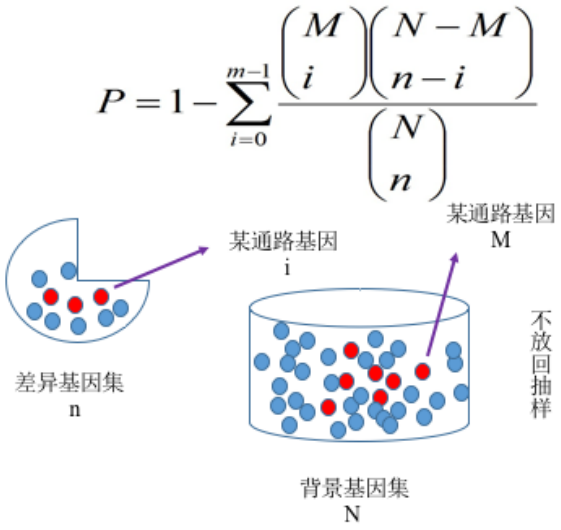


Figure S1. Schematic of differential gene enrichment analysis.

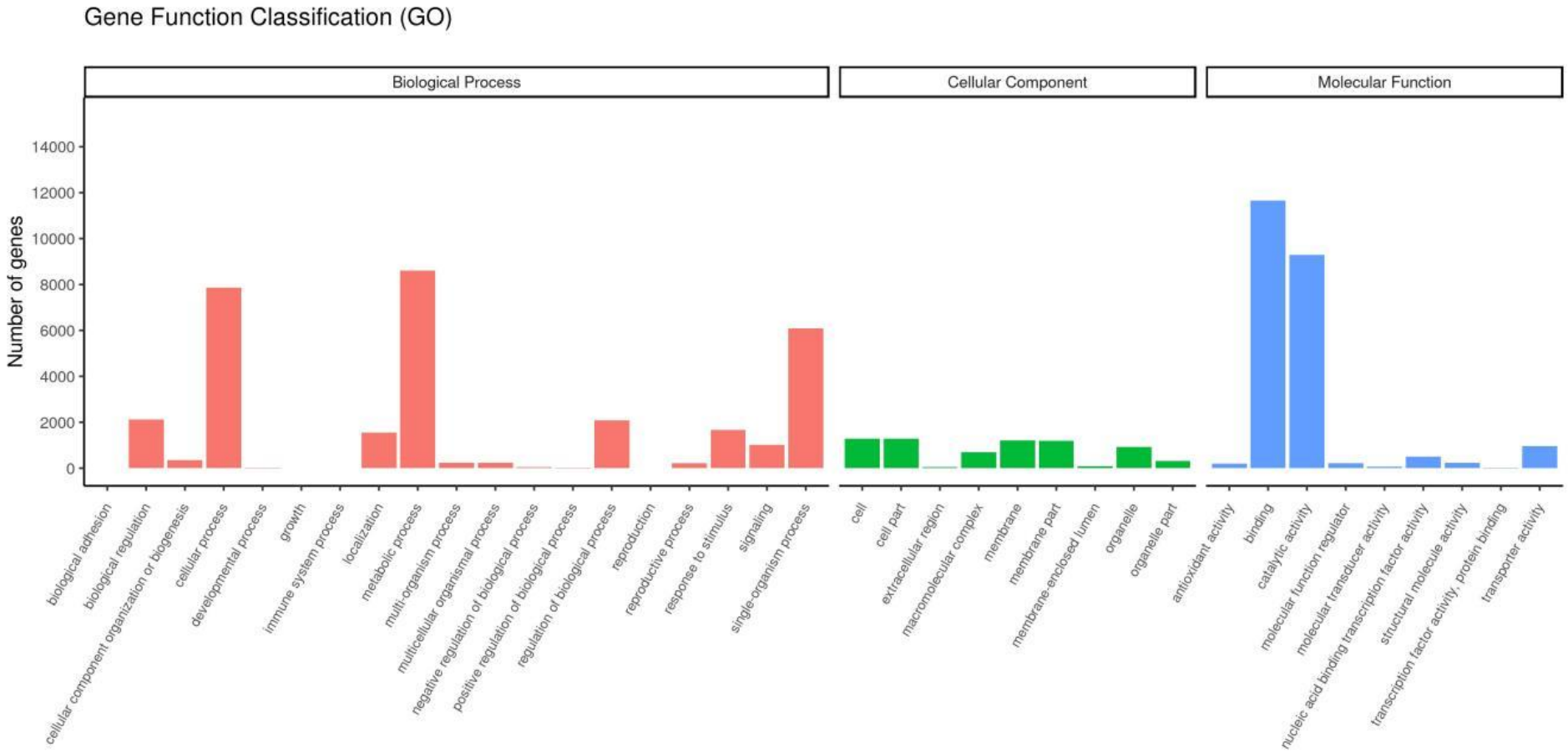


Figure S2. Statistical map of gene classification according to GO annotations for all genes annotated at level 2, png format (bitmap).

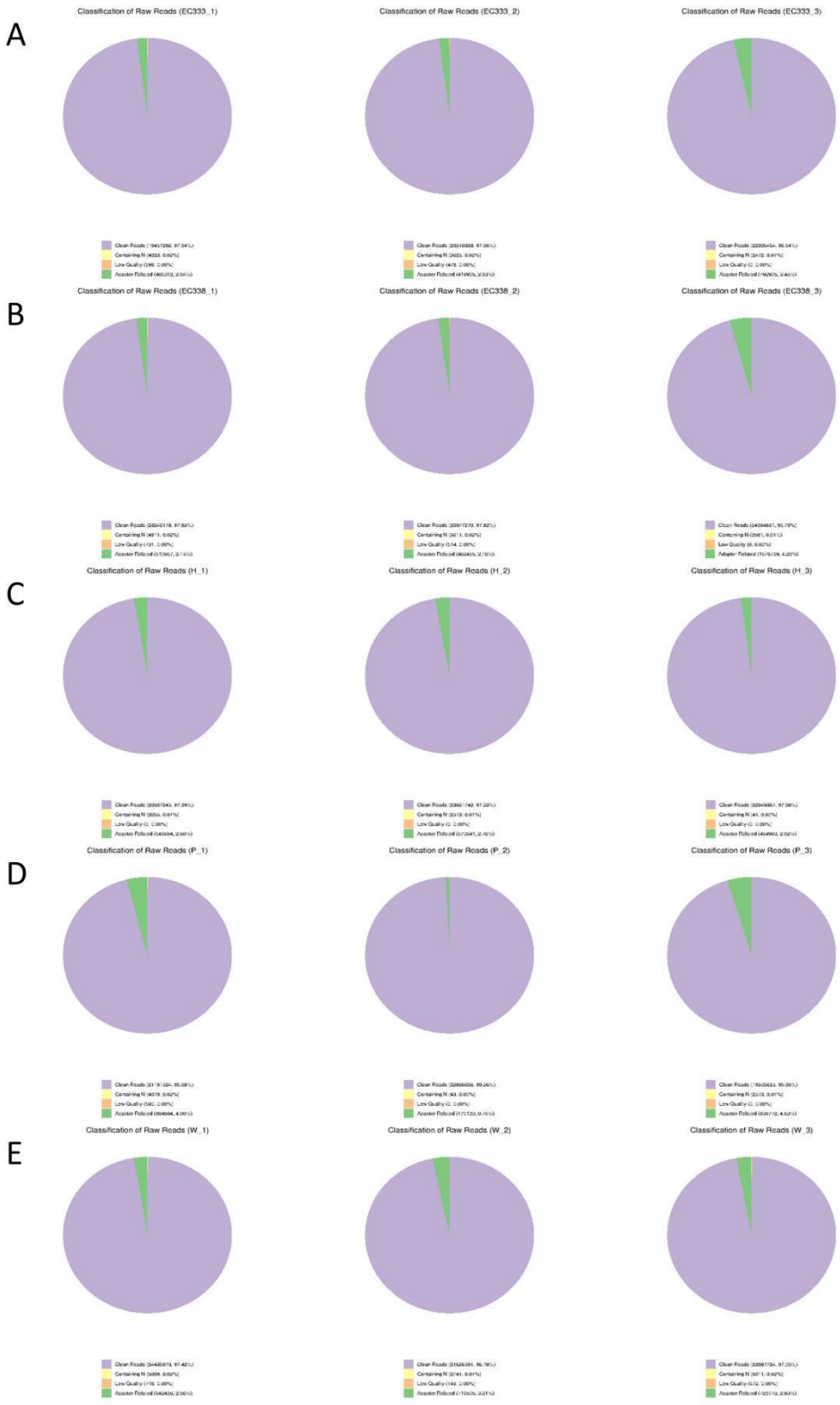
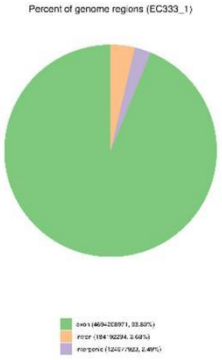


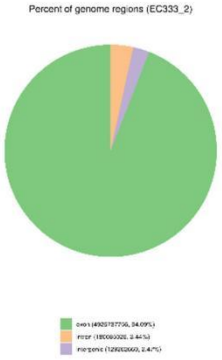
Figure S3. A-E Sample sequencing data filtering.

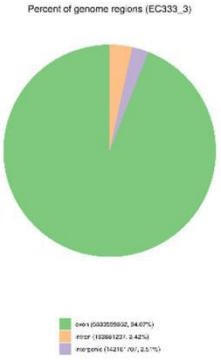
Adapter related: percentage of reads with adapters, Containing N: percentage of reads with N bases,

Low quality: percentage of reads with low sequencing quality, Clean reads: percentage of clean reads.

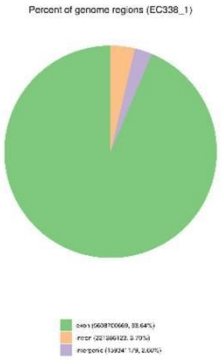
A

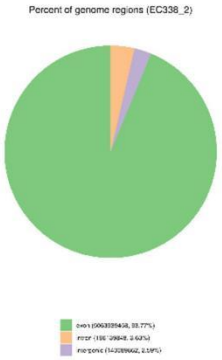

Percent of genome regions (EC333_1)

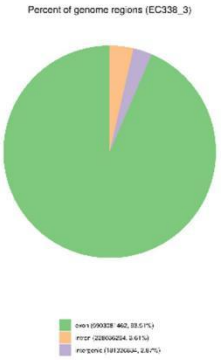

Percent of genome regions (EC333_2)


Percent of genome regions (EC333_3)

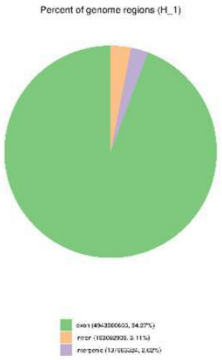
B

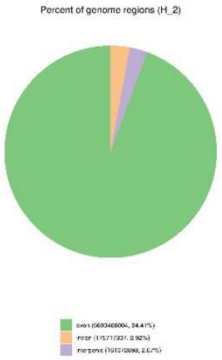

Percent of genome regions (EC338_1)

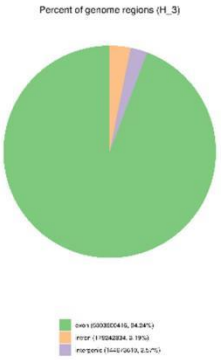

Percent of genome regions (EC338_2)


Percent of genome regions (EC338_3)

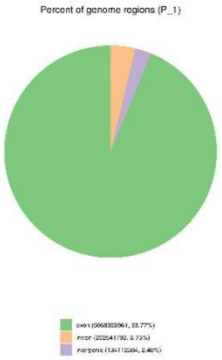
C

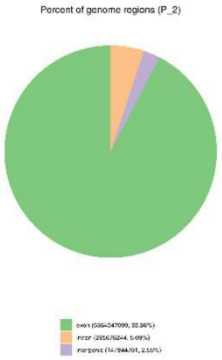

Percent of genome regions (H_1)

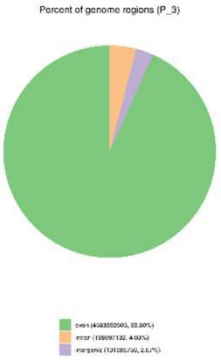

Percent of genome regions (H_2)


Percent of genome regions (H_3)

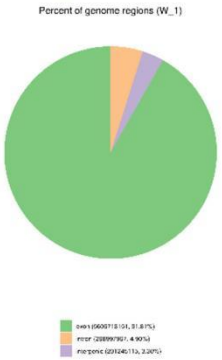
D

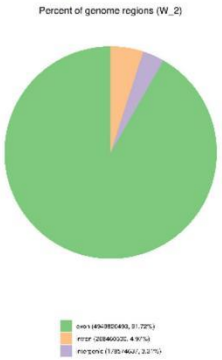

Percent of genome regions (P_1)


Percent of genome regions (P_2)


Percent of genome regions (P_3)

E


Percent of genome regions (W_1)


Percent of genome regions (W_2)

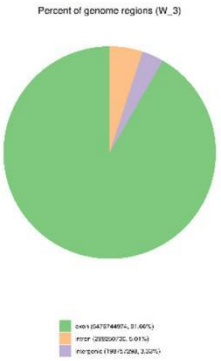

Percent of genome regions (W_3)

Figure S4. A-E Distribution of sequenced reads in genomic regions of eucalypt hybrids.

Exon: the number of bases compared to the exonic region of the genome and its percentage of the number of bases compared to the reference genome, Intron: the number of bases compared to the intronic region of the genome and its percentage of the number of bases compared to the reference genome, Intergenic: the number of bases compared to the intergenic region and its percentage of the number of bases compared to the reference genome. Intergenic: the number of bases matched to intergenic regions and their percentage of the number of bases matched to the reference genome.

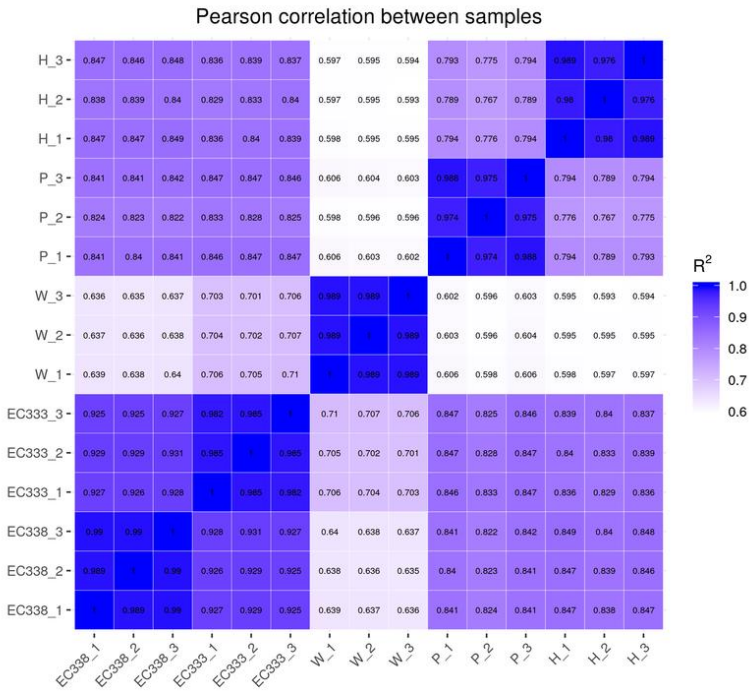


Figure S5. Correlation heat map of gene expression among various eucalypt genotypes (the horizontal and vertical coordinates are the square of the correlation coefficient between each genotype).

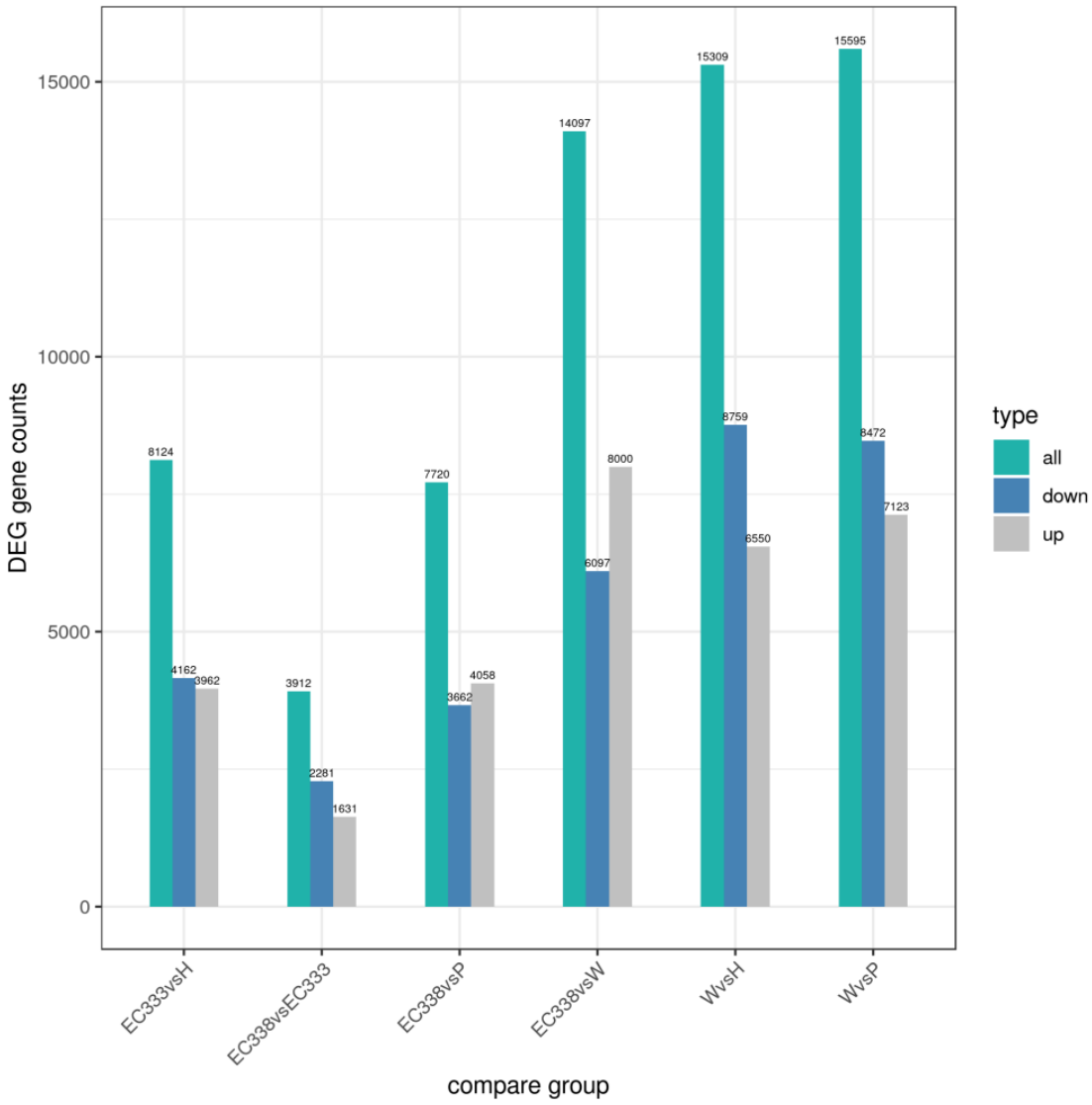


Figure S6. Histogram of the number of differential genes for each comparison combination (blue and gray indicate up- and down-regulated genes, respectively, and numbers indicate the number of genes).

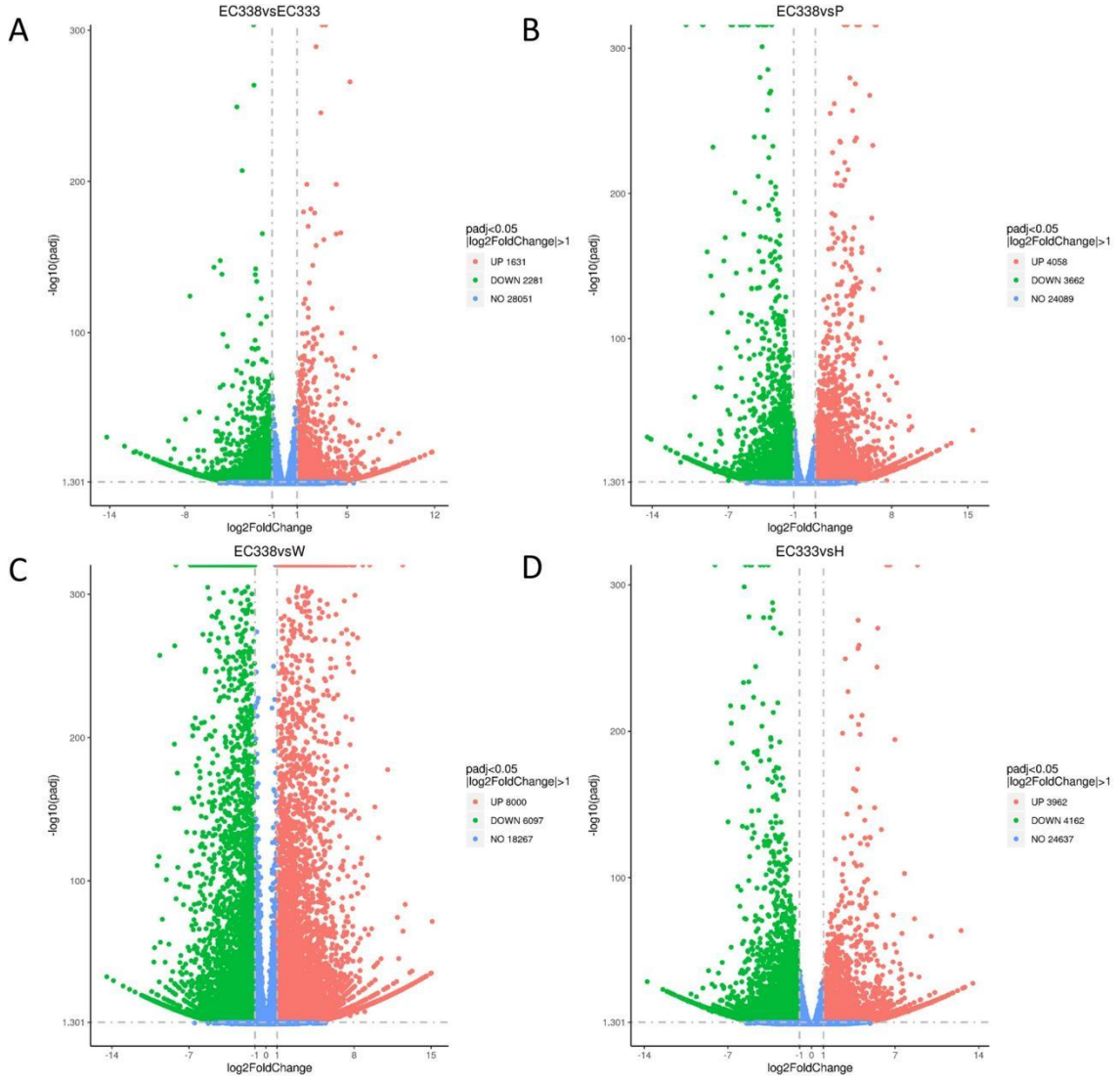


Figure S7. A-D Volcano of differentially expressed genes for four pairs of genotypes (the more off-center the horizontal axis is, the greater the multiplicity of differences; the more the vertical axis is toward the top of the plot, the more significant the differences are; the dashed line indicates the threshold line for the differential gene screening criteria).

Table S1. Data quality of transcriptome sequencing of eucalypt hybrids and their parents.

Sample	Library	Raw Reads	Raw Bases	Clean Reads	Clean Bases	Error Rate	Q20	Q30	GC pct %
EC338-1	FRAS230192178-1A	47515774	7.13G	46484356	6.97G	0.02	98.05	94.73	51.09
EC338-2	FRAS230192179	42887700	6.43G	41954540	6.29G	0.02	97.93	94.46	51.19

	-1A								
EC338-3	FRAS230209768-1A	51374302	7.71G	49209662	7.38G	0.02	98	94.38	51.19
EC333-1	FRAS230192180-1A	39734450	5.96G	38914584	5.84G	0.02	98.06	94.75	50.58
EC333-2	FRAS230192181-1A	41468672	6.22G	40620656	6.09G	0.02	97.96	94.5	51.21
EC333-3	FRAS230209769-1A	46001662	6.9G	44410908	6.66G	0.03	97.48	93.53	51.64
W-1	FRAS230192182-1A	50168332	7.53G	48871946	7.33G	0.02	98.1	94.78	49.68
W-2	FRAS230192183-1A	44691972	6.7G	43253182	6.49G	0.02	97.95	94.59	49.8
W-3	FRAS230192184-1A	49434360	7.42G	47975448	7.2G	0.02	97.96	94.42	49.66
P-1	FRAS230192185-1A	44160454	6.62G	42383048	6.36G	0.02	97.9	94.39	50.81
P-2	XRAS23000685 4-4r	46072424	6.91G	45732072	6.86G	0.03	97.82	93.73	48.75
P-3	FRAS230209770-1A	40595960	6.09G	38711270	5.81G	0.03	97.54	93.71	50.63
H-1	FRAS230209771-1A	42113188	6.32G	41014490	6.15G	0.03	97.61	93.81	51.65
H-2	FRAS230209812-1A	48669912	7.3G	47323484	7.1G	0.03	97.55	93.82	52.18
H-3	XRAS23000685 5-2r	45008802	6.75G	44098734	6.61G	0.03	97.65	93.82	51.72

Notes: Sample: Sample name. Library: Library number. Raw Reads: Number of reads in the original dataset. Raw Bases: Number of bases in the original dataset(raw base=raw reads*150bp). Clean Reads ：Number of reads after filtering raw data. Clean Bases：Number of reads after filtering raw data(clean base=clean reads*150bp). Error Rate: The data's overall sequencing error rate. Q20: Percentage of total bases with Phred values greater than 20. Q30: Percentage of total bases with Phred

values greater than 30. GC pct%: The percentage of G versus C in clean reads is calculated for all four bases.

Table S2. Presents a comparison of eucalypt hybrids and their parents with the E. grandis reference genome.

Sample	Total map (n/%)	Unique map (n/%)	Multi map (n/%)	read1 map (n/%)	read2 map (n/%)	Positive map (n/%)	Negative map (n/%)	Splice map (n/%)	Unsplice map (n/%)	Proper map (n/%)
EC338-1	40159966 /86.39	38558167 /82.95	1601799/ 3.45	19237051 /41.38	19321116 /41.56	19247863 /41.41	19310304 /41.54	14669935 /31.56	23888232 /51.39	34823836 /74.92
EC338-2	36211213 /86.31	34796756 /82.94	1414457/ 3.37	17370036 /41.4	17426720 /41.54	17363332 /41.39	17433424 /41.55	13227206 /31.53	21569550 /51.41	31446686 /74.95
EC338-3	42338677 /86.04	40560287 /82.42	1778390/ 3.61	20271145 /41.19	20289142 /41.23	20242786 /41.14	20317501 /41.29	15323738 /31.14	25236549 /51.28	36530762 /74.23
EC333-1	33544701 /86.2	32214360 /82.78	1330341/ 3.42	16070400 /41.3	16143960 /41.49	16078334 /41.32	16136026 /41.47	12578129 /32.32	19636231 /50.46	29221844 /75.09
EC333-2	35104775 /86.42	33762517 /83.12	1342258/ 3.3	16855306 /41.49	16907211 /41.62	16854963 /41.49	16907554 /41.62	12976420 /31.95	20786097 /51.17	30543652 /75.19
EC333-3	38005714 /85.58	36545285 /82.29	1460429/ 3.29	18276630 /41.15	18268655 /41.14	18226461 /41.04	18318824 /41.25	13812660 /31.1	22732625 /51.19	33019178 /74.35
W-1	40966127 /83.82	39255844 /80.32	1710283/ 3.5	19577756 /40.06	19678088 /40.26	19604178 /40.11	19651666 /40.21	14318448 /29.3	24937396 /51.03	34911134 /71.43
W-2	36207525 /83.71	34720281 /80.27	1487244/ 3.44	17359942 /40.14	17360339 /40.14	17341110 /40.09	17379171 /40.18	12643301 /29.23	22076980 /51.04	30911876 /71.47
W-3	40077327 /83.54	38354230 /79.95	1723097/ 3.59	19151315 /39.92	19202915 /40.03	19153905 /39.92	19200325 /40.02	13988035 /29.16	24366195 /50.79	34094218 /71.07
P-1	36247769 /85.52	34844811 /82.21	1402958/ 3.31	17394413 /41.04	17450398 /41.17	17388937 /41.03	17455874 /41.19	13905270 /32.81	20939541 /49.41	31567568 /74.48
P-2	38936463 /85.14	37274764 /81.51	1661699/ 3.63	18811318 /41.13	18463446 /40.37	18635037 /40.75	18639727 /40.76	15579472 /34.07	21695292 /47.44	32493534 /71.05
P-3	32957503 /85.14	31624759 /81.69	1332744/ 3.44	15797846 /40.81	15826913 /40.88	15783669 /40.77	15841090 /40.92	12584014 /32.51	19040745 /49.19	28631266 /73.96
H-1	35171695 /85.75	33842523 /82.51	1329172/ 3.24	16892358 /41.19	16950165 /41.33	16891991 /41.19	16950532 /41.33	12644630 /30.83	21197893 /51.68	30650360 /74.73
H-2	40426354 /85.43	38905691 /82.21	1520663/ 3.21	19384760 /40.96	19520931 /41.25	19405029 /41.01	19500662 /41.21	14155675 /29.91	24750016 /52.3	36117940 /76.32
H-3	37735187 /85.57	36327633	1407554/ 3.19	18204108 /41.28	18123525 /41.1	18141086 /41.14	18186547 /41.24	13587218 /30.81	22740415 /51.57	32718452 /74.19

Notes: Total Reads: After quality control, the sequencing data yielded a specific number of clean reads. Total map: The number of reads matched to the genome and their percentage. Unique map: The percentage and count of reads that aligned to a unique position in the reference genome, for further

quantitative data analysis. Multi map: The quantity of sequencing reads and the corresponding proportion that underwent alignment against various positions within the genomic reference were scrutinized. read1 map: the number of read1s compared to the reference genome and their percentage, read2_map: the number of read2s compared to the reference genome and their percentage. Positive map: The quantity of reads and their respective proportion in relation to the positive strand of the reference genome is under examination. Negative_map：The quantity of sequences and their corresponding proportion when juxtaposed with the antisense strand of the foundational genetic blueprint. Splice map: The quantity and proportion of reads demonstrating a split-matched alignment with the genomic reference sequence. Unsplice map: The quantity of reads that did not align with the genome and their respective percentage. Proper map: The alignment of read pairs (read1 and read2) was conducted concurrently with an evaluation of their frequencies and proportions within the genomic sequence.

Table S3. Genes detected in eucalypt parents and their offspring.

Gene id	Gene name	Gene chr	Gene start	Gene end	Gene strand	Gene length	Gene biotype	Gene description	Sub-family	Family
104422107	LOC104422107	NC_052621.1	18302801	18304215	+	886	protein_coding	ribulose bisphosphate carboxylase small chain%2C chloroplastic && sp|P24007|RBS_PYRPY Ribulose bisphosphate carboxylase small subunit, chloroplastic OS=Pyrus pyrifolia OX=3767 GN=RBCS PE=2 SV=1 && PF12338:Ribulose-1,5-bisphosphate carboxylase small subunit|PF00101:Ribulose bisphosphate carboxylase, small chain	-	-
104444821	LOC104444821	NC_052616.1	32742793	32743761	-	969	protein_coding	chlorophyll a-b binding protein of LHCII type 1 && sp|P27493|CB22_TOBAC Chlorophyll a-b binding protein 21, chloroplastic OS=Nicotiana tabacum OX=4097 GN=CAB21	-	-

104425107	LOC104425107	NC_052622.1	16631474	16632275	+	636	protein_coding	PE=2 SV=1 && PF00504:Chlorophyll A-B binding protein non-specific lipid-transfer protein 1 && sp|P85894|LTP1_MORNI Non-specific lipid-transfer protein 1 OS=Morus nigra OX=85232 PE=1 SV=1 && PF00234:Protease inhibitor/seed storage/LTP family	-	-
104434692	LOC104434692	NC_052612.1	34560961	34562840	-	1068	protein_coding	chlorophyll a-b binding protein 36%2C chloroplastic && sp|P27518|CB21_GOSHI Chlorophyll a-b binding protein 151, chloroplastic OS=Gossypium hirsutum OX=3635 GN=CAB-151 PE=2 SV=2 && PF00504:Chlorophyll A-B binding protein	-	-

Notes: Gene id: Gene count. Sample: The quantification of each sample yielded a raw READ COUNT value.Gene name: The nomenclature of the genetic entity. Gene chr：The gene is located on a specific chromosome. Gene start: The gene's location on the chromosome is determined by its starting position. Gene end: The chromosomal locus where a gene is situated terminates at a specific position on the chromosome. Gene strand: Details regarding the positive and negative strands of the chromosome harboring the gene are being discussed. Gene length: The gene length is defined as the cumulative measure of all non-overlapping exon regions spanning from the initiation to the termination of a gene. Gene biotype: Various types of genes exist, including protein-coding genes, long-chain non-coding genes, among others. Gene description: The gene function description is detailed alongside reference genome annotation information preceding the initial && symbol, Swiss-Prot database annotation following the first && symbol, and Pfam database annotation subsequent to the second && symbol. Tf family：Annotation of gene transcription factor families.

Table S4. Genes in carbohydrate binding (GO-GSEA).

	PROBE	DESCRIPTION (from dataset)	GENE SYMBOL	GENE_TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
172	104451739	LOC104451739			26514	-0.802	-0.5163	Yes
173	104427375	LOC104427375			26517	-0.802	-0.514	Yes
174	120296231	LOC120296231			26644	-0.819	-0.5156	Yes
175	104425265	LOC104425265			26693	-0.823	-0.5146	Yes
176	120289673	LOC120289673			26739	-0.834	-0.5136	Yes
177	120291737	LOC120291737			26849	-0.847	-0.5145	Yes
178	120296079	LOC120296079			26857	-0.847	-0.5122	Yes
179	120292471	LOC120292471			26895	-0.851	-0.5109	Yes
180	104418351	LOC104418351			26948	-0.858	-0.51	Yes
181	104442507	LOC104442507			26995	-0.859	-0.5089	Yes
182	120292993	LOC120292993			27300	-0.89	-0.5159	Yes
183	104419218	LOC104419218			27326	-0.895	-0.514	Yes
184	104428058	LOC104428058			27408	-0.913	-0.5139	Yes
185	104427280	LOC104427280			27455	-0.921	-0.5126	Yes
186	104416546	LOC104416546			27523	-0.935	-0.5119	Yes
187	120296236	LOC120296236			27527	-0.936	-0.5093	Yes
188	104437884	LOC104437884			27534	-0.937	-0.5067	Yes
189	104419425	LOC104419425			27716	-0.971	-0.5095	Yes
190	120287022	LOC120287022			27847	-0.988	-0.5107	Yes
191	120295547	LOC120295547			27876	-0.993	-0.5086	Yes
192	120289765	LOC120289765			28053	-1.033	-0.5111	Yes
193	104424490	LOC104424490			28094	-1.041	-0.5093	Yes
194	104425264	LOC104425264			28144	-1.054	-0.5077	Yes
195	104450896	LOC104450896			28145	-1.054	-0.5046	Yes
196	104427563	LOC104427563			28282	-1.087	-0.5057	Yes
197	120290470	LOC120290470			28342	-1.101	-0.5043	Yes
198	104453202	LOC104453202			28611	-1.164	-0.5093	Yes
199	104435019	LOC104435019			28626	-1.169	-0.5063	Yes
200	104442597	LOC104442597			28659	-1.177	-0.5038	Yes
201	104425585	LOC104425585			28758	-1.202	-0.5034	Yes
202	104457009	LOC104457009			28782	-1.208	-0.5005	Yes
203	104452347	LOC104452347			28799	-1.213	-0.4974	Yes
204	104455878	LOC104455878			28840	-1.226	-0.4951	Yes
205	120288503	LOC120288503			28859	-1.231	-0.492	Yes
206	104435473	LOC104435473			28964	-1.266	-0.4915	Yes
207	104420744	LOC104420744			29015	-1.284	-0.4893	Yes
208	120294558	LOC120294558			29022	-1.285	-0.4857	Yes
209	108957345	LOC108957345			29054	-1.297	-0.4828	Yes
210	104437043	LOC104437043			29392	-1.423	-0.4893	Yes
211	120291983	LOC120291983			29424	-1.436	-0.486	Yes
212	104446144	LOC104446144			29432	-1.439	-0.4819	Yes

213	120289594	LOC120289594	29510	-1.468	-0.48	Yes
214	104442589	LOC104442589	29696	-1.554	-0.4813	Yes
215	104424015	LOC104424015	29716	-1.563	-0.4773	Yes
216	104453182	LOC104453182	29777	-1.597	-0.4744	Yes
217	104414070	LOC104414070	29827	-1.622	-0.4712	Yes
218	104427371	LOC104427371	29834	-1.624	-0.4665	Yes
219	120289599	LOC120289599	29986	-1.707	-0.4663	Yes
220	120294795	LOC120294795	29999	-1.713	-0.4616	Yes
221	104416038	LOC104416038	30004	-1.716	-0.4566	Yes
222	104425283	LOC104425283	30012	-1.72	-0.4517	Yes
223	104431708	LOC104431708	30124	-1.791	-0.45	Yes
224	104431212	LOC104431212	30177	-1.823	-0.4462	Yes
225	104416068	LOC104416068	30181	-1.824	-0.4409	Yes
226	104420740	LOC104420740	30192	-1.831	-0.4358	Yes
227	104434429	LOC104434429	30202	-1.835	-0.4306	Yes
228	120296238	LOC120296238	30220	-1.844	-0.4257	Yes
229	120293387	LOC120293387	30233	-1.852	-0.4206	Yes
230	104416600	LOC104416600	30282	-1.888	-0.4165	Yes
231	104427057	LOC104427057	30306	-1.901	-0.4116	Yes
232	104452523	LOC104452523	30314	-1.907	-0.4062	Yes
233	104453353	LOC104453353	30339	-1.919	-0.4013	Yes
234	104417063	LOC104417063	30396	-1.965	-0.3973	Yes
235	104427276	LOC104427276	30462	-2.011	-0.3934	Yes
236	120294798	LOC120294798	30519	-2.059	-0.389	Yes
237	104457401	LOC104457401	30538	-2.089	-0.3834	Yes
238	104440880	LOC104440880	30558	-2.107	-0.3778	Yes
239	104455879	LOC104455879	30578	-2.127	-0.3721	Yes
240	104433328	LOC104433328	30587	-2.134	-0.366	Yes
241	104440043	LOC104440043	30590	-2.137	-0.3598	Yes
242	104451077	LOC104451077	30618	-2.158	-0.3542	Yes
243	104449039	LOC104449039	30632	-2.168	-0.3482	Yes
244	104451920	LOC104451920	30766	-2.271	-0.3457	Yes
245	120289800	LOC120289800	30869	-2.376	-0.3419	Yes
246	104452592	LOC104452592	30882	-2.395	-0.3352	Yes
247	104440029	LOC104440029	30901	-2.412	-0.3286	Yes
248	104430597	LOC104430597	30985	-2.503	-0.3238	Yes
249	104442603	LOC104442603	30994	-2.506	-0.3166	Yes
250	108960421	LOC108960421	31005	-2.511	-0.3095	Yes
251	104455436	LOC104455436	31056	-2.555	-0.3035	Yes
252	104438704	LOC104438704	31057	-2.557	-0.296	Yes
253	104440879	LOC104440879	31061	-2.563	-0.2885	Yes
254	104430169	LOC104430169	31079	-2.584	-0.2814	Yes
255	104429110	LOC104429110	31085	-2.591	-0.2739	Yes
256	104424563	LOC104424563	31098	-2.614	-0.2665	Yes
257	104451790	LOC104451790	31113	-2.631	-0.2592	Yes
258	104451714	LOC104451714	31175	-2.724	-0.253	Yes
259	104447342	LOC104447342	31190	-2.741	-0.2454	Yes
260	120291350	LOC120291350	31194	-2.753	-0.2373	Yes
261	104456007	LOC104456007	31198	-2.759	-0.2292	Yes

262	104427378	LOC104427378		31211	-2.779	-0.2214	Yes
263	104428611	LOC104428611		31229	-2.802	-0.2136	Yes
264	104446289	LOC104446289		31249	-2.835	-0.2058	Yes
265	104421788	LOC104421788		31261	-2.85	-0.1977	Yes
266	104452340	LOC104452340		31274	-2.867	-0.1896	Yes
267	104434436	LOC104434436		31285	-2.885	-0.1814	Yes
268	104427372	LOC104427372		31298	-2.902	-0.1732	Yes
269	120286921	LOC120286921		31389	-3.09	-0.1669	Yes
270	120294680	LOC120294680		31401	-3.108	-0.1581	Yes
271	104428452	LOC104428452		31405	-3.113	-0.1489	Yes
272	104427380	LOC104427380		31412	-3.12	-0.1399	Yes
273	120286632	LOC120286632		31423	-3.148	-0.1309	Yes
274	104427381	LOC104427381		31430	-3.16	-0.1217	Yes
275	104456032	LOC104456032		31462	-3.235	-0.1131	Yes
276	120286923	LOC120286923		31473	-3.259	-0.1038	Yes
277	104428449	LOC104428449		31565	-3.474	-0.0964	Yes
278	120286925	LOC120286925		31584	-3.524	-0.0865	Yes
279	104427367	LOC104427367		31592	-3.539	-0.0763	Yes
280	120291996	LOC120291996		31724	-3.959	-0.0687	Yes
281	104414044	LOC104414044		31725	-3.961	-0.057	Yes
282	104440094	LOC104440094		31774	-4.158	-0.0462	Yes
283	120289670	LOC120289670		31779	-4.173	-0.0339	Yes
284	104427055	LOC104427055		31787	-4.214	-0.0217	Yes
285	104420736	LOC104420736		31794	-4.251	-0.0093	Yes
286	104419546	LOC104419546		31932	-4.925	0.0009	Yes

Table S5. Genes in terpene synthase activity (GO-GSEA).

	PROBE	DESCRIPTION (from dataset)	GENE SYMBOL	GENE_TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
1	104435491	LOC104435491			3	4.995	0.0212	Yes
2	120292023	LOC120292023			9	4.988	0.0424	Yes
3	104431307	LOC104431307			17	4.981	0.0635	Yes
4	104442026	LOC104442026			21	4.98	0.0846	Yes
5	104426794	LOC104426794			44	4.965	0.1052	Yes
6	120289312	LOC120289312			60	4.954	0.1259	Yes
7	104450191	LOC104450191			68	4.948	0.1468	Yes
8	104422073	LOC104422073			77	4.944	0.1677	Yes
9	104423654	LOC104423654			103	4.93	0.1879	Yes
10	108958990	LOC108958990			207	4.83	0.2053	Yes
11	120290740	LOC120290740			323	4.667	0.2216	Yes
12	104442836	LOC104442836			472	4.408	0.2358	Yes
13	104442834	LOC104442834			538	4.308	0.2522	Yes

14	104431518	LOC104431518	648	4.148	0.2664	Yes
15	104454904	LOC104454904	701	4.045	0.2821	Yes
16	104452558	LOC104452558	743	3.973	0.2978	Yes
17	104456309	LOC104456309	747	3.963	0.3146	Yes
18	104429381	LOC104429381	792	3.884	0.3298	Yes
19	104452559	LOC104452559	808	3.867	0.3459	Yes
20	104452556	LOC104452556	839	3.804	0.3612	Yes
21	104435858	LOC104435858	866	3.757	0.3764	Yes
22	104454860	LOC104454860	921	3.688	0.3905	Yes
23	104435401	LOC104435401	953	3.649	0.4051	Yes
24	104454882	LOC104454882	954	3.649	0.4207	Yes
25	120288878	LOC120288878	1147	3.367	0.429	Yes
26	120289974	LOC120289974	1168	3.344	0.4427	Yes
27	104435460	LOC104435460	1374	3.135	0.4496	Yes
28	120292774	LOC120292774	1399	3.112	0.4621	Yes
29	104427170	LOC104427170	2012	2.53	0.4536	Yes
30	120289357	LOC120289357	2187	2.418	0.4585	Yes
31	104435451	LOC104435451	2191	2.418	0.4687	Yes

Table S6. Genes in carbon-oxygen lyase activity, acting on phosphates (GO-GSEA).

	PROBE	DESCRIPTION (from dataset)	GENE SYMBOL	GENE_TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
1	104435491	LOC104435491			3	4.995	0.021	Yes
2	120292023	LOC120292023			9	4.988	0.0419	Yes
3	104431307	LOC104431307			17	4.981	0.0627	Yes
4	104442026	LOC104442026			21	4.98	0.0836	Yes
5	104426794	LOC104426794			44	4.965	0.1039	Yes
6	120289312	LOC120289312			60	4.954	0.1243	Yes
7	104450191	LOC104450191			68	4.948	0.145	Yes
8	104422073	LOC104422073			77	4.944	0.1656	Yes
9	104423654	LOC104423654			103	4.93	0.1856	Yes
10	108958990	LOC108958990			207	4.83	0.2028	Yes
11	120290740	LOC120290740			323	4.667	0.2189	Yes
12	104442836	LOC104442836			472	4.408	0.2328	Yes
13	104442834	LOC104442834			538	4.308	0.2489	Yes
14	104431518	LOC104431518			648	4.148	0.263	Yes
15	104454904	LOC104454904			701	4.045	0.2784	Yes
16	104452558	LOC104452558			743	3.973	0.2939	Yes
17	104456309	LOC104456309			747	3.963	0.3106	Yes
18	104429381	LOC104429381			792	3.884	0.3256	Yes
19	104452559	LOC104452559			808	3.867	0.3414	Yes
20	104452556	LOC104452556			839	3.804	0.3565	Yes

21	104435858	LOC104435858	866	3.757	0.3716	Yes
22	104454860	LOC104454860	921	3.688	0.3854	Yes
23	104435401	LOC104435401	953	3.649	0.3999	Yes
24	104454882	LOC104454882	954	3.649	0.4153	Yes
25	120288878	LOC120288878	1147	3.367	0.4234	Yes
26	120289974	LOC120289974	1168	3.344	0.4369	Yes
27	104435460	LOC104435460	1374	3.135	0.4437	Yes
28	120292774	LOC120292774	1399	3.112	0.4561	Yes
29	104427170	LOC104427170	2012	2.53	0.4475	Yes
30	120289357	LOC120289357	2187	2.418	0.4522	Yes
31	104435451	LOC104435451	2191	2.418	0.4623	Yes

Table S7. Genes in carbon-oxygen lyase activity (GO-GSEA).

	PROBE	DESCRIPTION (from dataset)	GENE SYMBOL	GENE_TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
1	104435491	LOC104435491			3	4.995	0.0188	Yes
2	120292023	LOC120292023			9	4.988	0.0375	Yes
3	104431307	LOC104431307			17	4.981	0.0561	Yes
4	104442026	LOC104442026			21	4.98	0.0748	Yes
5	104426794	LOC104426794			44	4.965	0.0929	Yes
6	120289312	LOC120289312			60	4.954	0.1112	Yes
7	104450191	LOC104450191			68	4.948	0.1297	Yes
8	104422073	LOC104422073			77	4.944	0.1481	Yes
9	104423654	LOC104423654			103	4.93	0.166	Yes
10	108958990	LOC108958990			207	4.83	0.181	Yes
11	120290740	LOC120290740			323	4.667	0.195	Yes
12	104442836	LOC104442836			472	4.408	0.207	Yes
13	104442834	LOC104442834			538	4.308	0.2212	Yes
14	104431518	LOC104431518			648	4.148	0.2335	Yes
15	104454904	LOC104454904			701	4.045	0.2472	Yes
16	104452558	LOC104452558			743	3.973	0.2609	Yes
17	104456309	LOC104456309			747	3.963	0.2758	Yes
18	104429381	LOC104429381			792	3.884	0.2891	Yes
19	104452559	LOC104452559			808	3.867	0.3032	Yes
20	104452556	LOC104452556			839	3.804	0.3167	Yes
21	104435858	LOC104435858			866	3.757	0.33	Yes
22	104454860	LOC104454860			921	3.688	0.3423	Yes
23	104435401	LOC104435401			953	3.649	0.3551	Yes
24	104454882	LOC104454882			954	3.649	0.3689	Yes
25	104430995	LOC104430995			1018	3.556	0.3804	Yes
26	120288878	LOC120288878			1147	3.367	0.3891	Yes
27	120289974	LOC120289974			1168	3.344	0.4011	Yes

28	104435460	LOC104435460	1374	3.135	0.4065	Yes
29	120292774	LOC120292774	1399	3.112	0.4175	Yes
30	104427170	LOC104427170	2012	2.53	0.4077	Yes
31	120289357	LOC120289357	2187	2.418	0.4114	Yes
32	104435451	LOC104435451	2191	2.418	0.4204	Yes
33	104421260	LOC104421260	2578	2.22	0.4167	Yes
34	104427202	LOC104427202	2627	2.199	0.4235	Yes
35	104423547	LOC104423547	3018	1.985	0.4187	Yes
36	104422552	LOC104422552	3120	1.935	0.4228	Yes
37	104438521	LOC104438521	3481	1.777	0.4181	Yes
38	104445701	LOC104445701	3549	1.746	0.4226	Yes
39	104456834	LOC104456834	3561	1.742	0.4289	Yes

Table S8. Genes in sesquiterpenoid and triterpenoid biosynthesis (KEGG-GSEA).

	PROBE	DESCRIPTION (from dataset)	GENE SYMBOL	GENE_TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
1	novel.111	-			97	4.682	0.057	Yes
2	108958990	LOC108958990			135	4.472	0.1133	Yes
3	104431518	LOC104431518			250	3.819	0.1587	Yes
4	104423654	LOC104423654			273	3.708	0.2056	Yes
5	104442834	LOC104442834			310	3.49	0.2493	Yes
6	104442836	LOC104442836			418	3.106	0.2858	Yes
7	104438521	LOC104438521			488	2.911	0.321	Yes
8	104450191	LOC104450191			716	2.45	0.3453	Yes
9	120289357	LOC120289357			718	2.446	0.3767	Yes
10	104438524	LOC104438524			748	2.411	0.4067	Yes
11	104431307	LOC104431307			752	2.403	0.4374	Yes
12	104422073	LOC104422073			877	2.239	0.4623	Yes
13	104450716	LOC104450716			951	2.152	0.4876	Yes
14	120289312	LOC120289312			1114	1.999	0.5082	Yes
15	104447805	LOC104447805			1427	1.763	0.521	Yes
16	104445174	LOC104445174			1595	1.665	0.5372	Yes
17	104418420	LOC104418420			1763	1.561	0.552	Yes
18	104454355	LOC104454355			1920	1.494	0.5662	Yes
19	104426794	LOC104426794			2300	1.335	0.5715	Yes
20	120289974	LOC120289974			2304	1.335	0.5885	Yes
21	104418125	LOC104418125			2442	1.288	0.6008	Yes
22	104449232	LOC104449232			2756	1.184	0.6062	Yes
23	104447373	LOC104447373			3071	1.097	0.6104	Yes

Table S9. Genes in phenylpropanoid biosynthesis (KEGG-GSEA).

	PROBE	DESCRIPTION (from dataset)	GENE SYMBOL	GENE_TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
1	104445601	LOC104445601			4	4.999	0.0094	Yes
2	104445600	LOC104445600			16	4.997	0.0186	Yes
3	104453856	LOC104453856			31	4.996	0.0276	Yes
4	104438294	LOC104438294			88	4.986	0.0354	Yes
5	104426975	LOC104426975			146	4.976	0.0431	Yes
6	104456851	LOC104456851			243	4.954	0.0495	Yes
7	104453855	LOC104453855			349	4.93	0.0556	Yes
8	104452254	LOC104452254			395	4.914	0.0636	Yes
9	104415687	LOC104415687			400	4.913	0.0728	Yes
10	104415688	LOC104415688			405	4.91	0.082	Yes
11	104454445	LOC104454445			414	4.908	0.0911	Yes
12	104455395	LOC104455395			415	4.908	0.1005	Yes
13	104449485	LOC104449485			460	4.889	0.1084	Yes
14	104444152	LOC104444152			464	4.887	0.1176	Yes
15	104453315	LOC104453315			551	4.848	0.1242	Yes
16	104443712	LOC104443712			555	4.847	0.1333	Yes
17	104455132	LOC104455132			654	4.811	0.1394	Yes
18	104455140	LOC104455140			655	4.81	0.1486	Yes
19	104422587	LOC104422587			886	4.709	0.1504	Yes
20	104430095	LOC104430095			887	4.708	0.1593	Yes
21	104422800	LOC104422800			1016	4.645	0.1642	Yes
22	104433339	LOC104433339			1017	4.645	0.173	Yes
23	104418455	LOC104418455			1133	4.587	0.1782	Yes
24	104437652	LOC104437652			1156	4.574	0.1862	Yes
25	104437651	LOC104437651			1220	4.532	0.1929	Yes
26	104433684	LOC104433684			1272	4.507	0.1999	Yes
27	104454440	LOC104454440			1450	4.398	0.2027	Yes
28	104450635	LOC104450635			1506	4.359	0.2093	Yes
29	104456852	LOC104456852			1532	4.341	0.2168	Yes
30	104441575	LOC104441575			1832	4.185	0.2155	Yes
31	120291593	LOC120291593			1970	4.094	0.219	Yes
32	104437195	LOC104437195			1974	4.089	0.2267	Yes
33	104450510	LOC104450510			1992	4.08	0.2339	Yes
34	104431840	LOC104431840			2145	3.986	0.2368	Yes
35	104438293	LOC104438293			2173	3.969	0.2435	Yes
36	120294767	LOC120294767			2254	3.92	0.2484	Yes
37	120296049	LOC120296049			2264	3.913	0.2556	Yes
38	104445602	LOC104445602			2272	3.906	0.2628	Yes
39	104437647	LOC104437647			2332	3.868	0.2684	Yes
40	120296044	LOC120296044			2429	3.812	0.2726	Yes
41	104417080	LOC104417080			2538	3.744	0.2764	Yes
42	104450451	LOC104450451			2553	3.736	0.2831	Yes
43	104430395	LOC104430395			2563	3.733	0.2899	Yes

44	104455389	LOC104455389		2636	3.688	0.2947	Yes
45	104441401	LOC104441401		2685	3.655	0.3001	Yes
46	104416462	LOC104416462		2690	3.651	0.307	Yes
47	104443731	LOC104443731		2770	3.601	0.3114	Yes
48	120294448	LOC120294448		2829	3.564	0.3163	Yes
49	104431976	LOC104431976		2833	3.563	0.323	Yes
50	120296047	LOC120296047		3010	3.469	0.3241	Yes
51	104419698	LOC104419698		3158	3.389	0.326	Yes
52	104455394	LOC104455394		3198	3.368	0.3312	Yes
53	104417991	LOC104417991		3213	3.361	0.3372	Yes
54	104456751	LOC104456751		3231	3.352	0.343	Yes
55	104453243	LOC104453243		3268	3.334	0.3483	Yes
56	104442380	LOC104442380		3298	3.324	0.3537	Yes
57	120294132	LOC120294132		3311	3.316	0.3596	Yes
58	120296045	LOC120296045		3352	3.296	0.3646	Yes
59	120296048	LOC120296048		3518	3.21	0.3656	Yes
60	104437427	LOC104437427		3594	3.169	0.3693	Yes

Table S10. Genes in plant-pathogen interaction (KEGG-GSEA).

	PROBE	DESCRIPTION (from dataset)	GENE SYMBOL	GENE_TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
177	104449494	LOC104449494			27613	-1.939	-0.4521	Yes
178	104416970	LOC104416970			27628	-1.945	-0.4491	Yes
179	104422137	LOC104422137			27672	-1.962	-0.4471	Yes
180	104414302	LOC104414302			27711	-1.975	-0.4448	Yes
181	120287568	LOC120287568			27727	-1.98	-0.4418	Yes
182	104414483	LOC104414483			27758	-1.99	-0.4393	Yes
183	104421232	LOC104421232			27869	-2.029	-0.4392	Yes
184	104443414	LOC104443414			27960	-2.061	-0.4384	Yes
185	104444272	LOC104444272			28021	-2.089	-0.4366	Yes
186	104433916	LOC104433916			28067	-2.105	-0.4344	Yes
187	104456380	LOC104456380			28105	-2.117	-0.4318	Yes
188	104448458	LOC104448458			28180	-2.146	-0.4304	Yes
189	104423255	LOC104423255			28299	-2.195	-0.4303	Yes
190	104443940	LOC104443940			28364	-2.22	-0.4284	Yes
191	104448722	LOC104448722			28415	-2.246	-0.426	Yes
192	104443936	LOC104443936			28429	-2.252	-0.4225	Yes
193	104419928	LOC104419928			28507	-2.288	-0.4209	Yes
194	104423668	LOC104423668			28511	-2.289	-0.417	Yes
195	104433709	LOC104433709			28536	-2.297	-0.4138	Yes
196	104445156	LOC104445156			28599	-2.331	-0.4117	Yes
197	120285870	LOC120285870			28608	-2.335	-0.4078	Yes
198	104456273	LOC104456273			28656	-2.357	-0.4052	Yes

199	104444452	LOC104444452	28663	-2.361	-0.4013	Yes
200	120286843	LOC120286843	28668	-2.362	-0.3973	Yes
201	104441710	LOC104441710	28766	-2.41	-0.3961	Yes
202	104428053	LOC104428053	28767	-2.411	-0.3919	Yes
203	104456403	LOC104456403	28836	-2.442	-0.3898	Yes
204	104419657	LOC104419657	28966	-2.51	-0.3894	Yes
205	104451514	LOC104451514	28984	-2.522	-0.3856	Yes
206	104421651	LOC104421651	29059	-2.559	-0.3834	Yes
207	104426329	LOC104426329	29167	-2.624	-0.3822	Yes
208	104422924	LOC104422924	29193	-2.64	-0.3784	Yes
209	104448798	LOC104448798	29200	-2.644	-0.3739	Yes
210	104421646	LOC104421646	29251	-2.668	-0.3709	Yes
211	120293261	LOC120293261	29314	-2.696	-0.3681	Yes
212	104441713	LOC104441713	29395	-2.738	-0.3658	Yes
213	104438492	LOC104438492	29460	-2.769	-0.363	Yes
214	104444268	LOC104444268	29477	-2.778	-0.3586	Yes
215	108960305	LOC108960305	29491	-2.785	-0.3542	Yes
216	120287703	LOC120287703	29610	-2.86	-0.3529	Yes
217	104450406	LOC104450406	29634	-2.873	-0.3486	Yes
218	104432889	LOC104432889	29653	-2.88	-0.3442	Yes
219	104419049	LOC104419049	29656	-2.881	-0.3392	Yes
220	104450465	LOC104450465	29718	-2.924	-0.336	Yes
221	104443368	LOC104443368	29739	-2.937	-0.3315	Yes
222	104429436	LOC104429436	29742	-2.938	-0.3265	Yes
223	104437953	LOC104437953	29836	-2.997	-0.3241	Yes
224	104427319	LOC104427319	29870	-3.02	-0.3199	Yes
225	120287698	LOC120287698	29978	-3.1	-0.3178	Yes
226	104425716	LOC104425716	29980	-3.101	-0.3125	Yes
227	104443369	LOC104443369	30053	-3.141	-0.3092	Yes
228	104456341	LOC104456341	30127	-3.206	-0.3059	Yes
229	104425342	LOC104425342	30159	-3.225	-0.3013	Yes
230	104456407	LOC104456407	30207	-3.257	-0.2971	Yes
231	104454049	LOC104454049	30269	-3.294	-0.2932	Yes
232	104437523	LOC104437523	30271	-3.295	-0.2875	Yes
233	120286810	LOC120286810	30337	-3.339	-0.2837	Yes
234	104426306	LOC104426306	30371	-3.378	-0.2789	Yes
235	104442385	LOC104442385	30430	-3.425	-0.2747	Yes
236	104444270	LOC104444270	30451	-3.442	-0.2693	Yes
237	104425417	LOC104425417	30471	-3.46	-0.2639	Yes
238	104449707	LOC104449707	30528	-3.507	-0.2596	Yes
239	120287409	LOC120287409	30545	-3.519	-0.2539	Yes
240	104416990	LOC104416990	30572	-3.536	-0.2486	Yes
241	104442040	LOC104442040	30659	-3.606	-0.245	Yes
242	120295517	LOC120295517	30666	-3.611	-0.2389	Yes
243	104422003	LOC104422003	30690	-3.636	-0.2333	Yes
244	104453847	LOC104453847	30833	-3.754	-0.2311	Yes
245	104448267	LOC104448267	30852	-3.77	-0.2251	Yes
246	104425834	LOC104425834	30859	-3.775	-0.2187	Yes
247	104417001	LOC104417001	31014	-3.91	-0.2167	Yes

248	104422757	LOC104422757		31034	-3.927	-0.2105	Yes
249	120294306	LOC120294306		31045	-3.937	-0.2039	Yes
250	104423509	LOC104423509		31081	-3.976	-0.1981	Yes
251	120293645	LOC120293645		31096	-3.988	-0.1916	Yes
252	104456406	LOC104456406		31187	-4.061	-0.1873	Yes
253	104444445	LOC104444445		31198	-4.07	-0.1805	Yes
254	104446729	LOC104446729		31254	-4.118	-0.1751	Yes
255	104442133	LOC104442133		31304	-4.163	-0.1694	Yes
256	104427433	LOC104427433		31328	-4.185	-0.1628	Yes
257	120294405	LOC120294405		31339	-4.197	-0.1558	Yes
258	104451769	LOC104451769		31426	-4.276	-0.151	Yes
259	104429873	LOC104429873		31465	-4.309	-0.1447	Yes
260	104444068	LOC104444068		31472	-4.313	-0.1374	Yes
261	104425137	LOC104425137		31510	-4.354	-0.1309	Yes
262	104444418	LOC104444418		31521	-4.365	-0.1237	Yes
263	104422220	LOC104422220		31535	-4.372	-0.1164	Yes
264	104428600	LOC104428600		31541	-4.383	-0.109	Yes
265	104443366	LOC104443366		31568	-4.412	-0.1021	Yes
266	104454739	LOC104454739		31570	-4.413	-0.0944	Yes
267	104425347	LOC104425347		31580	-4.416	-0.087	Yes
268	104444265	LOC104444265		31586	-4.426	-0.0795	Yes
269	120294824	LOC120294824		31623	-4.458	-0.0728	Yes
270	104453031	LOC104453031		31629	-4.461	-0.0652	Yes
271	104450370	LOC104450370		31637	-4.464	-0.0577	Yes
272	104426344	LOC104426344		31639	-4.466	-0.0499	Yes
273	120293654	LOC120293654		31643	-4.47	-0.0422	Yes
274	104448346	LOC104448346		31644	-4.47	-0.0344	Yes
275	104434125	LOC104434125		31660	-4.481	-0.0271	Yes
276	104445200	LOC104445200		31701	-4.51	-0.0205	Yes
277	104440808	LOC104440808		31704	-4.513	-0.0127	Yes
278	104426307	LOC104426307		31756	-4.559	-0.0063	Yes
279	104444267	LOC104444267		32042	-4.796	-0.0069	Yes
280	104456528	LOC104456528		32073	-4.816	0.0006	Yes
281	104444424	LOC104444424		32100	-4.832	0.0082	Yes

Table S11. Genes in flavonoid biosynthesis (KEGG-GSEA).

	PROBE	DESCRIPTION (from dataset)	GENE SYMBOL	GENE_TITLE	RANK IN GENE LIST	RANK METRIC SCORE	RUNNING ES	CORE ENRICHMENT
1	104456052	LOC104456052			13	4.998	0.0227	Yes
2	104426975	LOC104426975			146	4.976	0.0416	Yes
3	104415687	LOC104415687			400	4.913	0.0565	Yes
4	104415688	LOC104415688			405	4.91	0.079	Yes

5	104455395	LOC104455395	415	4.908	0.1014	Yes
6	104415137	LOC104415137	470	4.886	0.1223	Yes
7	104443712	LOC104443712	555	4.847	0.1421	Yes
8	104455132	LOC104455132	654	4.811	0.1613	Yes
9	104455140	LOC104455140	655	4.81	0.1836	Yes
10	104428803	LOC104428803	666	4.806	0.2055	Yes
11	120294781	LOC120294781	692	4.794	0.2268	Yes
12	104430095	LOC104430095	887	4.708	0.2426	Yes
13	120294785	LOC120294785	1052	4.624	0.2589	Yes
14	104432776	LOC104432776	1380	4.441	0.2693	Yes
15	104450635	LOC104450635	1506	4.359	0.2855	Yes
16	104449845	LOC104449845	1884	4.149	0.293	Yes
17	104431840	LOC104431840	2145	3.986	0.3034	Yes
18	120294767	LOC120294767	2254	3.92	0.3182	Yes
19	120296049	LOC120296049	2264	3.913	0.336	Yes
20	120296044	LOC120296044	2429	3.812	0.3485	Yes
21	104455389	LOC104455389	2636	3.688	0.3592	Yes
22	120290178	LOC120290178	2737	3.626	0.3728	Yes
23	104443731	LOC104443731	2770	3.601	0.3885	Yes
24	120294448	LOC120294448	2829	3.564	0.4031	Yes
25	104431976	LOC104431976	2833	3.563	0.4195	Yes
26	120296047	LOC120296047	3010	3.469	0.4301	Yes
27	104455394	LOC104455394	3198	3.368	0.4399	Yes
28	104453243	LOC104453243	3268	3.334	0.4531	Yes
29	120296045	LOC120296045	3352	3.296	0.4658	Yes
30	120296048	LOC120296048	3518	3.21	0.4755	Yes
31	104420450	LOC104420450	3735	3.085	0.4831	Yes
32	104432774	LOC104432774	3829	3.031	0.4942	Yes
33	104454463	LOC104454463	3974	2.951	0.5034	Yes
34	104436514	LOC104436514	4301	2.805	0.5062	Yes
35	104441153	LOC104441153	4394	2.761	0.5161	Yes
36	104441822	LOC104441822	4981	2.521	0.5096	Yes
37	104450636	LOC104450636	4985	2.52	0.5212	Yes

Table S12. WGCNA disease resistance related module genes.

EC338 positive correlation		EC333 negative correlation	EC338 negative correlation with EC333 positive correlation
MEpink	MEtan	MEgreenyellow	MEsaddlebrown
120291506	104453526	104436533	104448928
104449885	104453361	104430936	104445252
104450993	104424635	104456799	104424752
104437752	104441683	104425869	104426217
104426863	104438376	104422794	104419057

104414247	104420006	104438573	104442219
104456301	104436363	104432842	104450478
104448798	104416141	104448851	104418785
104422496	104421812	104454201	120285888
104453055	104424700	104433910	104423290
104436548	104453561	104424743	104421540
104432557	104450852	104418884	104426756
120286881	104426822	104456398	104440718
104438399	104424758	104425364	104442362
104422285	104433348	104422657	104426238
104426754	104432639	104453437	104415307
104457395	104422776	104454528	104448299
104449214	104424352	104422772	104436313
104436828	104424857	104414528	104437500
104437634	104418942	104450253	104419579
104432680	104448773	104449883	104444319
104449932	104446877	104448922	104443488
104433742	104415854	104453387	104442156
104445600	104426272	104421700	104422238
104438051	104438200	104454478	104418194
120286245	104418682	104422033	104433932
104448025	104445410	104415747	104422733
104453382	104424281	104434133	104449414
104433374	104425564	104449524	104449514
104427965	104415970	104449017	104434231
104437235	104449269	104441483	104443645
104424418	104454685	104453137	104419491
104437563	104449552	104415636	104445334
104442991	104424607	104418419	104449108
104450773	104450696	104421278	104414803
104415766	104424265	104418447	104437444
104426029	104436026	104423234	104437686
104418982	104427640	104419004	104452645
104423225	104438362	104442024	104439186
104454440	104426686	104423010	104418438
104437963	104448228	104421366	104418123
104433743	104438032	104445221	104421174
104449880	104436102	104449346	104448238
104443648	104443998	104457394	104453159
104445011	120295714	104443370	104445581
120290849	120290287	104444274	104434797
104443766	104447964	104448687	104415261
104436144	104419394	104449800	104437139
104441236	104432674	104456509	104424280
104436438	104453664	104450348	104454643
104424824	104419153	108957826	104422167
104453344	104434227	104422205	104423517
104448513	108953833	104448621	104433230

104441814	104453006	104449037	104415355
104421865	104438956	104457257	104440607
104441984	104432695	104440995	104438177
104450695	104442338	104415966	104432922
104418469	120286445	104457306	104421365
104421518	104419452	104436914	104425409
104440778	104441822	104454242	104453569
104437522	104449364	104437360	104454575
104422374	104449641	104435840	novel.947
104456998	104425622	104448334	104426834
104419496	104418972	104441438	104415216
104415921	104433644	120288118	104419946
104421465	104444640	104456107	104421694
104452661	104456901	104442291	104437756
104437431	104450778	104427041	104423200
104442372	104441782	104442314	104438995
104456057	104456818	104414087	104436631
104456708	104445331	104441203	104423281
104419878	104417657	104425375	104438076
104416031	104457369	104449867	104447678
104444123	120294343	104423630	104448964
104419151	104449594	104415777	104445486
104441735	104433170	104438025	120292498
104449254	104448131	novel.1622	104437412
104449581	104432980	104426582	104450743
104435040	104426089	104426164	104438321
104423243	104419274	104422669	104454500
120295464	104449114	104437575	104442188
104438128	104441118	104443465	104454956
104453990	108960239	104430240	104428484
104425616	104428535	104421324	104424701
104426317	104456553	104415502	104439201
104420028	104424445	104424517	104449028
104457015	104423111	104423871	120290955
104415031	104448335	104435888	104418598
104441401	104454319	104453630	104452636
104419488	104454512	novel.1035	104438235
104456282	104424755	104423177	104440862
104444805	104450385	104442162	104421241
104423801	104434095	104450226	104451300
104421292	104453654	novel.1162	120289452
104434014	104418676	104449593	104422226
104421714	104450064	104425022	108953866
120293510	104432967	104443245	104437180
104445843	104454410	104419880	120290834
104418455	104456827	104418792	104438221
104433138	104418891	104432593	104429512
104446012	104422779	104430414	novel.1786

104421139	104437483	104433280	120291533
104414945	104422748	104447794	104423643
104418784	104424261	104436258	104448013
104452358	104445845	104422143	104431467
104433896	104423740	104422663	120294741
104453121	120289195	104440765	120288281
104435955	104421200	104419852	104453150
104436280	104450312	104427368	104438806
104450574	104425468	104419730	120286682
104426648	104424697	104437570	120286768
104456147	104424302	104452616	104440226
104414388	104425161	104448877	104435465
104447095	104436716	104442335	120285974
104457115	104425812	104445761	104418293
104449282	104450013	104414127	120288294
104444321	120294605	120288142	104448186
104419737	104447940	104448999	120286090
104415254	104442278	104437729	104448563
104421746	104414046	104433726	104430559
104452752	120291160	104418686	104420352
104421686	104433943	104448843	104435774
104426722	104450575	104440781	120292821
120293021	120290069	104426283	120287031
104433137	104441686	104420001	104425783
104443836	120294897	104426734	104422065
104422221	104438570	104415033	novel.830
104432738	104449715	104453319	104427367
104424918	104428397	104437851	104438851
104421802	104425497	104445681	104414763
104418708	104416611	104444620	104448296
104421137	104433973	120296185	104451036
104447907	104434075	104456227	104436956
104424333	104422792	120292416	104423665
104416327	104453329	104429023	104430446
104454204	104452637	104416868	104418513
104456240	104456492	104437681	104451390
104433769	104433901	104435574	104426577
104446106	104438391	104418440	104453212
104448985	120293168	104425856	104438120
104434287	104426632	104423265	104428921
104441375	104426293	120288698	120294229
120292245	104436521	104447772	104456234
104456122	104456484	104414421	104438296
104436767	104443475	120287260	104456391
104425112	104422269	104427023	120287661
120295413	104449680	104447349	104437528
120289247	120295346	120289506	104432772
104448338	120288078	120292883	104422002

104442305	104441030	104415926	120293320
104442344	104448969	104429094	108953880
104442397	108958510	104449919	104419938
104414680	104418296	104441630	104436516
104441617	104442134	104421770	120286602
104449461	104439941	104449949	120291535
104433041	104437276	108960176	novel.444
104444192	104432133	120292902	104418619
104454497	104457029	104450178	104415633
104453881	108958715	104429442	104437264
104453532	104423098	104418030	novel.186
104439635	104424578	104438227	104449034
104443984	104418132	104420259	104425171
104414235	104425738	104444829	120288673
104436298	104449735	104453135	120294662
104415167	120288985	120291256	108960346
104444209	104420566	108955632	104445860
104426849	104418242	novel.321	108953862
104445889	104456682	104448348	120291653
104442954	104437778	104425045	120289405
104450012	novel.78	novel.1216	104436777
104421048	104424796	104438632	104414132
104426678	104421655	104415589	104419000
104415826	104428685	novel.1913	104426568
104448128	104441857	104449078	104445518
104433914	108957790	120289205	novel.509
104441601	104427701	120287678	104423232
104436607	104425004	120294601	104447534
104441382	104422203	104441829	104438099
104415887	104453874	120288053	104447493
104448630	104429779	104445387	120291903
104449937	120289383	104456181	104448129
104425342	novel.1028	104441042	104452638
104438521	120295332	104451733	120286762
104433925	novel.1049	104418642	108954038
104425402	104419179	120290962	120286469
104418877	120289904	104422466	104436557
104454675	104422200	104456674	104451972
104449947	104436944	104443473	120289396
104448849	104432523	104421124	104441369
104433602	104418650	novel.487	104440380
120285843	120291194	104448345	120289413
104436370	104423148	120294126	104455371
104435993	104425580	104426611	104434037
104454487	120293249	104429607	104423808
104443460	novel.1524	104441501	104443861
104426019	104451346	104425702	104435980
104443714	104452353	104436735	104416167

120292225	120286157	104436493	104444677
104445742	104417796	104428899	104422120
104450693	108953817	104418377	104450674
104447214	104438578	104453837	104447063
104444095	104416959	104450513	120292471
104441673	104441379	104428618	120290268
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