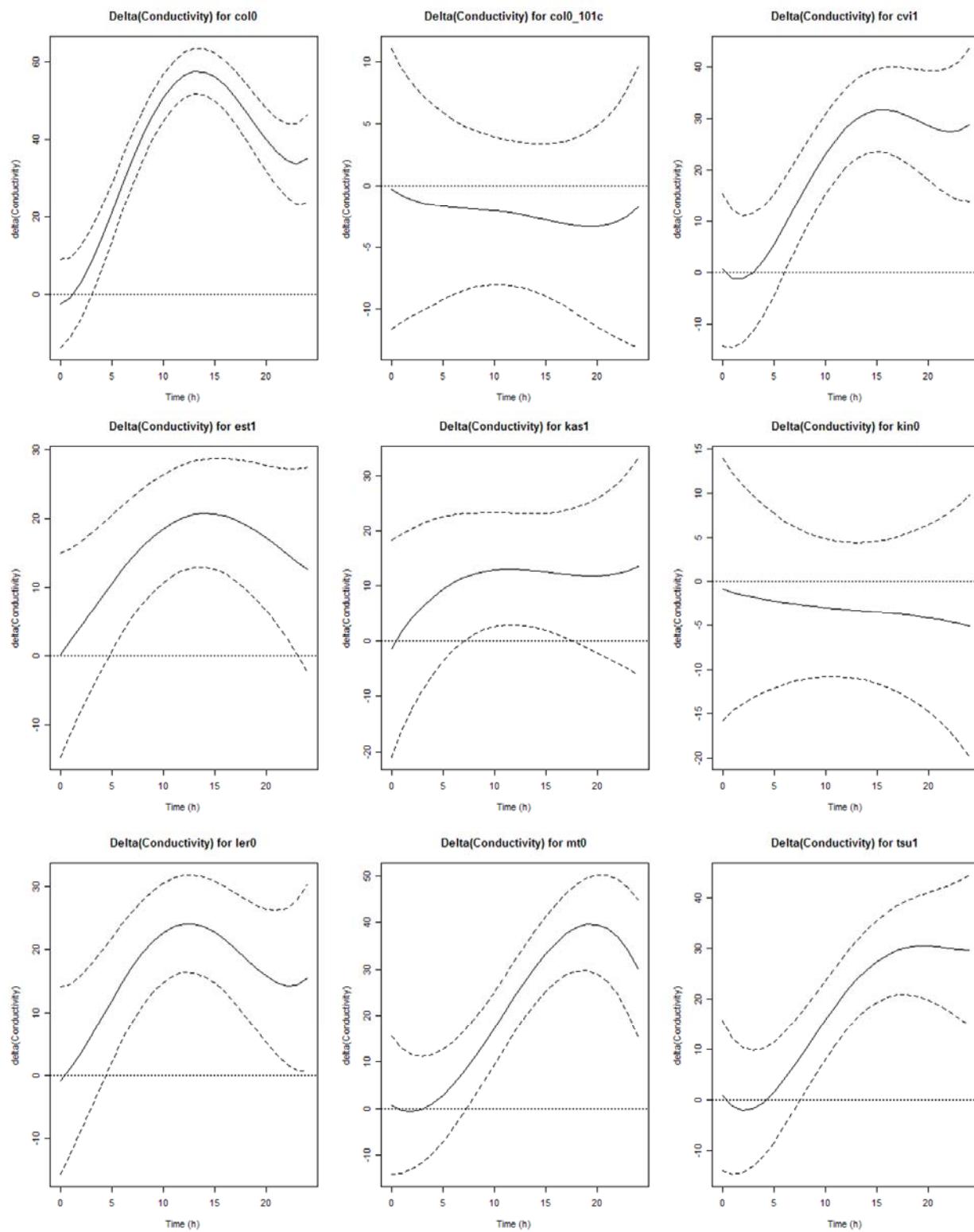


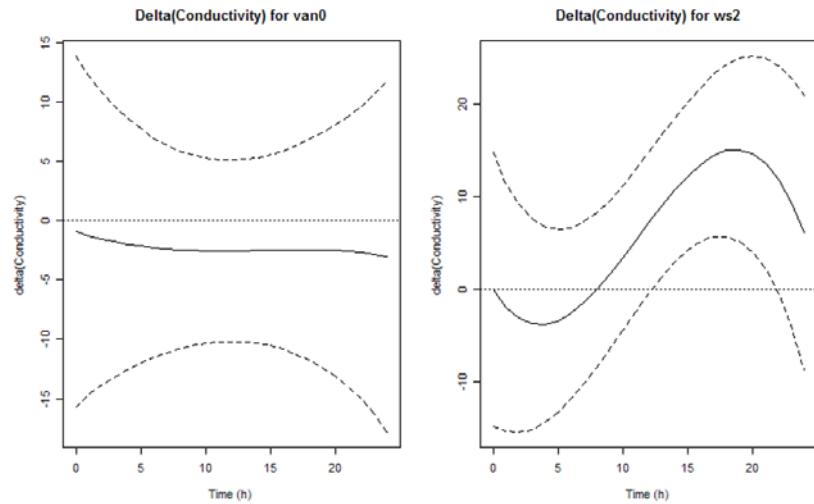
Supplemental Figure 2. Conductivity for all plant genotypes. Each panel corresponds to one of the genotypes, as indicated. The leaf disks were infected with either *Pst* *avrRpt2* (*avrRpt2+*, black) or *Pst* (*avrRpt2-*, red). The fitted conductivity value time course using a mixed linear model described in METHODS is plotted. The dotted curves above and below the solid or dashed curves indicate the 95% confidence interval.



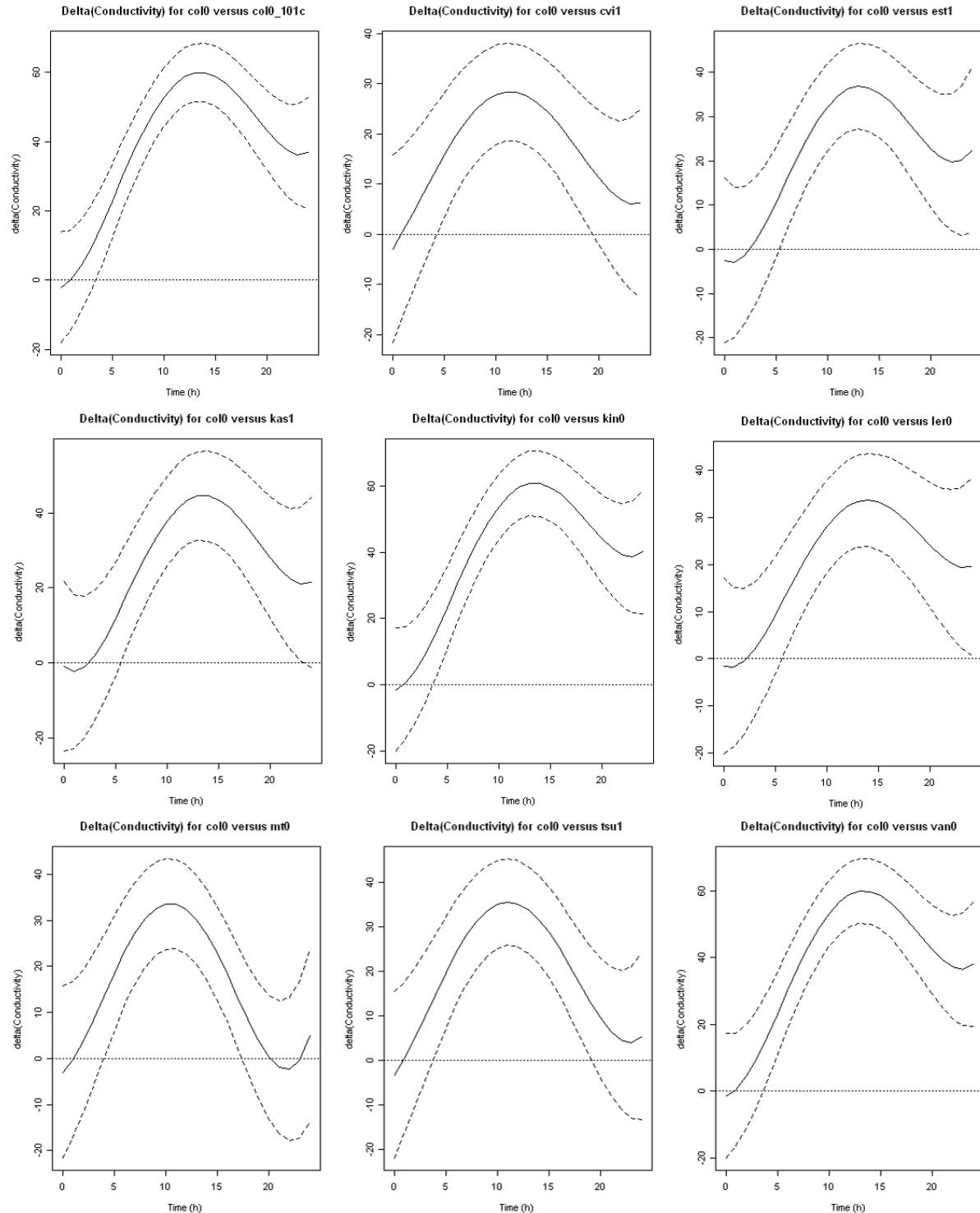


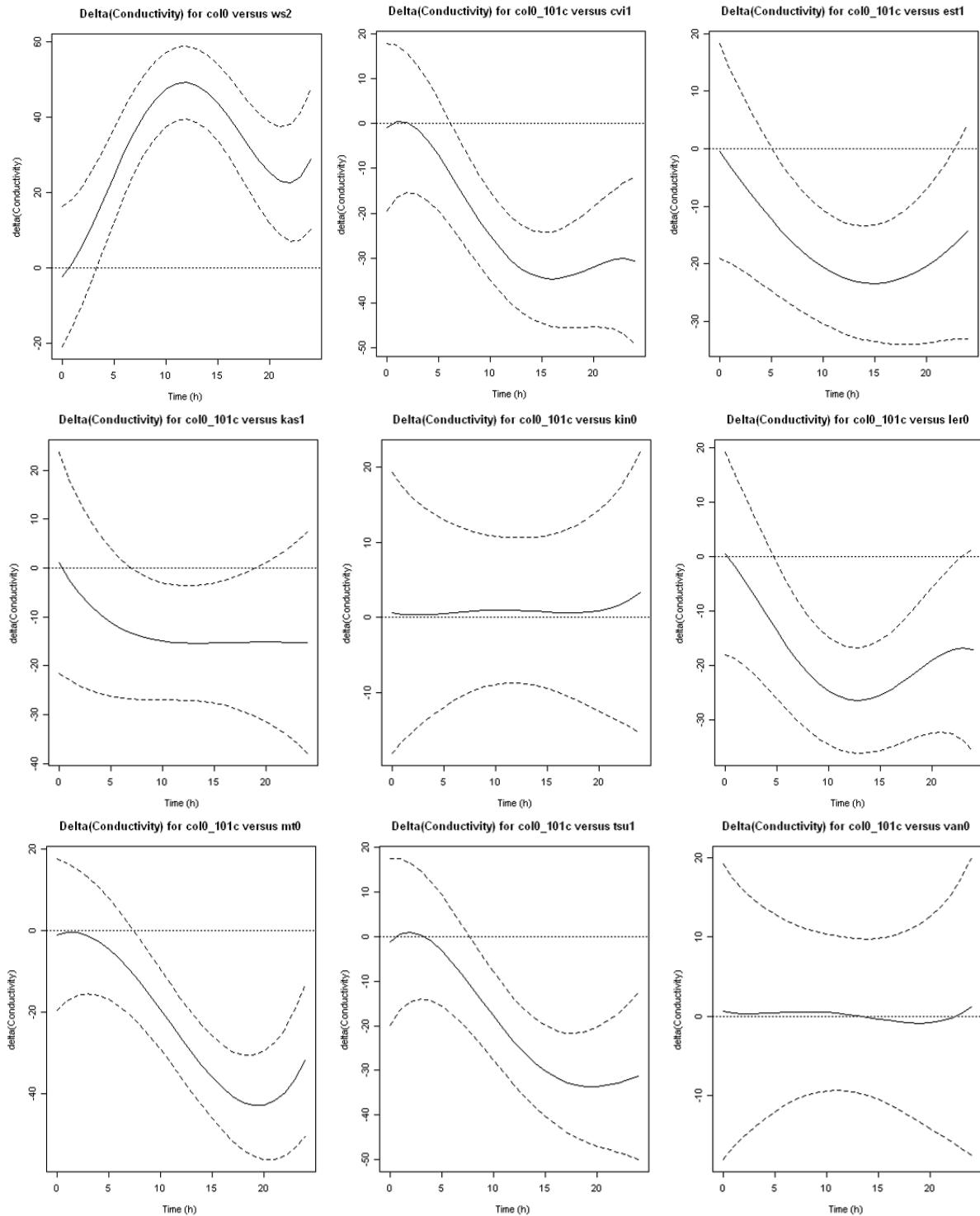
Supplemental Figure 3.  $\Delta$ Conductivity for all plant genotypes. Each panel corresponds to one of the genotypes, as indicated. The fitted time course of the difference between the conductivities with *Pst avrRpt2*- and *Pst*-infected leaf disks ( $\Delta$ Conductivity) is plotted as a solid curve. The dotted curves above and below the solid curve indicate the 95% confidence interval.

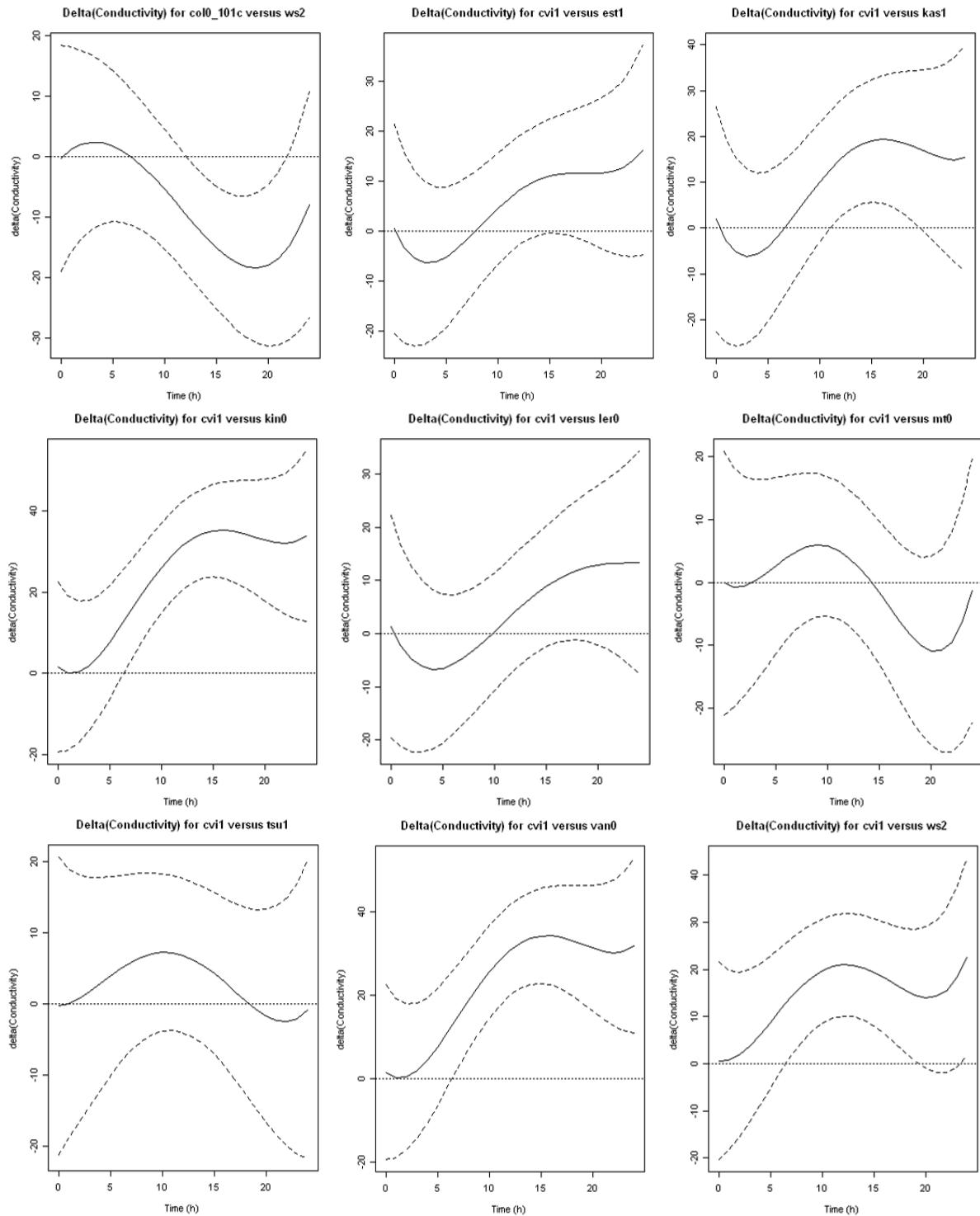


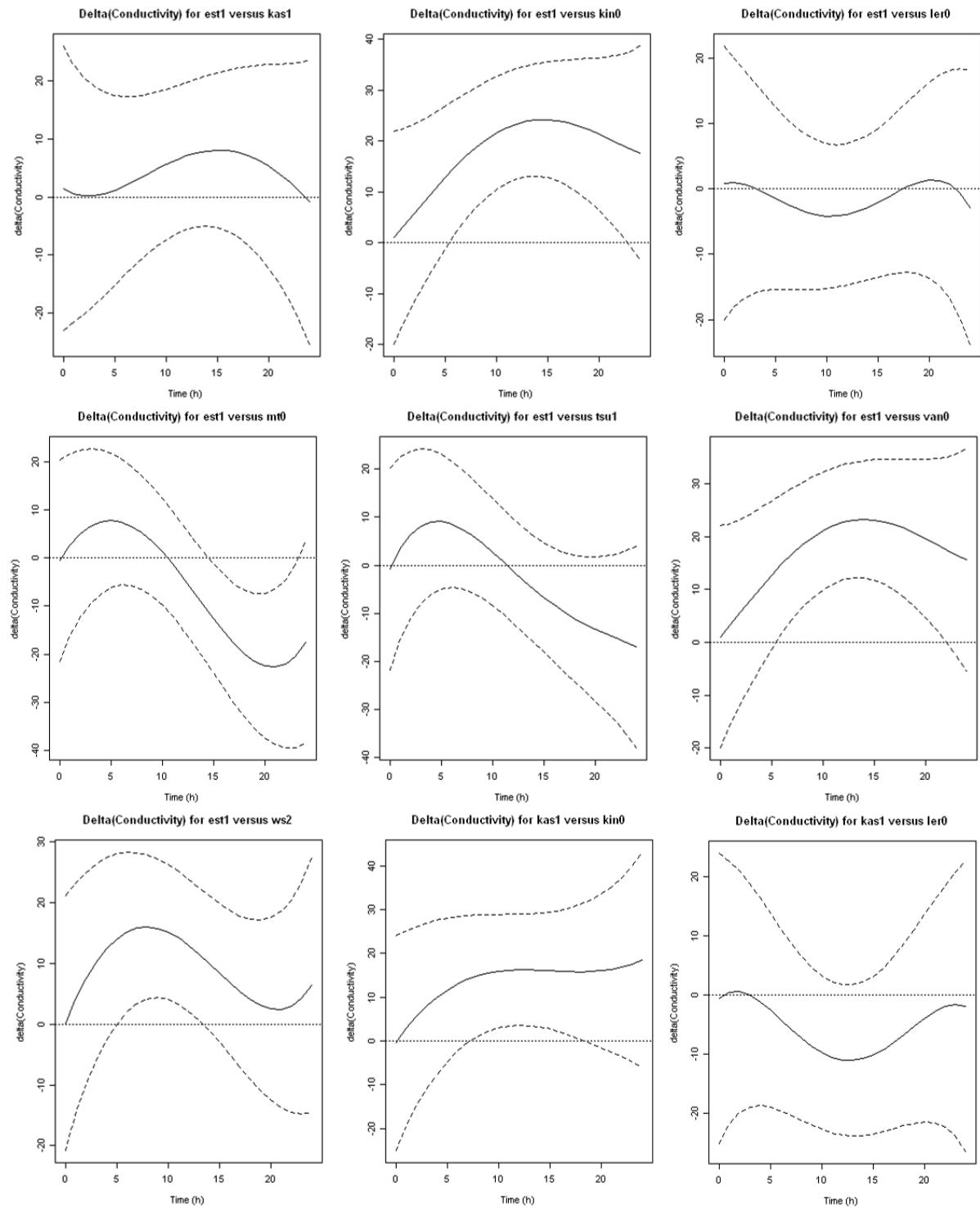


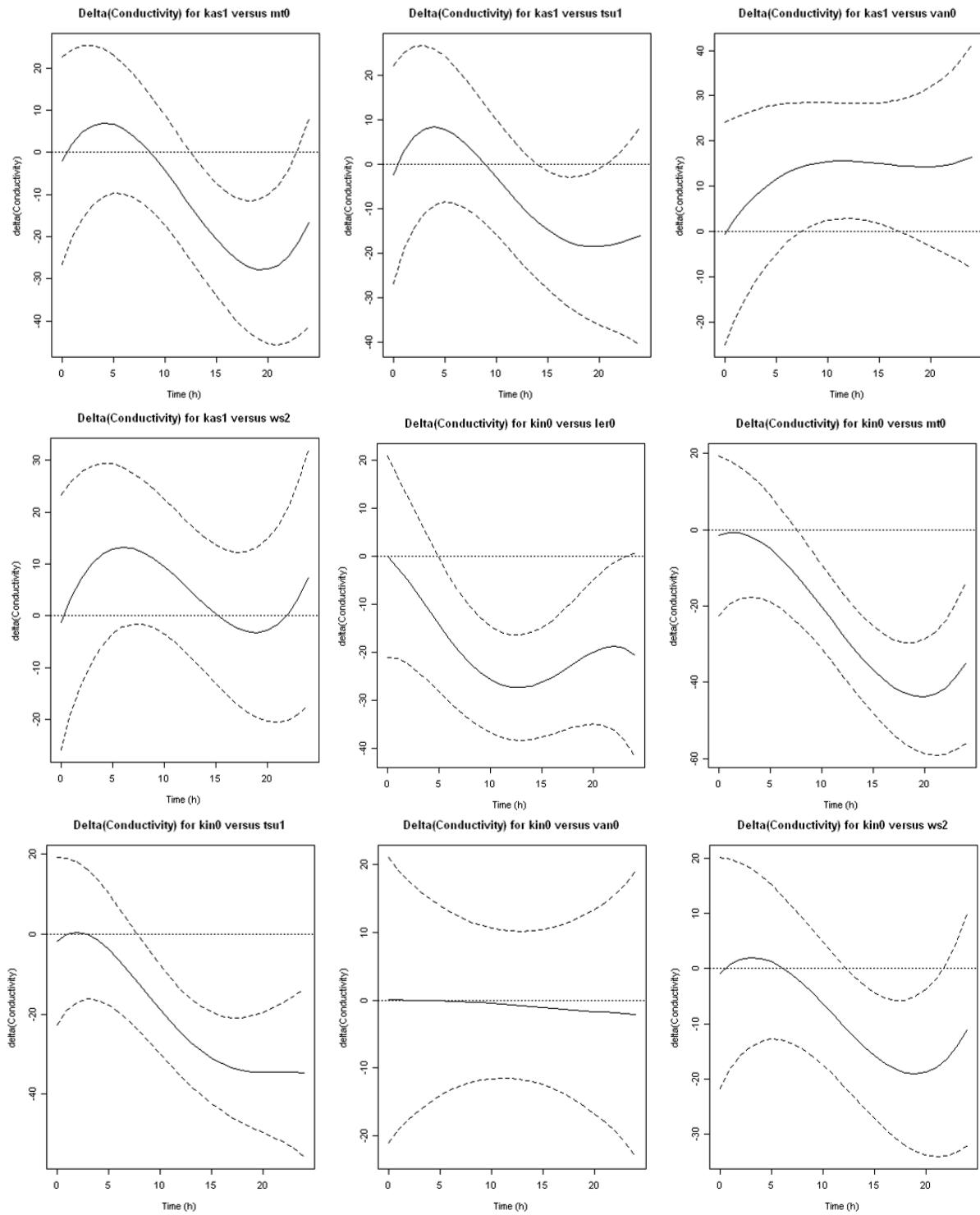
Supplemental Figure 4.  $\Delta\Delta$ Conductivity for all pair-wise comparisons among all plant genotypes. Each panel corresponds to one of the pair-wise genotype comparisons, as indicated. The fitted time course of the difference in the  $\Delta$ Conductivity between two genotypes is plotted as a solid curve. The dotted curves above and below the solid curve indicate the 95% confidence interval.

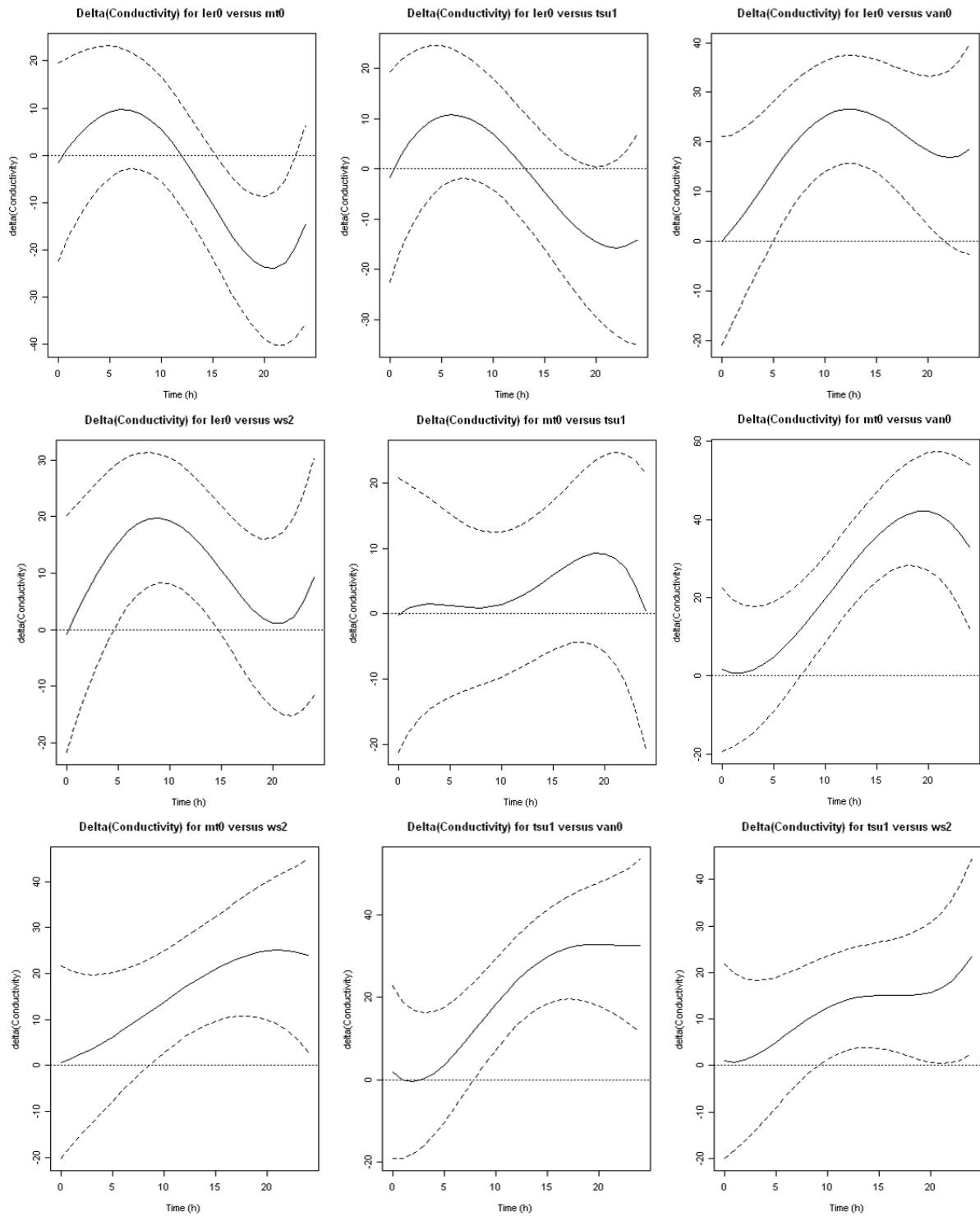


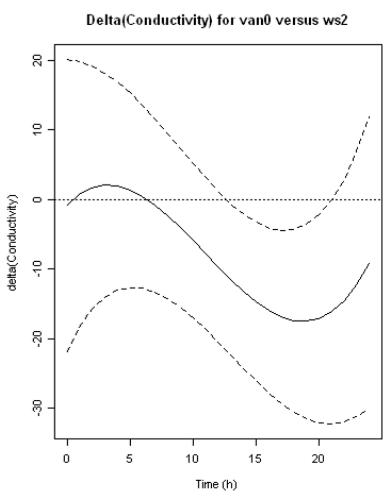




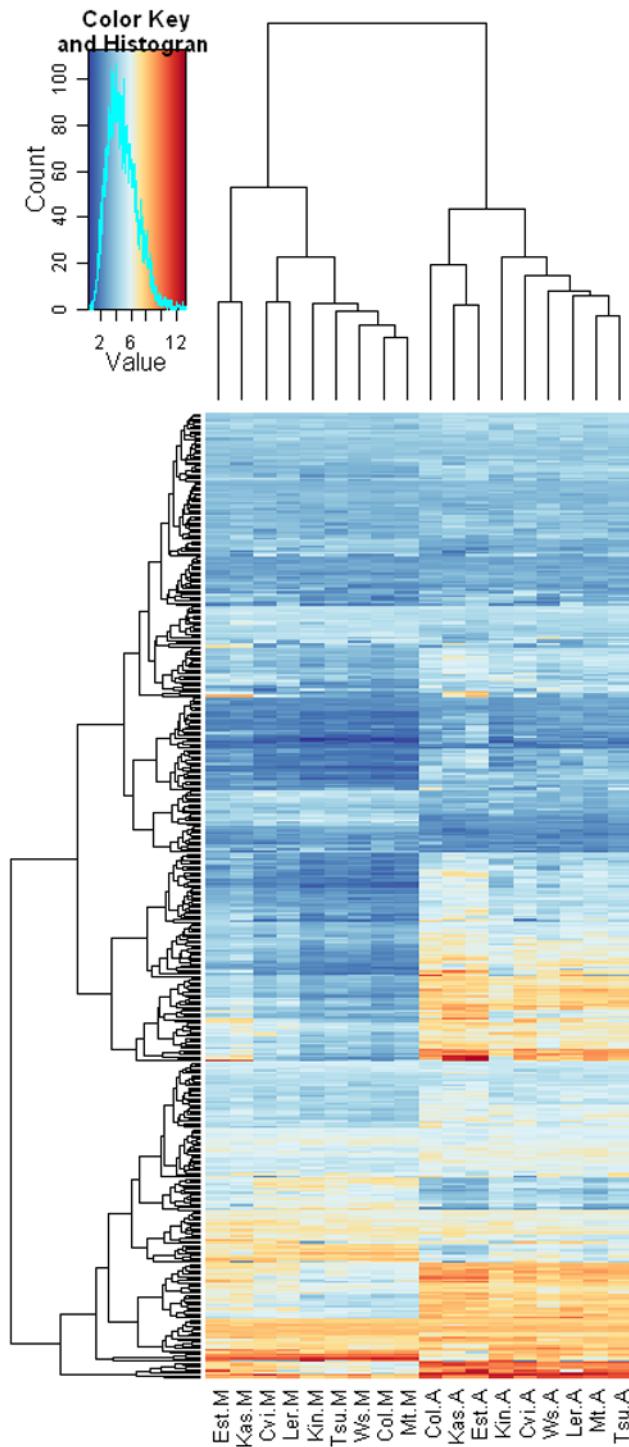








Supplemental Figure 5. Heatmap of gene expression profiles of nine selected accessions. Log<sub>2</sub>-transformed expression values of 466 genes in nine accessions 6 hours after either mock (M)- or *Pst avrRpt2* (A)-infection were clustered by average-linkage agglomerative hierarchical clustering using the Euclidean distance as a distance metric. The color key and the histogram of expression values are shown in the top left corner.



Supplemental Table 1. Broad-sense heritabilities of the measured values

Methods: For each phenotypic characteristic or for expression of each gene, the following linear model was fitted to the data using the lmer function in the lme4 package of R.

$\text{measurement} \sim (1 | \text{genotype}) + (1 | \text{replicate})$

where genotype, replicate, and residuals are random factors.

The summary of the lmer object returns the variance for each random factor. The broad-sense heritability was calculated as the ratio of the variance for the genotype effect to the sum of the variances for all the three random factors.

For example, the broad-sense heritability for *Pst avrRpt2* growth 2 dpi was calculated as follows. “bugA2.data” is a data.frame object with the  $\log_{10}$ -transformed bacterial count data. It has total 256 observations (rows) with 11 accessions (including rps2-101C) from three independent experiments. Its first 4 rows look like:

	Accession	Counts	Day	Treatment	Experiment	Plant
90	col	4.755875	2	A	1	2
91	col	4.643453	2	A	1	3
92	col	4.255273	2	A	1	4
93	col	4.012837	2	A	1	5

The R code to fit the above model to the data is:

```
library(lme4)
lmA2 <- lmer( Counts ~ (1|Accession) + (1|Experiment), data =
bugA2.data )
```

The summary of the fitted model can be retrieved by “summary(lmA2)”:

```
Linear mixed-effects model fit by REML
Formula: Counts ~ (1 | Accession) + (1 | Experiment)
Data: bugA2.data
AIC   BIC logLik MLdeviance REMLdeviance
586.7 597.3 -290.3      580.5      580.7
Random effects:
Groups      Name Variance Std.Dev.
Accession    1.206469 1.09839
Experiment   0.057623 0.24005
Residual     0.466416 0.68295
number of obs: 256, groups: Accession, 11; Experiment, 3

Fixed effects:
Estimate Std. Error t value
(Intercept)  3.0672    0.3616   8.483
```

For the random factors, Accession, Experiment, and Residual, the variances of their effects are 1.206469, 0.057623, and 0.466416, respectively. So, the broad-sense heritability is  $1.206469/(1.206469+0.057623+0.466416) = 0.6971 \sim 0.70$ .

Broad-sense heritability in the bacterial growth data					
Pst Day0	Pst Day1	Pst Day2	Pst avrRpt2 Day0	Pst avrRpt2 Day1	Pst avrRpt2 Day2
0.05	0.50	0.43	0.05	0.58	0.70

Broad-sense heritability in the electrolyte leakage data									
	0h	3h	6h	9h	12h	15h	18h	21h	24h
Pst avrRpt2	0.04	0.23	0.52	0.64	0.65	0.62	0.59	0.56	0.51
Pst	0.02	0.14	0.27	0.36	0.38	0.37	0.34	0.33	0.30

Broad-sense heritability in the RPS2 and actin2(control) expression levels		
gene	Pst avrRpt2	Mock
actin2	0.09	0.19
RPS2	0.19	0.49

Broad-sense heritability in expression of each gene		
gene	mock	Pst avrRpt2
At1g02140	0.66	0.68
At1g02450	0.52	0.37
At1g03220	0.36	0.10
At1g04410	0.56	0.86
At1g05010	0.29	0.00
At1g05340	0.36	0.79
At1g05570	0.48	0.81
At1g08050	0.25	0.38
At1g08510	0.23	0.02
At1g08720	0.60	0.24
At1g08830	0.15	0.22
At1g08930	0.54	0.35
At1g09070	0.61	0.39
At1g09130	0.33	0.34
At1g09200	0.30	0.28
At1g09500	0.13	0.66
At1g09970	0.48	0.21
At1g10070	0.44	0.78
At1g10585	0.36	0.26
At1g10950	0.40	0.17
At1g11050	0.00	0.00
At1g11260	0.47	0.67
At1g11310	0.46	0.66
At1g11580	0.79	0.73
At1g11650	0.63	0.45

At1g12110	0.26	0.80
At1g12240	0.85	0.74
At1g12520	0.55	0.63
At1g13320	0.75	0.60
At1g14870	0.62	0.65
At1g14980	0.51	0.36
At1g15210	0.14	0.00
At1g15670	0.67	0.47
At1g17020	0.01	0.53
At1g17420	0.00	0.21
At1g19150	0.86	0.58
At1g19250	0.80	0.89
At1g19670	0.37	0.64
At1g20440	0.46	0.50
At1g21240	0.69	0.18
At1g21250	0.71	0.12
At1g21750	0.48	0.11
At1g23040	0.59	0.74
At1g24100	0.34	0.47
At1g25490	0.84	0.75
At1g26380	0.23	0.51
At1g27100	0.05	0.19
At1g27130	0.54	0.27
At1g27730	0.28	0.03
At1g28480	0.56	0.47
At1g30040	0.00	0.45
At1g30400	0.37	0.65
At1g32210	0.22	0.50
At1g33960	0.65	0.97
At1g35230	0.77	0.93
At1g43160	0.00	0.70
At1g44350	0.39	0.24
At1g45145	0.62	0.65
At1g47830	0.34	0.14
At1g51660	0.54	0.12
At1g51680	0.35	0.15
At1g53840	0.18	0.54
At1g54010	0.68	0.66
At1g59870	0.43	0.51
At1g61560	0.40	0.29
At1g62300	0.45	0.19
At1g62570	0.68	0.89
At1g62660	0.62	0.59
At1g64710	0.26	0.52
At1g64980	0.50	0.67

At1g65500	0.47	0.77
At1g66340	0.26	0.00
At1g67350	0.22	0.39
At1g67360	0.54	0.35
At1g68620	0.71	0.85
At1g68840	0.56	0.17
At1g69490	0.00	0.65
At1g70410	0.50	0.55
At1g71030	0.22	0.39
At1g71880	0.53	0.67
At1g72610	0.42	0.75
At1g72710	0.17	0.53
At1g72930	0.88	0.85
At1g74020	0.46	0.49
At1g74710	0.62	0.70
At1g75040	0.74	0.86
At1g75950	0.43	0.22
At1g76490	0.42	0.18
At1g76960	0.45	0.47
At1g77510	0.33	0.74
At1g77760	0.30	0.43
At1g78080	0.40	0.00
At1g78670	0.74	0.60
At1g78900	0.32	0.23
At1g79550	0.37	0.71
At1g80040	0.36	0.21
At1g80460	0.60	0.45
At1g80830	0.46	0.40
At1g80840	0.00	0.67
At2g01450	0.00	0.36
At2g01970	0.22	0.06
At2g02100	0.77	0.65
At2g02930	0.66	0.59
At2g02990	0.29	0.51
At2g03680	0.27	0.60
At2g03760	0.67	0.87
At2g04160	0.66	0.57
At2g04400	0.80	0.89
At2g04700	0.64	0.72
At2g05940	0.59	0.80
At2g06050	0.52	0.26
At2g06850	0.79	0.35
At2g13810	0.13	0.63
At2g14560	0.46	0.27
At2g14610	0.87	0.90

At2g14620	0.00	0.68
At2g15390	0.56	0.40
At2g15970	0.81	0.79
At2g16510	0.46	0.15
At2g17120	0.58	0.59
At2g17450	0.73	0.60
At2g17500	0.51	0.77
At2g18210	0.93	0.84
At2g18660	0.79	0.86
At2g18680	0.54	0.39
At2g18690	0.00	0.53
At2g18960	0.12	0.09
At2g19190	0.44	0.57
At2g19310	0.92	0.94
At2g19790	0.46	0.66
At2g20790	0.49	0.38
At2g21660	0.15	0.64
At2g22330	0.80	0.68
At2g22500	0.25	0.53
At2g22690	0.18	0.12
At2g22860	0.01	0.00
At2g23090	0.01	0.17
At2g23450	0.27	0.21
At2g24200	0.30	0.00
At2g25110	0.27	0.22
At2g25450	0.96	0.96
At2g25670	0.06	0.21
At2g25900	0.53	0.62
At2g26690	0.84	0.66
At2g27860	0.40	0.21
At2g28190	0.12	0.10
At2g28210	0.00	0.83
At2g28400	0.36	0.49
At2g28510	0.11	0.12
At2g28910	0.68	0.63
At2g29080	0.12	0.09
At2g29350	0.76	0.91
At2g29420	0.49	0.38
At2g29450	0.65	0.51
At2g29460	0.48	0.84
At2g29500	0.74	0.93
At2g29720	0.00	0.00
At2g29980	0.30	0.53
At2g30250	0.48	0.49
At2g30490	0.01	0.16

At2g30550	0.55	0.68
At2g30770	0.73	0.92
At2g30930	0.59	0.55
At2g31400	0.44	0.62
At2g31890	0.49	0.42
At2g32150	0.51	0.70
At2g33150	0.21	0.05
At2g33220	0.74	0.75
At2g33380	0.48	0.64
At2g33830	0.59	0.35
At2g34250	0.48	0.00
At2g34810	0.60	0.52
At2g36530	0.33	0.40
At2g36690	0.11	0.50
At2g36880	0.38	0.54
At2g36950	0.69	0.43
At2g37040	0.56	0.13
At2g37130	0.69	0.84
At2g37190	0.58	0.41
At2g37760	0.74	0.78
At2g37970	0.30	0.53
At2g38210	0.37	0.66
At2g38470	0.43	0.16
At2g38530	0.47	0.74
At2g38540	0.38	0.67
At2g38870	0.09	0.43
At2g39200	0.14	0.33
At2g39710	0.06	0.53
At2g39980	0.52	0.37
At2g40000	0.69	0.51
At2g40140	0.45	0.23
At2g40750	0.76	0.84
At2g41090	0.48	0.54
At2g41180	0.45	0.80
At2g41410	0.40	0.54
At2g41940	0.25	0.08
At2g42360	0.46	0.50
At2g43290	0.42	0.06
At2g43510	0.42	0.29
At2g43570	0.80	0.86
At2g43620	0.25	0.93
At2g43710	0.42	0.52
At2g43945	0.65	0.47
At2g44490	0.31	0.26
At2g45170	0.12	0.33

At2g45570	0.00	0.45
At2g45760	0.54	0.63
At2g46170	0.61	0.33
At2g46650	0.31	0.16
At2g46680	0.26	0.45
At2g47170	0.37	0.25
At2g47180	0.00	0.06
At2g47470	0.54	0.54
At2g47800	0.39	0.87
At3g01150	0.67	0.47
At3g02450	0.56	0.34
At3g02520	0.12	0.32
At3g02875	0.58	0.50
At3g04720	0.79	0.68
At3g04940	0.79	0.53
At3g05200	0.48	0.56
At3g09010	0.32	0.56
At3g09440	0.13	0.51
At3g10520	0.49	0.74
At3g11020	0.55	0.41
At3g11340	0.41	0.74
At3g11410	0.44	0.64
At3g11820	0.51	0.70
At3g12390	0.60	0.51
At3g12580	0.20	0.68
At3g13460	0.73	0.52
At3g13790	0.50	0.49
At3g13950	0.71	0.61
At3g15210	0.12	0.48
At3g16370	0.75	0.64
At3g16470	0.55	0.68
At3g16770	0.72	0.48
At3g16860	0.23	0.38
At3g18050	0.50	0.08
At3g19760	0.58	0.27
At3g19930	0.29	0.54
At3g20970	0.69	0.10
At3g22170	0.39	0.10
At3g22370	0.07	0.20
At3g22440	0.06	0.39
At3g23030	0.86	0.76
At3g23050	0.71	0.79
At3g23120	0.14	0.52
At3g25010	0.81	0.91
At3g25250	0.03	0.64

At3g26740	0.38	0.42
At3g26830	0.65	0.80
At3g27690	0.67	0.58
At3g28210	0.00	0.71
At3g28270	0.88	0.39
At3g28510	0.35	0.88
At3g28540	0.91	0.72
At3g28930	0.33	0.34
At3g30775	0.46	0.46
At3g44880	0.66	0.54
At3g46820	0.64	0.39
At3g47960	0.36	0.25
At3g48070	0.22	0.55
At3g48090	0.20	0.64
At3g48890	0.79	0.88
At3g49120	0.71	0.89
At3g50060	0.14	0.41
At3g50970	0.60	0.88
At3g51330	0.76	0.41
At3g51370	0.08	0.04
At3g51730	0.20	0.40
At3g51860	0.87	0.80
At3g51895	0.74	0.36
At3g52400	0.58	0.50
At3g52430	0.49	0.80
At3g53110	0.40	0.63
At3g54150	0.12	0.55
At3g54420	0.60	0.51
At3g54480	0.23	0.08
At3g54840	0.40	0.15
At3g54860	0.61	0.19
At3g54920	0.65	0.58
At3g56400	0.74	0.39
At3g57020	0.37	0.35
At3g57240	0.74	0.47
At3g57260	0.90	0.89
At3g61440	0.22	0.70
At4g00110	0.66	0.71
At4g00430	0.92	0.78
At4g00700	0.62	0.61
At4g01100	0.54	0.60
At4g01370	0.27	0.03
At4g01700	0.29	0.32
At4g02080	0.29	0.35
At4g02330	0.49	0.73

At4g02380	0.65	0.33
At4g02580	0.78	0.76
At4g03520	0.69	0.79
At4g03550	0.11	0.06
At4g04210	0.44	0.54
At4g04490	0.55	0.22
At4g04610	0.71	0.62
At4g08870	0.56	0.83
At4g10500	0.84	0.93
At4g10840	0.46	0.67
At4g11110	0.62	0.19
At4g11360	0.37	0.47
At4g11840	0.29	0.49
At4g12470	0.66	0.50
At4g12480	0.65	0.38
At4g13250	0.56	0.61
At4g13510	0.55	0.33
At4g13770	0.76	0.78
At4g13790	0.00	0.19
At4g13830	0.84	0.66
At4g14340	0.68	0.76
At4g14365	0.66	0.33
At4g14400	0.89	0.91
At4g15475	0.33	0.59
At4g15490	0.38	0.70
At4g15550	0.46	0.74
At4g15610	0.45	0.40
At4g16890	0.92	0.87
At4g17500	0.34	0.61
At4g17550	0.68	0.71
At4g18800	0.44	0.72
At4g19040	0.80	0.84
At4g20110	0.70	0.66
At4g20150	0.03	0.35
At4g20780	0.50	0.42
At4g21160	0.52	0.49
At4g21830	0.10	0.61
At4g22470	0.07	0.35
At4g22750	0.09	0.01
At4g22920	0.28	0.64
At4g23100	0.83	0.64
At4g23150	0.84	0.97
At4g23180	0.51	0.25
At4g23400	0.53	0.49
At4g23550	0.31	0.29

At4g23600	0.83	0.87
At4g23810	0.46	0.59
At4g24290	0.47	0.30
At4g24340	0.49	0.77
At4g24350	0.57	0.49
At4g24370	0.48	0.43
At4g25030	0.09	0.26
At4g25130	0.65	0.76
At4g25200	0.21	0.54
At4g25480	0.84	0.49
At4g25630	0.72	0.52
At4g25900	0.57	0.18
At4g26400	0.31	0.61
At4g26410	0.69	0.23
At4g27070	0.84	0.86
At4g27280	0.27	0.42
At4g27410	0.06	0.44
At4g30210	0.67	0.45
At4g31500	0.56	0.43
At4g31720	0.76	0.02
At4g31800	0.64	0.17
At4g32530	0.39	0.36
At4g32930	0.51	0.70
At4g33050	0.59	0.08
At4g33540	0.58	0.79
At4g34200	0.30	0.45
At4g34230	0.42	0.49
At4g34700	0.88	0.79
At4g35180	0.45	0.30
At4g35260	0.76	0.47
At4g35770	0.06	0.35
At4g36040	0.13	0.29
At4g36220	0.30	0.33
At4g36670	0.47	0.71
At4g36690	0.33	0.16
At4g36990	0.68	0.68
At4g37000	0.84	0.77
At4g37310	0.50	0.35
At4g37370	0.23	0.84
At4g37450	0.39	0.47
At4g37470	0.58	0.65
At4g37800	0.59	0.39
At4g37830	0.52	0.52
At4g37990	0.10	0.63
At4g38060	0.31	0.32

At4g38250	0.00	0.00
At4g38540	0.37	0.23
At4g38920	0.43	0.65
At4g39030	0.60	0.44
At4g39330	0.65	0.59
At4g39640	0.67	0.16
At4g39670	0.58	0.70
At4g39830	0.59	0.70
At4g39950	0.49	0.58
At4g40030	0.41	0.30
At5g01600	0.15	0.00
At5g01820	0.10	0.32
At5g02120	0.69	0.71
At5g02490	0.45	0.67
At5g04340	0.46	0.14
At5g04590	0.21	0.24
At5g05010	0.49	0.73
At5g06320	0.40	0.63
At5g06860	0.34	0.33
At5g06870	0.41	0.28
At5g07440	0.19	0.23
At5g08240	0.24	0.34
At5g12030	0.19	0.62
At5g12250	0.64	0.58
At5g13320	0.51	0.59
At5g13490	0.34	0.32
At5g13930	0.57	0.61
At5g14060	0.71	0.18
At5g15350	0.48	0.69
At5g15410	0.61	0.74
At5g15610	0.93	0.94
At5g16080	0.32	0.43
At5g20230	0.33	0.14
At5g21105	0.78	0.54
At5g22300	0.46	0.57
At5g22570	0.49	0.57
At5g24150	0.63	0.50
At5g24160	0.76	0.80
At5g24780	0.66	0.76
At5g25610	0.23	0.26
At5g26920	0.79	0.64
At5g27380	0.81	0.84
At5g28040	0.36	0.00
At5g28540	0.58	0.56
At5g38470	0.02	0.28

At5g39670	0.42	0.26
At5g41950	0.93	0.90
At5g42650	0.57	0.77
At5g42790	0.45	0.30
At5g43320	0.67	0.57
At5g43940	0.68	0.63
At5g44070	0.62	0.33
At5g44420	0.74	0.78
At5g46050	0.68	0.46
At5g47120	0.55	0.32
At5g47220	0.43	0.43
At5g47230	0.48	0.20
At5g48570	0.22	0.80
At5g50200	0.40	0.00
At5g52310	0.44	0.52
At5g52510	0.23	0.59
At5g52640	0.00	0.77
At5g52760	0.62	0.73
At5g54250	0.64	0.27
At5g54810	0.41	0.47
At5g57220	0.16	0.29
At5g58290	0.00	0.69
At5g58670	0.46	0.17
At5g60390	0.35	0.38
At5g60800	0.43	0.68
At5g60850	0.17	0.60
At5g61790	0.33	0.00
At5g63400	0.32	0.64
At5g64000	0.55	0.03
At5g64120	0.12	0.32
At5g65360	0.26	0.17
At5g65730	0.59	0.30
At5g66055	0.83	0.81
At5g66510	0.11	0.18
At5g66760	0.33	0.11
At5g67310	0.09	0.92
average	0.46	0.49

Supplemental Table 2. Genes in gene-clusters.

Cluster	Genes in cluster
#	
c2	At4g24290, At4g34200, At2g30250, At3g28210, At1g19150, At2g21660, At2g43710, At1g72610, At5g06860, At4g37370
c3	At1g10585, At2g04400, At3g27690
c4	At4g37000, At5g47120, At4g37470
c5	At4g11840, At5g02120, At1g26380, At2g02930, At2g38540, At3g26830, At1g21240, At5g07440, At2g45570, At1g14870, At2g17500, At4g25900, At4g25030, At5g22300, At4g32930, At2g15970, At3g09010, At5g42650, At4g23600, At1g20440, At3g16370, At5g54810, At2g28210, At4g38540, At5g43320, At2g13810, At2g14620, At5g25610, At5g52310, At4g39330
c7	At3g25250, At5g16080, At4g36990, At3g51895, At5g28040
c8	At3g09440, At3g12580, At1g79550, At5g52640
c10	At5g02490, At5g58290, At3g04940
c14	At1g80830, At4g23810, At3g13790, At4g15490
c15	At1g15670, At4g36690, At5g66055, At4g15610
c16	At3g02875, At4g23150, At3g26740
c17	At1g08830, At5g20230, At3g13950, At4g30210
c18	At3g49120, At4g39670, At4g34700, At3g10520
c19	At2g18680, At4g03520, At1g74020, At4g11360, At4g20780
c21	At3g11820, At5g06320, At1g64710
c23	At1g30400, At3g51370, At4g02580
c25	At2g14610, At5g58670, At1g71880
c28	At2g30770, At4g35770, At1g68620, At1g69490, At2g43620, At2g43570
c29	At1g45145, At2g47800, At1g11260, At3g12390, At5g15410, At4g13770
c31	At1g19670, At5g60850, At2g19190, At4g13250
c32	At2g22690, At2g37970, At1g19250, At2g45170, At3g54150, At5g12250
c33	At2g41180, At4g36040, At4g37990
c34	At2g38470, At4g02080, At2g43290, At1g62300
c35	At2g38530, At2g43945, At5g12030, At2g40000
c36	At2g45760, At4g38920, At2g28400, At1g30040
c37	At3g04720, At5g08240, At2g29350, At1g10070, At2g43510
c39	At1g12520, At5g43940, At1g25490
c42	At2g15390, At5g64000, At2g33830, At4g10500, At3g57260
c50	At2g36950, At3g28930, At4g08870, At1g61560
c29m	At2g47800, At4g39330, At4g39950

Note: Clusters shown are from gene-expression profiles 6h after inoculation with *Pst avrRpt2*, except cluster c29m which was the only cluster from gene-expression profiles 6h after mock-inoculation that showed significant correlation with any of the phenotypic data

**Supplemental table 3.** Primers used for sequencing *RPS2*

Fragment	primer 1	primer 2
1	ATTTGTTATCGGGCCTTCACTTG <sup>†</sup>	TCATCGTGGTATTCCGACA
2	GCCGACTACAAACTGTGCAA	ATCAACGCTAGTGGCAATCC
3	CAACAATATGGGTGCGGAAT	GCTGTTCTGTTGGAGCATCA
4	CAACAATATGGGTGCGGAAT	TCTTCAACGTGGAGATGCTG
5	ACTACAGTTACGCCGGTTGG	GGGCCTCCTCTCCTGAAAC
6	AAGCGAACACGAGAGTCCAT	GGATCCGGTTAGCTCATTA

<sup>†</sup> Primers in red used for sequencing the fragments amplified using both primers

**Supplemental table 4.** Primers used for qRT-PCR

Gene	primer 1	primer 2
Actin2 (At3g18780)	AGTGTCTGGATCGGTGGTTC	CCCCAGCTTTTAAGCCTTT
RPS2 (At4g26090)	GGCGGAGAGAAGAGGACATA	CAGCTTCGTCCCTCTAGACC