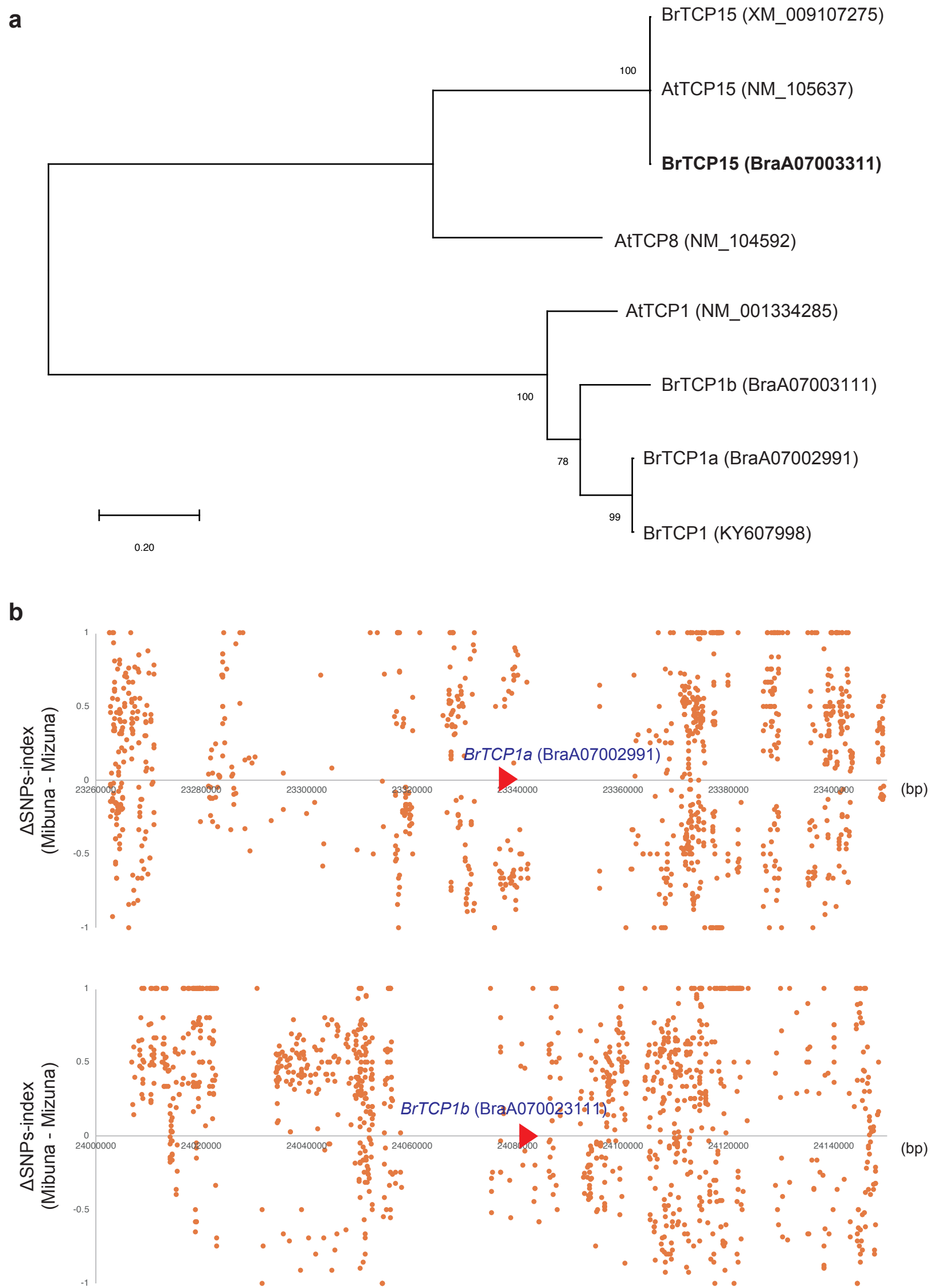
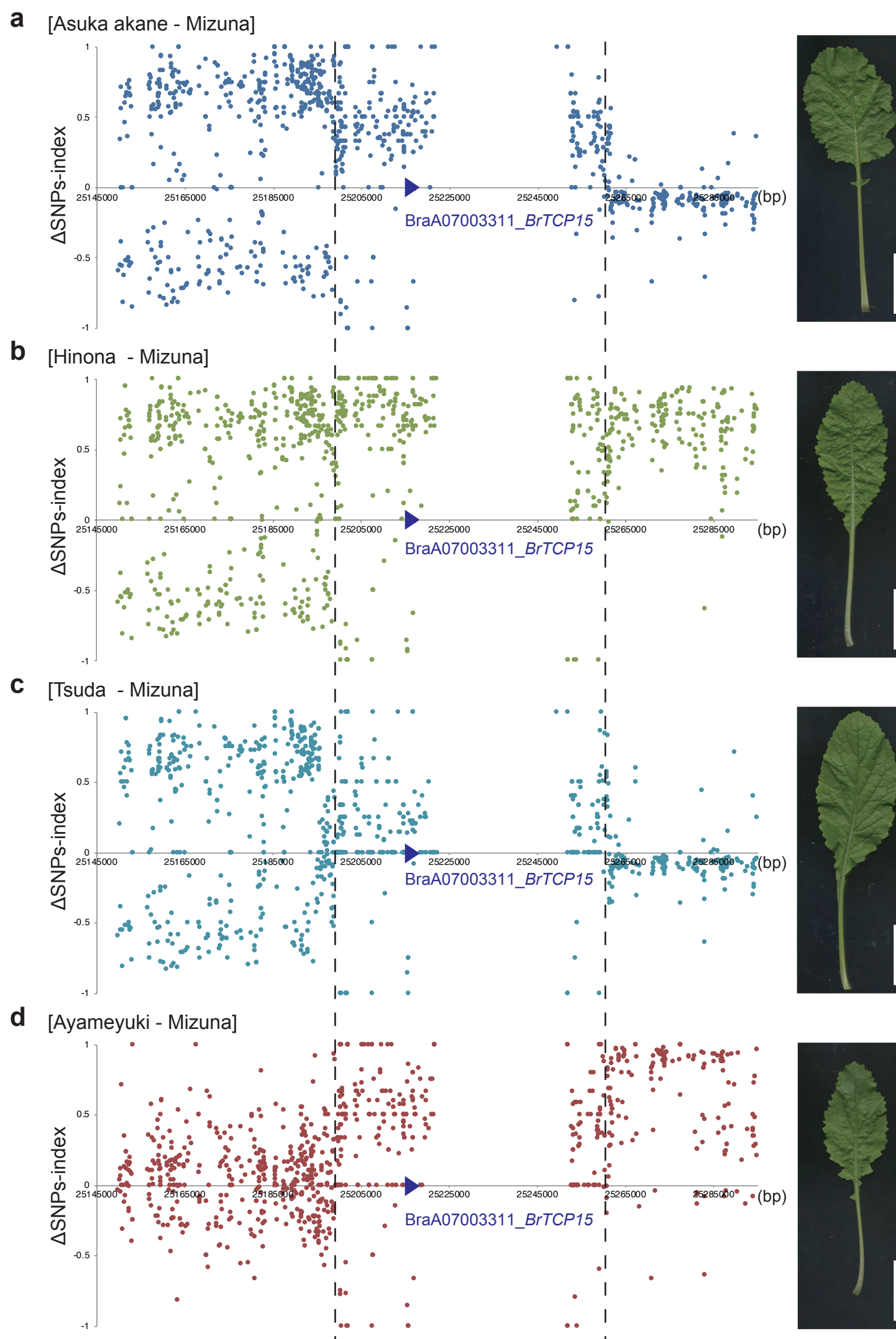


Supplementary Figure S1 Linkage map and QTLs for serration in Mizuna and Mibuna according to 2014 RAD-seq. QTL intervals and markers are shown on the right and left of each linkage group, respectively. The names of QTLs are described in Supplementary Table S1.



Supplementary Figure S2 Phylogenetic tree of *BrTCP* orthologs and SNPs around other candidate genes between Mizuna and Mibuna.

a Phylogenetic tree of *BrTCP* orthologs obtained by the neighbor-joining method using MEGA. The bootstrap values > 50% are indicated on branches. **b** The plot of the Δ SNPs-index (Mibuna-Mizuna) around BraA07002991_ *BrTCP1a* and BraA07003111_ *BrTCP1b*. Red triangles indicate each candidate gene. The vertical axis represents the Δ SNPs-index score, and the horizontal axis represents the position around *BrTCPs* on the chromosome A07 (bp).



Supplementary Figure S3 SNPs around *BrTCP15* of other turnips.

Plot of the Δ SNPs-index (Turnips-Mizuna) around *BrTCP15* of **a** Asuka akane, **b** Hinona, **c** Tsuda, and **d** Ayameyuki. The area between the dashed lines in the plot represents the approximately 61 kbp long locus between 25198 and 25259 kbp. The blue triangle in the center indicates *BrTCP15*. The vertical axis represents the Δ SNPs-index score, and the horizontal axis represents the position around *BrTCP15* on the chromosome A07 (Mb). Scale bar; 3 cm.

Supplementary Table S1 Results of QTL analysis and these genomic locations

Genotyping	Year	Sample number	Phenotype	LG	Interval*	Location (Mb)	LOD score**	Additive effect	Dominance effect	R2 (%)
CAPS markers	2013	96	Ser	A06	BraA06001813M-BraA06003805M	18.9-32.9	5.7	0.40	-0.13	8.7
				A07	BraA07003270M-BraA07003440M	25.0-26.0	18.1	0.73	-0.26	37.9
				A09	BraA09003452M-BraA09005859M	32.0-48.7	6.4	0.38	-0.20	13.2
RAD-seq	2014	82	Ser	A06	18237-17138	19.5-29.7	7.6	0.46	-0.41	24.7
				A07	14298-13693	18.3-24.7	10.0	0.57	-0.23	40.3

*Above the LOD threshold

**Scored at the LOD peak

Supplementary Table S2 Genes in QTL on LG A07 and relative expression levels by RNA-seq

gene_id	Gene name	logFC SAM Mibuna/Mizuna	logFC 1cm Mibuna/Mizuna	logFC 2cm Mibuna/Mizuna	logFC 5cm Mibuna/Mizuna
BraA07002927		-1.091535417	0.606914123	0.228021264	-0.401368952
BraA07002928		-0.139702876	0.711049054	-0.33542626	-0.207808039
BraA07002929	AtMYB62,BW62B,BW62C,MYB62	0	0	0	0
BraA07002930		0	0	0	0
BraA07002931		0	0	0	0
BraA07002932		0	0	0	0
BraA07002933		1.770081854	-0.646440094	-0.149703018	0.435473312
BraA07002934		-0.343600732	-0.547524366	-0.321817024	-0.038832169
BraA07002935	POLD2	0	0	0	0
BraA07002936		0	0	0	0
BraA07002937		-0.355244516	-0.221456803	-0.297678989	-0.257895221
BraA07002938	AtHDD14,IDD14	-0.259537248	0.2318352	-0.117812688	-0.034179623
BraA07002939	IAR1	-0.555672862	-0.199024956	-0.199942663	-0.327701529
BraA07002940		0.019204281	-0.778575731	-0.615554816	0.002932149
BraA07002941	ATMAP7-1,MAP7-1	-0.327175004	-0.022975988	-0.364222208	-0.257865604
BraA07002942	ATTPS6,TPS6	-0.577618165	-0.286237176	-0.491340379	-0.694860378
BraA07002943	ATHPR1,HPR	1.915486092	-1.690100137	-1.237615101	-1.068545732
BraA07002944	ATPIS,ATPIS1,PIS1	-0.4151152	-0.165640149	-0.176760536	-0.30522881
BraA07002945	ATLOX2,LOX2	1.175962079	1.00641702	1.868168783	-1.865147592
BraA07002946	ATLOX2,LOX2	0.259064	1.367870508	2.930880323	-1.001026106
BraA07002947	ATLOX2,LOX2	0.769176243	0.644358409	0.321084178	-0.494823795
BraA07002948	ATLOX2,LOX2	0.549157435	1.763565208	2.473813864	0.873946536
BraA07002949	AtENODL22,ENODL22	0	0	0	0
BraA07002950		0	0	0	0
BraA07002951		-1.471811794	-1.341745006	-2.366750715	-2.000524888
BraA07002952		-2.596443857	0.574313357	-0.162335891	-8.14168E-05
BraA07002953		0.464450641	0.039046668	0.563659119	0.521003666
BraA07002954		-0.886782604	-0.570715301	-0.620455566	-0.461447843
BraA07002955		-4.264724758	2.034792537	0.640646345	-0.421276298
BraA07002956		-4.128700734	1.166758079	-0.229824737	0.369091754
BraA07002957	CSK	0.738759156	0.139916166	0.032495837	0.031989637
BraA07002958	AtRLP12,RLP12	0.519479099	0.019746534	0.184719871	0.234225201
BraA07002959	AGL53	0	0	0	0
BraA07002960		1.141829061	0.990440824	0.826951748	0.759183179
BraA07002961		-0.276902267	1.756273122	0.781661397	0.122217686
BraA07002962	PSBY,YCF32	1.972695071	-0.421246366	-0.157189906	-0.02408088
BraA07002963	ARR11	-1.385910846	0.986514008	0.049495509	-0.420476837
BraA07002964		0.877307553	-0.701304237	-0.236795518	-0.177071708
BraA07002965		0.923138296	0.730089511	0.909578596	0.913071921
BraA07002966		0.024676273	-0.174953037	-0.229890199	0.209702623
BraA07002967		-0.916157748	0.771827015	-0.017969175	0.556025625
BraA07002968		0.280873255	0.889994383	0.379846249	-0.011567572
BraA07002969	ORTH2,VIM1	-6.45607051	-5.380010996	0	-4.459621729
BraA07002970	ORTH2,VIM1	0.13136871	0.418048433	0.49620621	0.540091947
BraA07002971		0.438563214	0.21215495	-0.201138111	-0.267644751
BraA07002972		1.539890715	1.140214738	-1.168618107	0.629537147
BraA07002973		0	0	0	0
BraA07002974	ATREV3,REV3	-0.375559219	0.195531809	0.102555122	-0.00402325
BraA07002975	GCS1,KNF	-0.292372692	-0.111477398	0.119830951	-0.062178382
BraA07002976		-0.18493848	3.349189925	2.293218145	0
BraA07002977		1.769081276	0.475840933	0.76979212	1.169093748
BraA07002978		0.133863236	0.512806081	0.452920058	0.785666913
BraA07002979		-0.206707626	-1.332187781	0	0
BraA07002980		0	0	0	0
BraA07002981		0.706925656	0.868254853	0.432271501	1.04746146
BraA07002982		-0.752746985	-0.541183842	-0.790419798	-0.864260299
BraA07002983		0	0	0	0
BraA07002984		0	0	0	0
BraA07002985		0	0	0	0
BraA07002986		0	0	10.64678392	9.917370889
BraA07002987		-0.106135314	0.313519764	0.225514247	0.24304408
BraA07002988		0	-0.574420696	2.172237305	0
BraA07002989		0.145838984	0.305542199	0.366928702	0.293958276
BraA07002990		-0.628156225	0.220031292	-0.157833166	-0.3613471
BraA07002991	TCP1	0	2.126431457	0	0
BraA07002992		2.271215797	0.77142688	0.727490442	0.744420851
BraA07002993	ATHPCAT1,HAC2,HAC2	0	0	0	0

BraA07002994		-2.008658665	-1.812010797	-2.091554233	-1.950424161
BraA07002995	ATHPCAT1,HAC2,HAC2	0	0	0	0
BraA07002996		-0.130323481	0.189168021	0.125327028	-0.012757257
BraA07002997	GPDL2,MRH5,SHV3	-1.356247186	-1.370434519	-1.211588524	-0.500807576
BraA07002998	ATBRXL2,BRX-LIKE2	0	0	-0.001859534	0
BraA07002999		0	0	0	0
BraA07003000	ECT3	0.280360426	-0.028857817	0.207930493	0.009740455
BraA07003001	ATDSS1(I),DSS1(I)	0.113118733	-0.723272973	-0.433557604	-0.293522672
BraA07003002		-0.026824937	-0.0639472	-0.023099803	-0.265933925
BraA07003003		0.528531212	-0.075263692	0.518529995	0.587088099
BraA07003004		-5.462907092	-3.777558927	0	-2.486834312
BraA07003005		0	-2.273401653	-3.012603455	0
BraA07003006	4CL3	1.623644742	0.016019098	0.517066396	0.25868061
BraA07003007	mtACP2	0.17844102	0.669385141	0.849008769	0.783460768
BraA07003008		0	0	0	0
BraA07003009		0.9785495	0.712378944	0.992130481	0.619346549
BraA07003010		0.876478114	0.579431965	0.6154969	0.397341012
BraA07003011	GTB1	0.371490173	0.481363485	0.310640339	0.111675891
BraA07003012		0	2.136315352	0	0
BraA07003013	FAS1,NFB2	0.280216413	0.410689277	0.532058896	0.327644001
BraA07003014	TSF	0	0	0	0
BraA07003015	TSF	0	0	0	0
BraA07003016		-0.129211281	-0.072464102	-0.138917836	-0.149113125
BraA07003017		0	0	0	0
BraA07003018	FRA3	-0.276519667	-0.036003975	-0.159007488	-0.280745311
BraA07003019	ATHEX1,HEXO3	1.589950788	0.990851531	1.135993863	1.054992179
BraA07003020	DegP3	0	0	0	0
BraA07003021	UCH2	0.29329346	0.330523251	0.407463456	0.208676357
BraA07003022		0.023727759	-0.281567606	0.054844047	0.028869617
BraA07003023	ARF8,ATARF8	0.151920257	0.555695984	0.13666438	0.374030197
BraA07003024		-1.336504611	-0.565696427	-0.706290705	-0.824077671
BraA07003025	YSL7	-1.076671415	-0.314098297	-0.340784696	-0.653953716
BraA07003026		-1.244025258	-0.848436074	-1.598805202	-1.619793147
BraA07003027	BZO1	0	-0.42391998	0	0
BraA07003028		0.590716298	0.971569421	0.859075917	0.656082918
BraA07003029	clCDH	0.026931464	0.259927798	0.09684397	-0.096903419
BraA07003030		-0.989075603	-0.240739828	-0.272158514	-0.498880036
BraA07003031	GAD2	-4.119281411	-0.852612386	-1.477089988	-2.477526768
BraA07003032	GAD2	-4.876187588	-1.553584235	-1.737804835	-2.601045908
BraA07003033	TPX1	-0.586392432	0.990304251	0.339205402	0.989200005
BraA07003034	TPX1	0.877805119	1.649651201	0.721917438	1.027913298
BraA07003035		0.390147054	-0.034459821	0.480659356	0.235631662
BraA07003036		0.076565448	0.258049295	0.577659088	0.42613066
BraA07003037		0	0	0	0
BraA07003038		0.384445323	0.165785183	0.487192864	0.449484544
BraA07003039		0.969234463	0.707042385	1.233176305	1.54067532
BraA07003040		0.314182247	0.065086639	2.058237178	-0.035901805
BraA07003041		0	0	0	0
BraA07003042		1.198247159	-0.158948832	0.09899115	0.441762897
BraA07003043	ZFP4	-5.70009583	-0.34688136	-1.276891002	-0.74247195
BraA07003044	TMK1	0.377456828	-0.006574235	-0.295440498	-0.268739337
BraA07003045		0	0	0	0
BraA07003046		0	0	0	0
BraA07003047	AtMYB2,MYB2	-0.81924714	0.058323858	-0.070389057	-1.285769385
BraA07003048		0	0	0	0
BraA07003049		0	0	0	0
BraA07003050		0.101667791	0.106607873	-0.029435231	0.065649074
BraA07003051	AtETR1,EIN1,ETR,ETR1	-0.346066673	0.322798834	-0.088412054	-0.219627233
BraA07003052		-1.421952154	-0.191991431	0.629021012	3.390256042
BraA07003053		0	0	0	0
BraA07003054		0	0	0	0
BraA07003055	ATMYB9,MYB9,PAP2	0	0	0	0
BraA07003056	ATMYB9,MYB9,PAP2	0	0	0	0
BraA07003057		0	0	0	0
BraA07003058		0	0	0	0
BraA07003059	CML23	-0.685433661	-0.528657158	-0.671836651	-0.410914628
BraA07003060	ACAM-4,CAM4	-1.349827315	-0.341492477	-0.569742687	-0.63476276
BraA07003061		-1.913076288	0.55225414	-1.143568961	-1.333761598
BraA07003062		1.334583527	0.282485872	0.451684763	0.520008641

BraA07003063	RHD6	0	0	0	0
BraA07003064	RHD6	0	0	0	0
BraA07003065		2.275277226	1.194680897	0.875391133	0.728503213
BraA07003066	PMI2	-2.55024201	-1.127233983	-1.996550662	-2.102144053
BraA07003067		-2.304851517	-1.24490195	-1.559648744	-0.669578942
BraA07003068		-0.348675054	-0.6835825	-0.668742454	-0.855672467
BraA07003069	pde194	0.728795066	-0.310556518	-0.022563766	0.302853723
BraA07003070		-0.055009512	-0.064025296	0.555400989	0.623735137
BraA07003071	PXMT1	0	-1.489348548	1.013031672	0.7695577
BraA07003072		0	0	0	0
BraA07003073	CLPP3,NCLPP3	1.125737659	-0.392093199	0.064330206	0.239573076
BraA07003074	AR41	0.11733744	0.011434871	0.218611251	0.166194058
BraA07003075		0	0	0	0
BraA07003076	ARK3,RK3	0	0	0	0
BraA07003077		0	0	0	0
BraA07003078		0	0	0	0
BraA07003079		1.604467362	0.89432967	0.346518835	1.726270841
BraA07003080		0	0	0	0
BraA07003081	PXMT1	0	0	0	0
BraA07003082		0	0	0	0
BraA07003083	PXMT1	0	0	0	0
BraA07003084	AtLIG6,LIG6	-1.978340404	-1.616150361	-1.657079219	-1.881860758
BraA07003085	ASF1A,AtSP7,SGA2,SP7	0.141324696	0.161221162	0.361026127	0.294400525
BraA07003086		-0.114712618	-0.199090461	-0.05095504	-0.125998503
BraA07003087		-3.969236905	-4.453683318	-5.220977041	-4.508390234
BraA07003088		-1.718773917	-0.482505979	-0.367275239	-0.271577016
BraA07003089		-1.712144334	-0.324311975	-0.797308256	-0.121752353
BraA07003090		-2.82108998	-3.412294854	-2.872343526	-2.320273775
BraA07003091		-4.072204863	-0.946905393	-0.94415619	-1.717143146
BraA07003092		-1.032084829	-2.013052697	-1.899313328	-1.399954509
BraA07003093		0	0	0	0
BraA07003094		-2.121219143	-1.849176411	-2.485376581	-1.775223443
BraA07003095		-2.072985272	-1.764076469	-2.068683699	-2.24916127
BraA07003096		0	-2.946712792	0	0
BraA07003097		0.23731668	-0.352292014	-0.515182264	-0.122883579
BraA07003098		0	0	0	0
BraA07003099		0	0	0.18197959	0
BraA07003100		-0.196479526	0.432375412	-0.798050474	-1.711405029
BraA07003101	ZFP6	-3.660242414	0.458934413	-0.315984052	-0.862475681
BraA07003102	ATBX3,ATBXL3,BX3,BXL3,XYL3	0	-0.538833457	0	0
BraA07003103		-1.614883655	-2.848261043	-2.564414255	-2.247323207
BraA07003104		-1.293774746	-0.500414248	-0.788587993	0.092641603
BraA07003105		0	0	0	0
BraA07003106		0	0	0	0
BraA07003107	SWEETIE	0.166734157	0.227674159	-0.117009563	-0.227503801
BraA07003108		-0.403514516	-0.264229825	-0.069344097	-0.296029815
BraA07003109		-0.368688813	-0.361231031	-0.126698191	-0.137398065
BraA07003110		-0.352770519	-0.613382153	-0.487447122	-0.270149074
BraA07003111	TCP1	-2.191849095	2.036304258	0	0
BraA07003112		0.721522095	0.505487097	0.638691788	0.567059451
BraA07003113		0	0	0	0
BraA07003114		0.838523674	-0.485818085	-0.10159041	-0.3135548
BraA07003115		-0.029595068	3.298602058	0.320746792	-1.220475433
BraA07003116		-0.477118874	-0.024457688	0.027461543	0.043801136
BraA07003117		0.322003164	0.950577551	0.952442795	1.154135536
BraA07003118		-0.922090953	-0.823433086	-0.645882084	-0.554702031
BraA07003119		0	0	0	0
BraA07003120		-0.433053056	-0.008677928	-0.132675209	-0.091079817
BraA07003121		0.689610253	0.020416234	0.031369462	0.033784137
BraA07003122	ASY1,ATASY1	-0.490827432	0.917899436	0.857565576	0.32012361
BraA07003123		0.016055429	0.163259496	-0.334983126	-0.239770927
BraA07003124		0	0	0	0
BraA07003125		0.539478203	-0.38564138	-0.077153168	0.156563535
BraA07003126	emb1688	-0.106601431	-0.671847011	-0.403230076	-0.651428827
BraA07003127		-0.753666307	0.39047499	0.31529017	-0.131631219
BraA07003128		-0.606177004	0	-0.482459396	0.347169521
BraA07003129		0.770260948	0.526103068	0.738139955	0.317701049
BraA07003130		0	0	0	0
BraA07003131		0.681137083	-0.051102229	-0.054198013	0.039263903

BraA07003132		0.546067878	0.129162446	0.69887721	0.527976805
BraA07003133		0	0	0	0
BraA07003134		0	0	0	0
BraA07003135		0	0	-0.061333817	-0.559903754
BraA07003136		-0.50497837	-0.103243735	-0.103139629	-0.843374725
BraA07003137		0.272839068	0.185537063	0.18146074	-0.000192902
BraA07003138		-0.342266655	-0.413115897	-0.433760785	0.4716235
BraA07003139		-0.394135448	1.96253805	0.722442548	1.998850006
BraA07003140		0.975822216	0.55297656	0.656013873	0.37399705
BraA07003141		0.906656685	-0.925173204	-0.480137796	-0.456697509
BraA07003142		0	0	0	0
BraA07003143		-0.576410429	-0.623701297	-0.414911928	-0.613260032
BraA07003144		0.766247508	-0.321612382	-0.07262735	0.027091202
BraA07003145	ARR11	-3.559579498	-0.979471333	-1.555205338	-0.785845951
BraA07003146		-0.473180764	2.590255939	0.661011386	-1.588614749
BraA07003147	FTSH5,VAR1	0.64707027	-0.626595984	-0.438232516	-0.571789293
BraA07003148		-0.276109213	0.74989458	0.442600061	0.479427065
BraA07003149		0.203047654	-1.35761432	-0.976239484	-0.073613273
BraA07003150	ATKCR1,KCR1,YBR159	0.115049794	-0.282551395	-0.422767429	-0.581708991
BraA07003151	PSBY,YCF32	1.202199824	-0.480011996	-0.041283005	0.103669153
BraA07003152		-1.174001764	-0.143938905	-0.667084633	-0.294509412
BraA07003153		-0.170875731	1.221599041	-0.083942543	-0.570856486
BraA07003154	TEL2	-4.591365576	0	0	0
BraA07003155		-0.108218654	-0.242235148	-0.011738859	0.325127651
BraA07003156	SDG17,SUVH7	0	0	0	0
BraA07003157		-1.264480683	0.900670372	0.871951109	-0.206406126
BraA07003158		-0.540405767	-0.647469922	-0.744542112	-0.794326864
BraA07003159	SUFE2	0	0	0	0
BraA07003160		0	0	0	0
BraA07003161	ATFXG1,FXG1	0.600538059	0.138137801	0.319051001	0.401119685
BraA07003162		0	0	0	0
BraA07003163		0	0	0	-1.478181462
BraA07003164		-8.857167391	-3.649734067	-5.092559535	-6.499303646
BraA07003165		-1.167655399	-0.083868817	-0.727708257	-1.12160468
BraA07003166		-0.462501575	-0.053816905	-0.207934148	-0.158539183
BraA07003167		-0.646535676	-0.662403824	-0.809062877	-0.715400003
BraA07003168	ATNAP3,AtSTAR1,NAP3	-1.804420332	-2.605346982	-2.742514316	-2.992816748
BraA07003169	AT-HSFA8,HSFA8	-0.796673111	-0.829559345	-1.141183114	-1.080570009
BraA07003170	CCOAMT	0	0	0	0
BraA07003171	ATPIS,ATPIS1,PIS1	0.563140793	0.613618495	0.802769072	0.769500912
BraA07003172	ATHPR1,HPR	0.286677019	-1.795890701	-1.637129839	-1.55951582
BraA07003173		-0.283905955	-0.194204067	-0.080358451	0.346500352
BraA07003174		0	0	-2.888853218	0
BraA07003175		0	0	0	0
BraA07003176	ATMAP7-1,MAP7-1	-0.103327428	-0.166388508	-0.197610363	-0.29314528
BraA07003177		-0.247315592	-0.321957845	-0.280669068	-0.136406248
BraA07003178	IAR1	0.557128821	0.4471724	0.40432314	0.382808768
BraA07003179		-0.238244991	-0.077290043	-0.841045885	-1.069100784
BraA07003180	AtIDD14,IDD14	-0.146156575	0.886443793	-0.192201194	-0.33073938
BraA07003181		0.064193871	-0.043118412	0.002237484	0.01376066
BraA07003182	ATWRKY9,WRKY9	-3.411401772	0	0.456322919	0.816254813
BraA07003183		0.3798884	0.553977044	0.458478196	0.578693338
BraA07003184		-0.513685654	0.160367134	-1.116735474	-1.28855247
BraA07003185		-0.027340154	0.575227518	-0.736723604	0.777010437
BraA07003186	APRR6,PRR6	0.530257968	0	-1.803979288	0
BraA07003187		-0.266287842	-0.238153527	-0.580039211	-0.640142318
BraA07003188		-2.617471384	-1.730034	-2.050319939	-3.740453628
BraA07003189		-0.946256663	-0.166381751	-0.198336328	-0.38360649
BraA07003190		0.901069657	-0.632744688	0.043356756	0.009895418
BraA07003191	ENDO 2	0.615272522	0.329149855	2.282231805	0.334353911
BraA07003192		-0.041157145	0.231120413	0.051227058	-0.025760798
BraA07003193		1.643705781	0.333855533	0.255686305	-0.170217714
BraA07003194	AtMYB62,BW62B,BW62C,MYB62	0	0	0	0
BraA07003195		-0.908764311	0.910925686	-0.115502767	-0.003522951
BraA07003196		-0.029665461	1.322794919	-0.621264009	1.138358455
BraA07003197		-1.750240082	0.507319654	-0.272964227	0.200991253
BraA07003198	ARG1	0.226297207	0.116809523	0.297812374	0.124151532
BraA07003199		0	0	0	0
BraA07003200		-0.888018335	0.402024207	0.25168643	-0.626497889

BraA07003201	APRR6,PRR6	0	0	0	0
BraA07003202	ATNDT2,NDT2	-0.841964001	0.905721413	1.227593024	0.106781039
BraA07003203		-0.646998654	0.307351535	0.320777473	0.235015154
BraA07003204		-0.607549493	-0.216186569	-0.564066892	-1.388834192
BraA07003205		2.070128142	1.558192925	1.682472288	2.368695461
BraA07003206	JAG	0.781778734	1.209048251	2.33171954	3.276204485
BraA07003207		0.279252156	-0.001167572	-0.149017975	-0.377926439
BraA07003208		0.701017001	-1.392980566	-0.519344363	-1.461544316
BraA07003209	LBD42	0	0	0	0
BraA07003210		0	0	0	0
BraA07003211		0.046948651	-0.094282185	0.150127712	0.550409967
BraA07003212	ATXYL1,TRG1,XYL1	0.182109838	-0.489149785	-0.069898792	-0.317198759
BraA07003213		-3.234821795	-4.061532227	-2.848453914	-3.207279265
BraA07003214		1.115910634	0.166681158	0.474008319	0.762617148
BraA07003215		-0.079087564	0.658794407	1.350171739	0.513374084
BraA07003216		0.187810159	0.334307225	0.237383542	0.437303539
BraA07003217		1.794528251	-1.052974936	-0.191640294	-0.042408428
BraA07003218		-0.232827834	-1.367230497	-0.329291852	0.190287738
BraA07003219	PCR11	0	0	0	0
BraA07003220		0	-1.42391998	0	-1.927492654
BraA07003221		0	0	0	0
BraA07003222	PAN	-0.074382985	0.522508487	1.310262797	1.609015287
BraA07003223		0.206095305	-0.150111356	0.358316328	0.161456081
BraA07003224		-0.608750193	0.027260711	0.23530095	-0.755286908
BraA07003225		5.151517626	4.475619967	5.712441533	6.639624576
BraA07003226		0.163433312	1.119597536	0.776742597	-0.065536146
BraA07003227		-0.29351857	0.154589791	0.048917818	0.212897579
BraA07003228		0.195230074	-0.26736661	-0.376092448	-0.487795904
BraA07003229		-1.09333706	0.680300954	-0.018352478	0.134989243
BraA07003230		-0.177760049	-0.901689506	-0.543233267	-0.125239696
BraA07003231	PHO1;H1	-1.991603632	1.228106878	0.884435511	0.58096508
BraA07003232	IDA	0	0	0	0
BraA07003233		1.810105086	-0.211716086	-0.012783912	0.180415181
BraA07003234	CLE12	-1.222949991	2.227191343	0.045536864	-0.265484141
BraA07003235		0.431547624	0.407788788	0.113051319	0.075466902
BraA07003236		-0.813741332	-0.300842889	-0.281446208	-0.329717747
BraA07003237	STN7	0.286935283	-0.646999327	-0.636139678	-0.676317177
BraA07003238	SSP	0	0	0	0
BraA07003239		0	0	0	0
BraA07003240		0	0	0	0
BraA07003241	ATSOFL2,SOFL2	0.865388528	-1.270704943	0.739921106	1.206313191
BraA07003242		0	0	0	5.920535764
BraA07003243		0	0	0	0
BraA07003244		0	0.526199824	0	-0.619569347
BraA07003245	WIT2	0	0	0	0
BraA07003246	WIT2	-0.213790744	-0.097187884	-0.134068816	-0.684128605
BraA07003247		-0.871664319	-0.79255156	-0.863058117	-1.111722875
BraA07003248		-0.280814949	-0.425472901	-1.363849225	-1.143031686
BraA07003249		-7.254708438	-2.604451105	-4.046235414	-4.440188406
BraA07003250		0	0	0	0
BraA07003251		0	0	0	0
BraA07003252	MGP3	0.157480564	0.087961868	0.171250507	-0.225642856
BraA07003253	BIM2	0.588313291	0.281623782	0.521239362	0.425870673
BraA07003254		-1.18973137	-0.725444923	-0.517272159	-0.742924282
BraA07003255	ACR4	0.215754822	-0.568334974	-0.211955033	-0.411332878
BraA07003256		-0.701874927	0.594517562	0.467287397	0.676557703
BraA07003257		-0.596693227	-0.469945774	-0.56443393	-0.638121543
BraA07003258		1.149146508	-0.181508951	-0.164674497	0.011034641
BraA07003259		0	0	0	1.621794751
BraA07003260	AGL7,AP1	0	0	0	0
BraA07003261		1.446087626	0.146789412	0.353031631	0.198496224
BraA07003262		-0.362646297	-0.003888223	0.018522506	0.165098762
BraA07003263	CRC	0.058658791	1.421466192	3.821212459	1.856416405
BraA07003264		0	0	0	0
BraA07003265	FLN2	1.117309461	-0.610860369	-0.026796066	0.12456844
BraA07003266	SIK1	-0.236105897	-0.124680406	-0.221893266	-0.256115213
BraA07003267		0.101224521	-0.046365269	0.341607931	0.142695294
BraA07003268	AFP1	0	0	0	0
BraA07003269	RPK1	0	0	0	0

BraA07003270		-0.478588084	-0.014686758	0.08456409	0.169813267
BraA07003271	ATWRKY57,WRKY57	0.304226574	2.877979705	4.016458239	1.453062995
BraA07003272	CLE1	1.153977012	-2.245215962	-0.603464198	-0.641608757
BraA07003273		-1.335686662	-0.28816119	-1.4843648	-1.228983528
BraA07003274		-0.491833762	0.154550456	0.20079489	0.362862883
BraA07003275		-0.126503717	-0.106777952	-0.0747777	0.013979095
BraA07003276		-0.048753505	-0.425951041	-0.542043817	-0.15301405
BraA07003277	cm-3,CM3	0.561872405	0.525210384	1.62238405	1.080576127
BraA07003278		0.426176501	-0.255211733	-0.061692218	-0.038569564
BraA07003279	ARC12,ATMINE1,MINE1	0.861108101	-0.312368389	0.038201064	0.203516819
BraA07003280	ATELF5A-3,ELF5A-3	-2.158345668	-0.214082764	-0.445615343	-0.54622332
BraA07003281		0	0	0	0
BraA07003282		0	0	0	0
BraA07003283		0.142282274	-0.306464329	-0.015640157	0.302416381
BraA07003284		0.776233525	0.048365518	-0.028050007	0.292563107
BraA07003285		-0.033684793	-0.003647734	0.140771938	0.073330474
BraA07003286		-1.843239296	0	0	0
BraA07003287		0.303592499	0.55609278	1.157457599	0.970073309
BraA07003288	ANAC29,ATNAP,NAP	1.626892887	0	2.821134905	2.55465453
BraA07003289	CYP74B1	0	0	0	0
BraA07003290		-0.201836665	0.042750973	0.152713652	0.206129814
BraA07003291	DRM1	-1.749147321	-0.204995225	-0.232697666	-0.137996273
BraA07003292		-1.267702816	-1.294940222	-1.328368631	-0.992533126
BraA07003293		0	0	0	0
BraA07003294	AT-EXP1,ATEXP1,ATEXPA1,ATHE	-0.480557263	-1.049806624	-0.209708984	0.052770864
BraA07003295	AGL94	-0.169809027	-0.324840867	-2.137171571	-1.412656728
BraA07003296	ATMYB15,LOF2,MYB15	-1.57559942	0.695087379	-0.2584281	0
BraA07003297	CARA	0.876566586	0.094042285	0.447446369	0.306962324
BraA07003298		1.748483978	1.694924223	3.155127278	1.155065828
BraA07003299		-0.328833076	0.76500836	-0.035685826	-0.166040919
BraA07003300	CLE45	-1.24948885	0.122585654	0.236069426	-0.832757995
BraA07003301		0	0	0	0
BraA07003302		0	0	0	0
BraA07003303	ATHB29,ZFHD1	-1.996368338	-0.0771219	-0.2908072	-0.508143673
BraA07003304	RPL34	0.810868157	-0.027235497	0.100142234	0.336410119
BraA07003305		0	0	0	0
BraA07003306		-2.565220526	-1.803742376	-2.508243348	-2.221934294
BraA07003307	ANAC9,FEZ	0	0	0	0
BraA07003308	SBH1	-0.058183239	0.428055288	0.268287617	0.107212295
BraA07003309		0	0	0	0
BraA07003310		-1.358515035	-1.365834825	-1.636301106	-2.125156152
BraA07003311	TCP15	-0.654302922	-1.836027063	-2.542691743	-2.54908589
BraA07003312	ATHVA22C,HVA22C	-0.507305723	-0.11053485	-0.315242345	-0.58336982
BraA07003313	ATERF-8,ATERF8,ERF8	0	0	0	0
BraA07003314	HEMB1	1.06383972	-0.427932502	0.080928944	0.015730544
BraA07003315	RPL1C,SAG24	0.709543927	-0.068050411	0.217396083	0.479313224
BraA07003316	ATCOX19-2,COX19-2	0.444095017	-0.070678887	0.146726118	0.146694015
BraA07003317		-0.445425963	-0.52038193	-0.436783604	-1.508031714
BraA07003318	ATHB13	0.212048087	0.885341502	-0.136367373	0.058138077
BraA07003319		-3.959236104	-0.8790518	-0.425097712	-1.044290267
BraA07003320	ATUBC2,UBC2	-0.218548852	0.085066184	0.001534735	-0.105145336
BraA07003321		2.007682573	0.951876892	0.955252912	0.97340173
BraA07003322		0	0	0	0
BraA07003323	AMY3,ATAMY3	0.058761421	-0.04900579	-0.105910593	-0.418518993
BraA07003324		-0.407897429	-0.227131843	-0.170880626	-0.390399819
BraA07003325		0	0	0	0
BraA07003326		0	0	0	0
BraA07003327	NRT1.7	-0.237213693	2.079029788	0.914893459	-0.52974533
BraA07003328	ATH8,TH8	-4.147111883	0.011302919	0.014825807	0.326024446
BraA07003329		0.659986792	-0.62138766	-0.145763005	-0.062667558
BraA07003330		0	0	0	0
BraA07003331		0.139861977	-1.500601889	-1.584068644	-1.543773037
BraA07003332		-1.98145042	-1.518990293	-2.043390913	-1.136075401
BraA07003333	ATGSTU12,GSTU12	-0.040898739	0.719152717	-0.08407556	-0.062795447
BraA07003334	ATGSTU12,GSTU12	0.920318158	-1.753822378	-2.41117852	-1.458809745
BraA07003335	iqd9	-1.533883953	-1.723365999	-1.566756738	-1.392266224
BraA07003336	ATGSTU11,GSTU11	0.225231962	-2.346814567	-2.47978451	-1.343087606
BraA07003337	SHW1	0.502770241	-0.388648821	-0.307242829	0.050609887
BraA07003338		-0.122802444	-0.081306129	0.033791375	-0.063511765

BraA07003339	PP2A	-0.547953833	-0.456162587	-0.615267993	-0.491998114
BraA07003340	CLE26	-0.346482727	-0.1315724	-0.447969655	0.204960536
BraA07003341		-0.29312544	-0.271966349	-0.456012864	-0.392722506
BraA07003342		-4.68747763	1.40066095	-2.402894539	-0.91327674
BraA07003343		0	0	0	0
BraA07003344		0	0	0	0
BraA07003345	SNL4	-0.020553709	0.113724112	-0.127337828	-0.206728287
BraA07003346	EMB25,ISE2,PDE317	0.907634538	-0.347235699	-0.104164723	-0.108798109
BraA07003347		0	0	0	0
BraA07003348	IAR4	-0.816149853	-0.143736224	0.092144142	-0.362507641
BraA07003349	GATL9,LGT8	0.854628935	0.482870426	0.031090353	0.391683258
BraA07003350		-0.139473334	0.329438158	0.226560648	0.268138311
BraA07003351		0	0	0	0
BraA07003352		0	0	0	0
BraA07003353		1.333544553	2.720344496	-0.054274092	1.008348803
BraA07003354	ATFH8,FH8	-0.149355127	-0.016228135	-1.373444795	0.107942406
BraA07003355		0.52759028	0.492108419	0.42476626	0.320268323
BraA07003356		-0.257591825	-0.136182335	-0.4004396	-0.520265127
BraA07003357		0	0	0	0
BraA07003358		0	0	0	0
BraA07003359	MMP	1.890945807	-0.709900132	-0.718137346	-0.400273698
BraA07003360	ATCYCD1;1,CYCD1;1	1.404705321	0.521268122	0.572906	0.99951361
BraA07003361	TBL27	-1.124842443	0.123152028	0.015940256	0.680445153
BraA07003362		-8.202331942	0	-0.7177701	0.122503092
BraA07003363		-1.144343838	-0.28506005	-0.403188966	-0.242489162
BraA07003364		0	0	0	0
BraA07003365		-1.149715116	-2.375615449	-2.677885534	-3.191679307
BraA07003366	KUP6	-1.280184071	-1.267595861	-1.160563106	-0.959194093
BraA07003367	ENT1,ENT1AT	0	0	0	0
BraA07003368	PG2	-0.095921898	0.179186264	-0.131347622	-0.346596199
BraA07003369		0	-0.458531044	0	0
BraA07003370	ATBCA4,BCA4,CA4	-0.529754467	-1.634485623	-0.021364591	-0.06287452
BraA07003371		0	0	0	0
BraA07003372		-0.718067587	-0.11378968	-0.695551779	-1.563068126
BraA07003373		0.143308657	-0.406552625	-1.026449138	-1.35389833
BraA07003374	SRO3	0	0	0	0
BraA07003375	RHS1	-5.43168549	-4.870532643	-6.301740444	0
BraA07003376		-0.022514301	-0.148148246	0.35022392	0.292933174
BraA07003377		-0.444861763	-0.418407078	-0.444959138	-0.14059525
BraA07003378	ARF1,ATARF,ATARF1,ATARFA1A	-0.681306148	-0.366858592	-0.413044848	-0.572166967
BraA07003379		-0.204885915	-0.299199122	-0.259231984	0.058831291
BraA07003380		-1.420141545	0.651730388	-1.132853535	-1.54973114
BraA07003381		0.75252361	-0.442494549	-0.225360882	0.191063557
BraA07003382		0.201122338	0.357612919	-0.470389489	0.736347688
BraA07003383		0.293281522	1.457356046	0.893026998	1.156202085
BraA07003384		1.396321252	1.50418602	0.697415677	1.19019045
BraA07003385		-1.548925943	0.03219445	-0.229038138	-0.96438502
BraA07003386	CRK2	-1.546717648	-2.225280011	-2.738172422	-2.887211662
BraA07003387	CRK3	0	0	0	0
BraA07003388	CRK3	-0.793715559	-0.784310255	-1.593536027	-2.365038286
BraA07003389	CRK3	1.826908473	2.426751153	2.209685867	1.217640824
BraA07003390		0.026281736	-0.33655992	-0.159299051	-0.298703579
BraA07003391	SAV3,TAA1,WEI8	-1.597270787	-1.416715253	0.660911301	-0.689654614
BraA07003392	AOAT2,GGT2	-0.608424482	-0.205140054	-0.873433048	-1.233039525
BraA07003393		-5.271366891	-4.337336223	-3.1106792	-3.36904766
BraA07003394		-0.973678842	-1.19934238	-1.131341054	-1.051711403
BraA07003395		0.051067891	-0.739553972	-0.332714828	0.140960235
BraA07003396		0.391096987	-0.073165208	0.1532493	0.368824436
BraA07003397		-0.776418693	-0.372059689	-0.321811553	-0.547558585
BraA07003398		-4.618084289	0.125319665	-0.074484416	0.418528603
BraA07003399		0.522043117	0.866496802	-0.652327805	0.111761626
BraA07003400		-0.589848461	-0.444621445	-0.394446744	-0.250784318
BraA07003401		-0.399392448	-0.295191876	-0.304520226	-0.450330743
BraA07003402	HWI1,PDLP5	-3.047486063	-2.1512071	-1.095172912	-0.707645635
BraA07003403	JAZ9,TIFY7	0.842342679	-1.155301133	-0.099256854	-0.577081025
BraA07003404	ATGH9B1,CEL1,GH9B1	0.165385744	-0.299628545	0.189041033	0.650050353
BraA07003405		-0.939767618	-1.139304732	-1.928287456	0
BraA07003406		1.627920983	0.672535412	-0.176586623	1.499371608
BraA07003407	CRR23	2.274000863	-1.608211737	-0.987398674	-0.661148983

BraA07003408		0	0	0	0
BraA07003409		0.464092724	0.180508294	0.103336276	0.064731451
BraA07003410		0.263586987	-0.042451453	0.04472756	0.18250086
BraA07003411		-0.211888415	-0.155377124	-0.554953867	-0.237782958
BraA07003412		-3.830032692	-0.844504622	-0.934760768	-0.702861042
BraA07003413		1.448098118	-1.219240075	-0.824896473	-0.54553055
BraA07003414		-1.718229051	-1.402596142	-1.213987814	-1.861461537
BraA07003415	MLP28	0.198723481	0.230024079	0.748473333	1.229531326
BraA07003416	MLP28	0.295158933	0.514816504	1.156727139	1.11385311
BraA07003417		-0.57522424	0	0	0.106781039
BraA07003418		0	0	0	0
BraA07003419		0	0	0	0
BraA07003420	MLP28	-1.538281672	0.431128634	2.074169072	0.902004556
BraA07003421	MLP31	1.159196119	1.617444455	1.03859365	0.730192081
BraA07003422	CLE17	0.139344438	0.152961776	0.178020676	0.249408394
BraA07003423		0.206058316	0.096522441	-0.090560527	-0.127577439
BraA07003424	ATHB18,HB18	-2.797301881	0.366202321	-0.155464275	-0.284784823
BraA07003425	ATPIN3,PIN3	0.013601076	0.009764622	-0.33025515	-0.455370732
BraA07003426	ATPIN3,PIN3	0	0	0	0
BraA07003427		-0.22326579	0.093740502	-0.621586734	-0.279867605
BraA07003428		-0.676925552	0.783655668	0.487191208	-0.364203088
BraA07003429		0.249937766	-0.364745086	-0.502574346	-0.446594792
BraA07003430		-1.528579802	-1.721196796	-0.933278608	-0.874715337
BraA07003431		0	0	0	0
BraA07003432	FAB1C	-0.479667378	0.312049556	-0.196614684	-0.016732541
BraA07003433		-3.796921052	0	0	0
BraA07003434		-3.098020169	-0.980926322	-1.198844441	-0.936428889
BraA07003435		-2.920049245	-0.636615394	-1.232316523	-1.541379812
BraA07003436	ATMYBL2,MYBL2	-0.251067533	-2.006065662	-2.850943807	-2.55106084
BraA07003437	LPR2	-1.217554056	-0.716662705	-0.796255657	-0.66404822
BraA07003438		0	-0.271623937	-1.904938959	0
BraA07003439		2.112779537	-0.914264936	-0.517639564	0.122572606
BraA07003440		-0.427128358	-0.158176985	-0.184139828	-0.112291655
BraA07003441	PIN-LIKE2	-0.358872136	-0.359029898	-0.566021872	-0.676487148
BraA07003442		-1.557831024	-0.882021942	-1.494958513	-0.937078544
BraA07003443		-1.696272408	0.786702117	0.041657339	-1.14796511
BraA07003444		0	0	0	0
BraA07003445		0	0	0	0
BraA07003446		0	-3.183334915	-3.096441517	-1.684969152
BraA07003447		0	0	-8.161651192	0
BraA07003448		0	-2.008732468	0	0
BraA07003449		0.16760469	0.010247568	-0.04856831	0.00904417
BraA07003450	EBS1,PSL2,UGGT	0.347834832	0.599589207	0.40880895	0.099073333
BraA07003451		0.923491845	0.065118144	0.628775269	0.574098517
BraA07003452		-0.205882345	0.001529856	0.182996171	0.150577159
BraA07003453		-1.089444667	-1.155155471	-1.339412315	-1.1636263
BraA07003454		0	0	0	0
BraA07003455	ATWHY2,WHY2	-0.546517102	-0.399606547	-0.1203403	0.069072615
BraA07003456	ATVPS52,POK,TTD8	0.430679838	0.32128757	0.378300724	0.159244023