

Supplementary Table 1 Differential methylation positions between responders and nonresponders

Probe ID	Responders	Nonresponders	Delta beta	t-value	p-value	q-value
cg16988194	0.530401947	0.464760979	0.065640968	9.489047613	1.94E-10	0.000163057
cg11127915	0.250822883	0.166812269	0.084010614	7.627769392	1.94E-08	0.005436696
cg02939875	0.402186675	0.239700082	0.162486593	7.389908165	3.61E-08	0.006066146
cg11666770	0.835393551	0.712610929	0.122782622	6.958946063	1.13E-07	0.008014008
cg19432846	0.542665971	0.370066972	0.172598999	6.926977231	1.23E-07	0.008014008
cg18429921	0.6111851	0.751852509	-0.140667409	-6.917605455	1.26E-07	0.008014008
cg27056759	0.559447462	0.63443421	-0.074986748	-6.693955812	2.30E-07	0.010743005
cg18009484	0.628178093	0.493758324	0.134419769	6.543337728	3.46E-07	0.01141032
cg15617140	0.582191988	0.653463397	-0.071271409	-6.536577531	3.53E-07	0.01141032
cg21259978	0.577651031	0.464736002	0.11291503	6.495767982	3.94E-07	0.01141032
cg15312845	0.605958325	0.751840324	-0.145881998	-6.455198206	4.40E-07	0.01141032
cg15721584	0.487233144	0.377961024	0.10927212	6.453616379	4.42E-07	0.01141032
cg00626624	0.794111733	0.863649558	-0.069537825	-6.437191351	4.62E-07	0.01141032
cg10214968	0.845459799	0.912034197	-0.066574398	-6.340281983	6.02E-07	0.012324518
cg20283107	0.584377628	0.519266679	0.065110949	6.267030094	7.36E-07	0.013200514

cg27389201	0.575040935	0.509239723	0.065801212	6.188549458	9.12E-07	0.013616594
cg22784187	0.578403249	0.51360987	0.064793379	6.173323139	9.51E-07	0.013616594
cg17148552	0.731096262	0.670587332	0.06050893	6.143781941	1.03E-06	0.013616594
cg16639876	0.747075516	0.683273113	0.063802403	6.13752424	1.05E-06	0.013616594
cg00206639	0.362540274	0.447630277	-0.085090002	-6.083361224	1.22E-06	0.014603516
cg26458748	0.474876512	0.316294037	0.158582474	6.041883558	1.37E-06	0.015485738
cg14086396	0.725979165	0.799124905	-0.07314574	-5.997267337	1.54E-06	0.016614611
cg19528338	0.320403364	0.256378103	0.064025261	5.989286573	1.58E-06	0.016665295
cg22086510	0.444064313	0.343738554	0.100325759	5.950936271	1.76E-06	0.016982727
cg19261626	0.422938682	0.504977726	-0.082039044	-5.911816551	1.96E-06	0.017078495
cg07981168	0.42785745	0.298400578	0.129456871	5.890926616	2.07E-06	0.017078495
cg06516024	0.245557331	0.160172871	0.085384461	5.875225556	2.16E-06	0.017078495
cg08647039	0.41406841	0.348664903	0.065403507	5.874735098	2.17E-06	0.017078495
cg08100005	0.699190605	0.778001242	-0.078810638	-5.864850033	2.23E-06	0.017078495
cg15339688	0.807268129	0.868882049	-0.061613921	-5.859282178	2.26E-06	0.017078495
cg20942162	0.596913538	0.515925147	0.080988391	5.853356952	2.30E-06	0.017078495
cg08454687	0.476162978	0.401551647	0.074611331	5.844651725	2.35E-06	0.017078495

cg12076915	0.680042039	0.611681344	0.068360695	5.838017395	2.40E-06	0.017078495
cg02409829	0.552986723	0.6983828	-0.145396078	-5.837517262	2.40E-06	0.017078495
cg17352610	0.355395979	0.269927008	0.08546897	5.815127111	2.56E-06	0.01729177
cg10248985	0.773014842	0.857181023	-0.084166181	-5.801996824	2.65E-06	0.017336463
cg25802927	0.445449471	0.357665426	0.087784046	5.785176125	2.78E-06	0.017516702
cg25240753	0.651949185	0.59161649	0.060332695	5.760074738	2.98E-06	0.017710733
cg12368583	0.200422256	0.135189975	0.065232281	5.735723747	3.18E-06	0.017933936
cg08675364	0.666498321	0.544067496	0.122430825	5.715207367	3.37E-06	0.018123342
cg11273618	0.78630134	0.71234054	0.0739608	5.681557125	3.70E-06	0.018866015
cg10508439	0.636500748	0.574897556	0.061603192	5.672886711	3.79E-06	0.018866015
cg00108282	0.718642881	0.64793759	0.070705291	5.651817051	4.02E-06	0.018866015
cg11258813	0.315263374	0.228841026	0.086422348	5.646925802	4.08E-06	0.018891426
cg23150800	0.384858326	0.270647216	0.11421111	5.624587619	4.34E-06	0.019561127
cg17187722	0.693015158	0.606865246	0.086149912	5.607968951	4.54E-06	0.019849205
cg23924526	0.502999177	0.405780055	0.097219122	5.607798509	4.54E-06	0.019849205
cg04367503	0.475966533	0.397834985	0.078131549	5.602951312	4.61E-06	0.019849205
cg24905039	0.857168376	0.78483368	0.072334696	5.599679658	4.65E-06	0.019894252

cg05332652	0.712517684	0.875699643	-0.163181959	-5.594326578	4.72E-06	0.020012578
cg06784691	0.402101095	0.3111056614	0.091044481	5.588659247	4.79E-06	0.020103181
cg26192556	0.555895837	0.619492902	-0.063597065	-5.547278589	5.38E-06	0.020848863
cg02225599	0.331578999	0.244079772	0.087499227	5.540282966	5.48E-06	0.020848863
cg14395761	0.709745422	0.64854806	0.061197363	5.502490809	6.09E-06	0.020948852
cg08657654	0.826782792	0.733365315	0.093417477	5.497280147	6.18E-06	0.020991961
cg23657179	0.559143346	0.430420942	0.128722403	5.485109561	6.39E-06	0.020993561
cg08477158	0.346228558	0.265483299	0.08074526	5.477972385	6.52E-06	0.020993561
cg13604782	0.78894921	0.708901547	0.080047663	5.475798164	6.56E-06	0.020993561
cg14766704	0.865563907	0.92662861	-0.061064703	-5.474956309	6.58E-06	0.020993561
cg26507353	0.921675405	0.793799169	0.127876236	5.462965636	6.80E-06	0.021129965
cg03109384	0.808800923	0.742808565	0.065992358	5.445790494	7.13E-06	0.0211534
cg27434596	0.586435811	0.672433307	-0.085997497	-5.441351568	7.22E-06	0.0211534
cg04000474	0.760984817	0.844553176	-0.083568359	-5.439096392	7.27E-06	0.0211534
cg02972988	0.607500755	0.540799404	0.066701351	5.426736417	7.52E-06	0.021393789
cg09154256	0.489474686	0.418235098	0.071239588	5.390923142	8.31E-06	0.022439813
cg01925508	0.75524764	0.663843862	0.091403778	5.387436405	8.39E-06	0.022464344

cg11373252	0.47194534	0.407967924	0.063977416	5.369489178	8.82E-06	0.022895399
cg26628069	0.828595898	0.762421402	0.066174496	5.35835736	9.10E-06	0.023201788
cg20567337	0.518592015	0.586837001	-0.068244986	-5.353667806	9.22E-06	0.023201788
cg18790187	0.595427841	0.526797851	0.06862999	5.351591161	9.27E-06	0.023201788
cg09727084	0.717258314	0.778311859	-0.061053545	-5.34319069	9.49E-06	0.023201788
cg13098738	0.82619756	0.757959409	0.068238151	5.336597629	9.67E-06	0.023201788
cg19089701	0.484919753	0.380425752	0.104494001	5.33237401	9.79E-06	0.023201788
cg24993990	0.627736512	0.56144472	0.066291792	5.332149868	9.79E-06	0.023201788
cg09785958	0.694643222	0.775654811	-0.081011589	-5.329704507	9.86E-06	0.023201788
cg05628902	0.242565735	0.333201742	-0.090636007	-5.329401306	9.87E-06	0.023201788
cg14120403	0.581421713	0.497457867	0.083963846	5.326599133	9.94E-06	0.023201788
cg00114478	0.156258999	0.226783942	-0.070524943	-5.310187932	1.04E-05	0.023477486
cg16280399	0.844360094	0.768522913	0.075837181	5.304836789	1.06E-05	0.023518857
cg15200418	0.532777662	0.44512916	0.087648502	5.294815133	1.09E-05	0.023800455
cg03440981	0.564442995	0.66637332	-0.101930325	-5.288849083	1.10E-05	0.023800455
cg23608935	0.634753309	0.703023057	-0.068269748	-5.286920532	1.11E-05	0.023800455
cg06884805	0.313164377	0.222760237	0.09040414	5.277284886	1.14E-05	0.02399808

cg11826869	0.763319294	0.836528384	-0.07320909	-5.263600372	1.19E-05	0.024307189
cg22030053	0.781229898	0.720350171	0.060879727	5.261897094	1.19E-05	0.024316887
cg06955459	0.726958479	0.802638894	-0.075680414	-5.256544866	1.21E-05	0.024447884
cg04300150	0.766545423	0.858038254	-0.091492831	-5.244896095	1.25E-05	0.024963354
cg05547438	0.297377619	0.206357444	0.091020175	5.233699583	1.29E-05	0.025335589
cg23841297	0.567068894	0.48643705	0.080631845	5.228244175	1.31E-05	0.025335589
cg23950788	0.601158788	0.678917403	-0.077758615	-5.225341018	1.32E-05	0.025335589
cg20508302	0.765898887	0.655207864	0.110691023	5.223609553	1.33E-05	0.025394737
cg01867652	0.864751825	0.798194034	0.066557791	5.217759636	1.35E-05	0.025521536
cg01193555	0.508755684	0.440686786	0.068068898	5.213621851	1.36E-05	0.025702033
cg19023851	0.665603793	0.594651292	0.0709525	5.20586098	1.39E-05	0.025922599
cg22896572	0.619607804	0.556281639	0.063326165	5.205764059	1.39E-05	0.025922599
cg01548680	0.372165468	0.300477735	0.071687733	5.204025949	1.40E-05	0.025958743
cg15210829	0.416912544	0.331227175	0.085685369	5.203680174	1.40E-05	0.025958743
cg04399643	0.638559018	0.737387013	-0.098827995	-5.195174831	1.44E-05	0.026178045
cg16988262	0.683171745	0.617628065	0.065543681	5.184467674	1.48E-05	0.026316379
cg13264840	0.618789329	0.716776949	-0.09798762	-5.181866346	1.49E-05	0.026422373

cg27091787	0.683079564	0.587837397	0.095242166	5.174066903	1.52E-05	0.026445013
cg09265161	0.509111057	0.429786231	0.079324826	5.162084403	1.57E-05	0.02667759
cg15576517	0.694551259	0.633388957	0.061162302	5.161459427	1.58E-05	0.02667759
cg22030847	0.574648421	0.509006349	0.065642072	5.154990505	1.61E-05	0.02667759
cg16328494	0.660684136	0.597859105	0.062825031	5.154620848	1.61E-05	0.02667759
cg00108228	0.421175741	0.322044493	0.099131248	5.137672853	1.69E-05	0.02724388
cg20628663	0.286463817	0.217545276	0.068918541	5.12997475	1.72E-05	0.027245386
cg17984267	0.731223168	0.620485966	0.110737203	5.12756493	1.73E-05	0.027287149
cg07884459	0.619989582	0.532294802	0.087694779	5.121227892	1.76E-05	0.02737762
cg04242580	0.443345685	0.336244615	0.10710107	5.118640298	1.78E-05	0.027410076
cg00622375	0.621221343	0.549437198	0.071784145	5.108912485	1.83E-05	0.027582663
cg15811568	0.769193665	0.829322958	-0.060129293	-5.108219715	1.83E-05	0.027582663
cg26513689	0.306258593	0.230903936	0.075354657	5.104669788	1.85E-05	0.027582663
cg21875543	0.614080585	0.533194806	0.080885778	5.104364117	1.85E-05	0.027582663
cg20035459	0.504445702	0.56593265	-0.061486948	-5.103803985	1.85E-05	0.027582663
cg12030332	0.744346841	0.683009799	0.061337041	5.095787431	1.89E-05	0.02759326
cg09732913	0.566875502	0.484466515	0.082408988	5.08449233	1.95E-05	0.027754732

cg10732641	0.457777065	0.386022208	0.071754857	5.081856639	1.97E-05	0.027854001
cg00042969	0.729838614	0.639914181	0.089924433	5.070839148	2.03E-05	0.028119713
cg27342781	0.516494048	0.429980741	0.086513307	5.063811196	2.07E-05	0.028345553
cg20477147	0.295566209	0.225779337	0.069786872	5.059853654	2.09E-05	0.028345553
cg04811682	0.552514019	0.487173743	0.065340276	5.054127157	2.13E-05	0.028370551
cg14023999	0.630859443	0.568372126	0.062487317	5.053607047	2.13E-05	0.028370551
cg14054883	0.642620791	0.733712508	-0.091091716	-5.050539101	2.15E-05	0.028490501
cg16948489	0.438825757	0.510994768	-0.072169011	-5.047537918	2.17E-05	0.028639796
cg13879177	0.680778598	0.752216968	-0.07143837	-5.043877468	2.19E-05	0.028778546
cg14022475	0.706475764	0.775176859	-0.068701095	-5.041925141	2.20E-05	0.028864953
cg05876564	0.38752534	0.286825503	0.100699837	5.034644023	2.25E-05	0.029050707
cg21160842	0.511001645	0.426338496	0.084663149	5.032857713	2.26E-05	0.029050707
cg25369262	0.535697297	0.46678343	0.068913866	5.029195215	2.28E-05	0.029050707
cg08862479	0.73321586	0.661723712	0.071492149	5.028207882	2.29E-05	0.029050707
cg07796826	0.799910276	0.73014981	0.069760466	5.023708607	2.32E-05	0.029050707
cg14066715	0.742117197	0.584192019	0.157925178	5.022097787	2.33E-05	0.029050707
cg01542107	0.505923437	0.432203058	0.07372038	5.014615051	2.38E-05	0.029363093

cg18126312	0.609226833	0.544637191	0.064589643	5.011858617	2.39E-05	0.029408616
cg18582408	0.315644032	0.231179378	0.084464654	5.010909695	2.40E-05	0.029408616
cg10518850	0.810796254	0.704137523	0.106658731	5.004376511	2.45E-05	0.029546121
cg21708364	0.659242535	0.719502443	-0.060259908	-4.992250469	2.53E-05	0.029658143
cg03692937	0.307183327	0.246478428	0.060704899	4.990236389	2.54E-05	0.029718572
cg00937175	0.693890693	0.756654669	-0.062763975	-4.982061273	2.60E-05	0.029879665
cg17371585	0.84281607	0.768347541	0.07446853	4.980914222	2.61E-05	0.029879665
cg24915592	0.506940547	0.44550589	0.061434657	4.970010787	2.69E-05	0.030392906
cg06426784	0.666800203	0.582084068	0.084716136	4.953015147	2.82E-05	0.030965566
cg19846154	0.867022209	0.79621487	0.070807339	4.950036761	2.85E-05	0.030965566
cg07483503	0.902441949	0.807621198	0.094820751	4.949146983	2.85E-05	0.030965566
cg15706574	0.314448015	0.407610779	-0.093162764	-4.94443952	2.89E-05	0.031123959
cg09842038	0.5639285	0.488389737	0.075538763	4.941801399	2.91E-05	0.031123959
cg23784996	0.836667654	0.775806725	0.060860929	4.938204106	2.94E-05	0.031255606
cg09549794	0.837300878	0.899511905	-0.062211027	-4.931043283	3.00E-05	0.03134199
cg00151073	0.587046841	0.524799969	0.062246872	4.930565747	3.00E-05	0.03134199
cg20874052	0.440346986	0.519275305	-0.078928319	-4.92427682	3.06E-05	0.031459878

cg25608645	0.664074538	0.551554335	0.112520202	4.92386516	3.06E-05	0.031459878
cg23024047	0.215525583	0.153052312	0.06247327	4.919579356	3.10E-05	0.031459878
cg13733755	0.571404869	0.644995156	-0.073590287	-4.91592196	3.13E-05	0.031459878
cg10680621	0.39523101	0.325331534	0.069899477	4.914369421	3.14E-05	0.031459878
cg25541968	0.413702888	0.335940064	0.077762824	4.912583564	3.16E-05	0.031459878
cg25064551	0.619370952	0.556627874	0.062743078	4.910723375	3.18E-05	0.031459878
cg20198642	0.615852703	0.540011347	0.075841357	4.907354882	3.21E-05	0.031490764
cg20337103	0.481426213	0.546961386	-0.065535173	-4.906352533	3.21E-05	0.031490764
cg13127542	0.298195108	0.164987967	0.133207141	4.906083847	3.22E-05	0.031490764
cg16896868	0.648343738	0.554287993	0.094055745	4.905019859	3.23E-05	0.031490764
cg01261821	0.683118008	0.74382529	-0.060707282	-4.90408492	3.24E-05	0.031490764
cg17429282	0.724629844	0.61445634	0.110173504	4.903255949	3.24E-05	0.031490764
cg05927789	0.418484486	0.482506726	-0.064022241	-4.901552912	3.26E-05	0.031490764
cg06692384	0.757175619	0.637945119	0.1192305	4.897666581	3.29E-05	0.031499288
cg15200801	0.569166586	0.498550027	0.070616559	4.896560436	3.30E-05	0.031536901
cg24425727	0.356804243	0.269647989	0.087156254	4.895335762	3.32E-05	0.031577483
cg26107250	0.332344313	0.269640022	0.062704292	4.890460121	3.36E-05	0.031621704

cg23063236	0.412389823	0.34932312	0.063066704	4.887434809	3.39E-05	0.031701229
cg04422903	0.36907512	0.308001381	0.061073739	4.885758098	3.40E-05	0.031711523
cg16248511	0.350816044	0.278769286	0.072046759	4.883234438	3.43E-05	0.031820936
cg02449670	0.534629927	0.738159318	-0.203529391	-4.882912643	3.43E-05	0.031820936
cg07169182	0.648291357	0.71503263	-0.066741273	-4.882902594	3.43E-05	0.031820936
cg27003832	0.479330999	0.399481579	0.07984942	4.87646303	3.49E-05	0.032084618
cg03331229	0.52840518	0.446849572	0.081555608	4.874535278	3.51E-05	0.032150462
cg05697656	0.227963502	0.147851927	0.080111575	4.871717805	3.54E-05	0.032150462
cg12081645	0.321890313	0.240521432	0.08136888	4.871061606	3.55E-05	0.032150462
cg13119003	0.410336811	0.304560399	0.105776412	4.867230771	3.59E-05	0.032245543
cg20749955	0.146619871	0.236903475	-0.090283603	-4.865431484	3.60E-05	0.032259054
cg05858302	0.296614761	0.230327805	0.066286956	4.861021855	3.65E-05	0.032392633
cg20310171	0.479751513	0.348500484	0.13125103	4.857863415	3.68E-05	0.032442547
cg23584176	0.730242895	0.564460385	0.165782511	4.850331038	3.76E-05	0.032745303
cg05207638	0.4484467	0.37410179	0.074344911	4.846713861	3.80E-05	0.032884231
cg05699681	0.528624412	0.67856191	-0.149937499	-4.846168564	3.80E-05	0.032884231
cg15318916	0.416499257	0.350157338	0.066341919	4.839907875	3.87E-05	0.032921992

cg10649130	0.751448094	0.682926362	0.068521732	4.839745684	3.87E-05	0.032921992
cg05422993	0.739084282	0.654521995	0.084562286	4.833859472	3.94E-05	0.033004507
cg06300046	0.558911231	0.470028409	0.088882822	4.832897818	3.95E-05	0.033004507
cg10007051	0.765457617	0.830288347	-0.06483073	-4.829661185	3.98E-05	0.033107216
cg13299847	0.476638907	0.407187442	0.069451464	4.82766107	4.00E-05	0.033127531
cg21227325	0.677740067	0.591571015	0.086169053	4.824212388	4.04E-05	0.033223825
cg20128880	0.473906182	0.404589113	0.069317069	4.823404524	4.05E-05	0.033241344
cg22911917	0.764556019	0.700217502	0.064338517	4.821765931	4.07E-05	0.03335331
cg16222710	0.477679737	0.547397705	-0.069717968	-4.820954424	4.08E-05	0.033358801
cg06806711	0.310018	0.372332165	-0.062314165	-4.811603233	4.19E-05	0.033794348
cg25653606	0.511771444	0.446929407	0.064842037	4.806836085	4.24E-05	0.034007604
cg02901923	0.559568991	0.620265179	-0.060696188	-4.797416918	4.36E-05	0.034387218
cg04638014	0.464294316	0.370893402	0.093400914	4.795432751	4.38E-05	0.034427377
cg21871330	0.862702141	0.802358298	0.060343843	4.794449889	4.39E-05	0.034427377
cg21703875	0.303087383	0.241917636	0.061169748	4.792206322	4.42E-05	0.034427377
cg18610541	0.674739352	0.574823467	0.099915885	4.7908998	4.44E-05	0.034427377
cg14871544	0.502243982	0.565789422	-0.06354544	-4.789210572	4.46E-05	0.034427377

cg19030331	0.350975204	0.283349981	0.067625223	4.789090236	4.46E-05	0.034427377
cg04639761	0.444253609	0.336955413	0.107298196	4.785615856	4.50E-05	0.034583234
cg24207698	0.43271013	0.335991951	0.096718179	4.782583527	4.54E-05	0.034602337
cg02782895	0.341611671	0.404554763	-0.062943092	-4.779163068	4.58E-05	0.034652064
cg21827892	0.804748944	0.735283858	0.069465087	4.761572898	4.81E-05	0.035156882
cg03198010	0.791340135	0.859172672	-0.067832537	-4.758872433	4.85E-05	0.035185953
cg04442388	0.319167516	0.379453927	-0.060286412	-4.753353717	4.93E-05	0.035325944
cg12965009	0.302044128	0.237468611	0.064575517	4.751093034	4.96E-05	0.035458307
cg17066270	0.695776497	0.756909134	-0.061132637	-4.747964029	5.00E-05	0.035466516
cg06034194	0.738272644	0.668352553	0.069920091	4.747489787	5.01E-05	0.035482315
cg10877241	0.802704956	0.72398813	0.078716826	4.73746567	5.15E-05	0.035738748
cg12318285	0.638662495	0.717209333	-0.078546838	-4.737274961	5.15E-05	0.035738748
cg04491630	0.655320489	0.731835285	-0.076514796	-4.736825799	5.16E-05	0.035738748
cg20751048	0.489045753	0.426780813	0.06226494	4.73472573	5.19E-05	0.035771267
cg03106056	0.394630558	0.469840971	-0.075210413	-4.732137936	5.23E-05	0.03589287
cg05005217	0.633772564	0.713451386	-0.079678822	-4.731087279	5.24E-05	0.03592219
cg04422391	0.74293827	0.80832841	-0.06539014	-4.728298295	5.28E-05	0.03592219

cg06921368	0.449749497	0.373199135	0.076550362	4.728044748	5.29E-05	0.03592219
cg13853823	0.564426974	0.501008292	0.063418682	4.727763036	5.29E-05	0.03592219
cg06074210	0.60795531	0.690713617	-0.082758308	-4.727606118	5.29E-05	0.03592219
cg18442002	0.271484547	0.196535588	0.074948959	4.7264085	5.31E-05	0.035930868
cg17674892	0.624187261	0.690408286	-0.066221025	-4.722101685	5.37E-05	0.035985031
cg11433098	0.374527775	0.437098574	-0.062570799	-4.71877018	5.42E-05	0.035985031
cg09256096	0.392134325	0.322337941	0.069796385	4.71730712	5.45E-05	0.035985031
cg05611670	0.573636663	0.504262721	0.069373941	4.716940055	5.45E-05	0.035985031
cg16902598	0.719783586	0.785705516	-0.065921929	-4.716142327	5.46E-05	0.036014908
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cg23015343	0.712206104	0.646420313	0.065785791	4.71426789	5.49E-05	0.036061816
cg04985582	0.54278796	0.732154746	-0.189366786	-4.70685037	5.61E-05	0.036443957
cg23017345	0.355799082	0.261944096	0.093854986	4.702340633	5.68E-05	0.036569931
cg03471150	0.557526756	0.484071296	0.07345546	4.698834679	5.73E-05	0.036572648
cg05170020	0.959465387	0.842234551	0.117230836	4.697731651	5.75E-05	0.036572648
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cg12512771	0.232818932	0.163940008	0.068878924	4.68629648	5.94E-05	0.036681334

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cg13713574	0.369670921	0.29053033	0.079140591	4.672712174	6.17E-05	0.036984523
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cg16769027	0.667194306	0.744073488	-0.076879181	-4.598949372	7.57E-05	0.038500038
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cg02770086	0.770851467	0.704874412	0.065977054	4.587293952	7.82E-05	0.038627435
cg11282705	0.548523095	0.488423515	0.060099579	4.584218846	7.89E-05	0.038794692
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cg26514511	0.88338455	0.823004662	0.060379888	4.580020781	7.98E-05	0.038817703
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cg11735270	0.823824426	0.706957826	0.1168666	4.572113196	8.16E-05	0.038970814
cg19547155	0.473647731	0.567092017	-0.093444286	-4.571990584	8.16E-05	0.038970814
cg06726529	0.359142518	0.279323792	0.079818725	4.570728845	8.19E-05	0.039018865
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cg16031179	0.508498708	0.416694978	0.091803731	4.537362715	8.98E-05	0.040058285
cg02290163	0.533401029	0.418737575	0.114663453	4.536854775	9.00E-05	0.040076888
cg17425818	0.347107758	0.447865419	-0.100757661	-4.53146709	9.13E-05	0.040373989
cg01322142	0.50729455	0.568585539	-0.061290989	-4.529972906	9.17E-05	0.040435314
cg12139056	0.230404143	0.165516129	0.064888014	4.529276736	9.19E-05	0.040476898
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cg02763933	0.568095217	0.467486647	0.10060857	4.525592877	9.28E-05	0.040559294
cg01470340	0.51587868	0.439267581	0.076611098	4.524389452	9.31E-05	0.040595914
cg21994822	0.660695112	0.593211961	0.067483151	4.523938501	9.33E-05	0.040595914
cg05442797	0.548913419	0.438556824	0.110356594	4.523553352	9.34E-05	0.040595914
cg18893596	0.474398741	0.390462941	0.0839358	4.523243636	9.34E-05	0.040595914
cg06518107	0.908161825	0.846944389	0.061217437	4.521274775	9.39E-05	0.040604124
cg15148329	0.363925087	0.286923086	0.077002002	4.520763518	9.41E-05	0.040604124
cg12591662	0.526717321	0.600235179	-0.073517858	-4.519820246	9.43E-05	0.040604124

cg04977784	0.404933736	0.318666426	0.08626731	4.517681304	9.49E-05	0.040642889
cg08833031	0.606190715	0.491161843	0.115028871	4.51377072	9.59E-05	0.040732963
cg27206232	0.636017039	0.556322622	0.079694416	4.512782677	9.62E-05	0.040791658
cg15975806	0.592287211	0.511023235	0.081263977	4.511463964	9.65E-05	0.040791658
cg00402381	0.722979735	0.626856423	0.096123312	4.511389476	9.66E-05	0.040791658
cg16499834	0.607003301	0.668971962	-0.061968661	-4.511328057	9.66E-05	0.040791658
cg17432627	0.493165498	0.4253805	0.067784999	4.505381456	9.82E-05	0.041014689
cg09067305	0.240254898	0.170771249	0.069483649	4.505103686	9.83E-05	0.041018238
cg14120161	0.433366258	0.328109779	0.10525648	4.503658239	9.87E-05	0.041075847
cg02153138	0.417858928	0.320270356	0.097588572	4.503041206	9.88E-05	0.041076329
cg18041640	0.581414861	0.660461384	-0.079046523	-4.502269343	9.90E-05	0.04108719
cg08456420	0.661855667	0.59646603	0.065389637	4.500593747	9.95E-05	0.04108719
cg23756272	0.534368637	0.464582591	0.069786046	4.499952245	9.97E-05	0.04108719
cg15424377	0.91448148	0.708526444	0.205955036	4.498781538	1.00E-04	0.04108719
cg13935558	0.63543892	0.527328109	0.108110811	4.495110948	0.000101023	0.04108719
cg09122223	0.665700624	0.59661752	0.069083104	4.494915273	0.000101078	0.04108719
cg22440848	0.491266544	0.403825377	0.087441167	4.494781844	0.000101115	0.04108719

cg12980561	0.560957099	0.473468782	0.087488318	4.49399776	0.000101335	0.04108719
cg02766403	0.642409602	0.55580127	0.086608332	4.493801178	0.000101391	0.04108719
cg22018086	0.33134303	0.266060246	0.065282784	4.491900796	0.000101926	0.041156865
cg01392627	0.666894316	0.590363011	0.076531305	4.490530892	0.000102315	0.04119462
cg22559013	0.370852054	0.436084158	-0.065232104	-4.489340411	0.000102653	0.041231958
cg21789181	0.364945687	0.286665274	0.078280412	4.487463067	0.000103189	0.041269431
cg24635112	0.685041318	0.745613842	-0.060572525	-4.48706331	0.000103303	0.04127137
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cg03834767	0.390900912	0.299958336	0.090942576	4.486930975	0.000103341	0.04127137
cg14551975	0.525677146	0.438633803	0.087043343	4.485526324	0.000103745	0.041384083
cg27591957	0.15673875	0.084819218	0.071919532	4.485412003	0.000103778	0.041384083
cg08072584	0.345096804	0.257981466	0.087115338	4.479067646	0.00010562	0.041726091
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cg00898064	0.702850685	0.630778513	0.072072172	4.475045131	0.000106805	0.041855569
cg03607312	0.44131779	0.355943197	0.085374593	4.473091735	0.000107385	0.041855569
cg02750743	0.624228827	0.552109936	0.072118891	4.472786504	0.000107476	0.041855569
cg22138096	0.51251612	0.43398993	0.078526191	4.472757741	0.000107484	0.041855569

cg18315870	0.329381898	0.423425768	-0.094043871	-4.469832952	0.000108359	0.041929398
cg09837943	0.728576296	0.790265591	-0.061689296	-4.469551789	0.000108444	0.041929398
cg21865293	0.645335677	0.712619314	-0.067283637	-4.469404277	0.000108488	0.041929398
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cg03052004	0.583005181	0.494659271	0.088345911	4.466117005	0.000109482	0.041945878
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cg26515213	0.751567973	0.684580755	0.066987218	4.464078043	0.000110102	0.041954554
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cg03687650	0.83487682	0.771031497	0.063845323	4.457910411	0.000112001	0.042137221
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cg11459492	0.553564157	0.437071358	0.116492799	4.451696253	0.000113946	0.042261637
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cg12865025	0.310468111	0.67158564	-0.361117528	-4.437787834	0.000118423	0.042799589
cg22437405	0.505046896	0.414179447	0.090867448	4.436599365	0.000118814	0.042860571
cg26072254	0.819192759	0.725767237	0.093425522	4.435493706	0.000119178	0.042881435
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cg13159505	0.517915414	0.436740794	0.08117462	4.310091132	0.000168575	0.046061365
cg24647919	0.586453472	0.519586996	0.066866476	4.310086761	0.000168578	0.046061365
cg20432732	0.116617896	0.056523898	0.060093998	4.304417104	0.000171236	0.046393199
cg12864721	0.221200043	0.155392648	0.065807395	4.303533576	0.000171654	0.046431479
cg15133448	0.237705884	0.174690743	0.063015142	4.302216808	0.000172279	0.046463483
cg07299291	0.480241703	0.396107544	0.084134159	4.301441386	0.000172648	0.046510832
cg17948174	0.569295981	0.464569424	0.104726557	4.299363293	0.00017364	0.0466084
cg08519290	0.622323751	0.511707648	0.110616103	4.298376272	0.000174114	0.0466084
cg16172955	0.517932836	0.430773497	0.08715934	4.296971669	0.00017479	0.046694957
cg25725533	0.680866393	0.600476457	0.080389936	4.296767712	0.000174888	0.046694957
cg23991209	0.375476324	0.454267108	-0.078790784	-4.293992675	0.000176232	0.046720197
cg23532927	0.431547706	0.357921366	0.07362634	4.292967897	0.000176731	0.046720197
cg10117369	0.371113737	0.432617156	-0.061503418	-4.292147273	0.000177131	0.046720197
cg06500253	0.502639888	0.571147694	-0.068507806	-4.292004548	0.000177201	0.046720197
cg06443867	0.705422008	0.772512135	-0.067090127	-4.291362197	0.000177515	0.046720197
cg20190772	0.555298197	0.483191074	0.072107123	4.29089671	0.000177744	0.046720197

cg25557698	0.507483299	0.436077642	0.071405657	4.289206238	0.000178574	0.046720197
cg02438477	0.49723215	0.559810143	-0.062577993	-4.288949921	0.0001787	0.046720197
cg27236490	0.37899195	0.296415799	0.082576151	4.28863624	0.000178855	0.046720197
cg19820851	0.248898273	0.187218672	0.0616796	4.288120658	0.00017911	0.046720197
cg04087084	0.329009825	0.390875591	-0.061865767	-4.288101962	0.000179119	0.046720197
cg19027611	0.625391882	0.554566283	0.070825599	4.287210854	0.00017956	0.046720197
cg15296299	0.520909023	0.442071527	0.078837496	4.287087608	0.000179621	0.046720197
cg26440059	0.356653314	0.622416722	-0.265763408	-4.287047888	0.00017964	0.046720197
cg26413942	0.426912578	0.360673397	0.066239182	4.286860725	0.000179733	0.046720197
cg08774778	0.557384978	0.490497376	0.066887602	4.286786353	0.00017977	0.046720197
cg12979844	0.345591849	0.276039682	0.069552167	4.286760696	0.000179783	0.046720197
cg10535725	0.467840592	0.387055987	0.080784606	4.286147287	0.000180087	0.046720197
cg20300412	0.540108132	0.603265459	-0.063157327	-4.285158011	0.000180579	0.046720197
cg02182504	0.468816202	0.404289797	0.064526405	4.283552502	0.00018138	0.04672754
cg02818077	0.259872028	0.191068135	0.068803893	4.28303945	0.000181637	0.046752262
cg11253978	0.669527115	0.735345589	-0.065818474	-4.282570072	0.000181872	0.046774562
cg19389293	0.396800139	0.334892613	0.061907527	4.282011077	0.000182153	0.04679561

cg07340241	0.61289853	0.54413855	0.06875998	4.28167236	0.000182323	0.046797995
cg03637691	0.185811181	0.12110226	0.064708921	4.280545586	0.00018289	0.046825811
cg00901982	0.435545713	0.351188579	0.084357134	4.280437603	0.000182945	0.046825811
cg22347523	0.449803723	0.351857293	0.09794643	4.280043534	0.000183144	0.046833776
cg09877334	0.785663602	0.717702152	0.067961449	4.279422095	0.000183458	0.046859896
cg26187205	0.201431326	0.138992523	0.062438803	4.278032766	0.000184162	0.046863679
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cg05369308	0.218434711	0.154518078	0.063916634	4.276446117	0.000184969	0.046874663
cg13865402	0.719370982	0.643684814	0.075686168	4.276130036	0.00018513	0.046874663
cg24405567	0.487224725	0.38880957	0.098415154	4.275823524	0.000185287	0.046874663
cg03812891	0.767103866	0.612079015	0.155024851	4.274219894	0.000186108	0.046935533
cg12509712	0.805259199	0.713851365	0.091407834	4.274115516	0.000186161	0.046935533
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cg06829969	0.606096167	0.51703134	0.089064827	4.272012449	0.000187244	0.046983076

cg20737909	0.581789638	0.64638161	-0.064591973	-4.270641524	0.000187952	0.047003499
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cg16056511	0.420066626	0.334180605	0.085886021	4.268724764	0.000188948	0.047077854
cg11921248	0.567206968	0.491438242	0.075768726	4.268598237	0.000189014	0.047077854
cg07520477	0.556555873	0.484937024	0.071618849	4.268504477	0.000189063	0.047077854
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cg11531229	0.702843554	0.615702196	0.087141359	4.263112839	0.000191893	0.047356613
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cg24103651	0.323490234	0.25510189	0.068388344	4.26249922	0.000192218	0.047361515
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cg25835376	0.618923477	0.529025699	0.089897778	4.257141434	0.000195076	0.047505245
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cg06738887	0.375830742	0.298587536	0.077243206	4.185711348	0.00023744	0.049817792
cg07142830	0.339707813	0.242505248	0.097202565	4.185570931	0.000237532	0.049817792
cg17627654	0.205005384	0.137755708	0.067249676	4.184771739	0.000238054	0.049817792
cg14112601	0.279573234	0.218457285	0.061115949	4.184134051	0.000238472	0.049817792
cg22244330	0.499590825	0.815479877	-0.315889052	-4.183374724	0.00023897	0.049817792
cg13850368	0.454059949	0.39095812	0.063101829	4.183368865	0.000238973	0.049817792
cg04320984	0.669692029	0.607915039	0.06177699	4.181178534	0.000240416	0.049873646
cg11492661	0.589003175	0.496597591	0.092405584	4.181152327	0.000240433	0.049873646
cg20746451	0.734283258	0.870325215	-0.136041957	-4.180952642	0.000240565	0.049873646
cg19993258	0.515251432	0.58338539	-0.068133958	-4.180872422	0.000240618	0.049873646
cg02466830	0.281333363	0.200923621	0.080409742	4.179901372	0.000241261	0.049873646
cg03591396	0.361141434	0.274606316	0.086535119	4.179745889	0.000241364	0.049873646
cg04280772	0.665465816	0.741329753	-0.075863937	-4.17779943	0.000242658	0.049904121
cg15969804	0.732067532	0.669245876	0.062821657	4.177693145	0.000242729	0.049904121

cg03546619	0.266160627	0.187851313	0.078309314	4.177180923	0.00024307	0.049904121
cg01211390	0.688210754	0.75831754	-0.070106787	-4.177100475	0.000243124	0.049904121
cg05851537	0.319260142	0.247414489	0.071845653	4.177053015	0.000243156	0.049904121
cg08059358	0.493748216	0.403664321	0.090083895	4.176719349	0.000243379	0.049917555
cg26160218	0.663223438	0.582592688	0.08063075	4.175688744	0.000244068	0.049917555
cg26845594	0.257279732	0.19349813	0.063781602	4.175121215	0.000244449	0.049917555

Supplementary Table 2 Differential methylation genes between responders and nonresponders

Probe ID	Responders	Nonresponders	Delta beta	<i>t</i> -vvalue	<i>p</i> -value	<i>q</i> -value	Gene name
cg07157614	0.768714372	0.702062808	0.066651564	4.365392152	0.000144694	0.044574913	ZNF804B
cg09877334	0.785663602	0.717702152	0.067961449	4.279422095	0.000183458	0.046859896	ZNF710
cg01185080	0.662909883	0.587548573	0.07536131	4.69106459	5.86E-05	0.036681334	ZNF710
cg26413942	0.426912578	0.360673397	0.066239182	4.286860725	0.000179733	0.046720197	ZNF608
cg25725533	0.680866393	0.600476457	0.080389936	4.296767712	0.000174888	0.046694957	ZNF516
cg17830740	0.448645945	0.384461328	0.064184617	4.234485078	0.000207635	0.047997239	ZNF395
cg11886620	0.748916282	0.668479556	0.080436726	4.254125113	0.000196704	0.047613488	ZNF362

cg04074955	0.771280547	0.689875335	0.081405212	4.189984492	0.000234669	0.049708999	ZDHHC14
cg09732913	0.566875502	0.484466515	0.082408988	5.08449233	1.95E-05	0.027754732	ZBTB46
cg11119767	0.44935236	0.353964322	0.095388038	4.328474525	0.000160234	0.045452496	ZAK
cg02972988	0.607500755	0.540799404	0.066701351	5.426736417	7.52E-06	0.021393789	YPEL4
cg07142830	0.339707813	0.242505248	0.097202565	4.185570931	0.000237532	0.049817792	XYLT1
cg23784996	0.836667654	0.775806725	0.060860929	4.938204106	2.94E-05	0.031255606	XRCC5
cg11273618	0.78630134	0.71234054	0.0739608	5.681557125	3.70E-06	0.018866015	WWTR1
cg21875543	0.614080585	0.533194806	0.080885778	5.104364117	1.85E-05	0.027582663	WWOX
cg18007373	0.830923257	0.759632613	0.071290644	4.366495048	0.000144254	0.044574913	WDR33
cg00128168	0.398919312	0.322159669	0.076759643	4.211555728	0.000221157	0.04869586	VIPR2
cg13604782	0.78894921	0.708901547	0.080047663	5.475798164	6.56E-06	0.020993561	VDAC2
cg05298510	0.632030744	0.56342131	0.068609434	4.266663652	0.000190024	0.047172981	USP10
cg20432732	0.116617896	0.056523898	0.060093998	4.304417104	0.000171236	0.046393199	UBR4
cg22911917	0.764556019	0.700217502	0.064338517	4.821765931	4.07E-05	0.03335331	UBE2G2
cg24207698	0.43271013	0.335991951	0.096718179	4.782583527	4.54E-05	0.034602337	TTC21B
cg25369262	0.535697297	0.46678343	0.068913866	5.029195215	2.28E-05	0.029050707	TSPAN1
cg17352610	0.355395979	0.269927008	0.08546897	5.815127111	2.56E-06	0.01729177	TRPA1

cg23427912	0.643691526	0.546761827	0.096929699	4.247593789	0.000200274	0.047770214	TRIML1
cg13935558	0.63543892	0.527328109	0.108110811	4.495110948	0.000101023	0.04108719	TRIM24
cg27206232	0.636017039	0.556322622	0.079694416	4.512782677	9.62E-05	0.040791658	TPP2
cg16056511	0.420066626	0.334180605	0.085886021	4.268724764	0.000188948	0.047077854	TPMT
cg16764781	0.537189504	0.431197783	0.105991721	4.208430256	0.000223066	0.048839782	TP63
cg00600584	0.536313833	0.421284653	0.115029179	4.245844952	0.000201241	0.047848252	TP63
cg21723486	0.587153511	0.465192755	0.121960756	4.615055701	7.24E-05	0.038004453	TP63
cg02233041	0.515169137	0.406721657	0.108447481	4.214889225	0.000219138	0.0486358	TNIP3
cg06987098	0.483302108	0.390773944	0.092528164	4.247571293	0.000200287	0.047770214	TNFAIP3
cg06328792	0.391718237	0.324716323	0.067001914	4.661046291	6.37E-05	0.037022282	TMEM184B
cg18396403	0.328784112	0.267649237	0.061134876	4.596904775	7.61E-05	0.038528299	TMEM184B
cg26878709	0.615203774	0.551238718	0.063965057	4.611649768	7.31E-05	0.038112952	TMEM136
cg23849592	0.583814122	0.485398672	0.09841545	4.224378841	0.000213491	0.048414864	TM4SF20
cg25938803	0.515493393	0.414174333	0.101319059	4.202542468	0.000226707	0.049140731	THADA
cg15503220	0.573608583	0.453216416	0.120392167	4.66098648	6.37E-05	0.037022282	TET3
cg20128880	0.473906182	0.404589113	0.069317069	4.823404524	4.05E-05	0.033241344	TESC-AS1
cg02750743	0.624228827	0.552109936	0.072118891	4.472786504	0.000107476	0.041855569	TESC

cg09170612	0.293470688	0.185906773	0.107563915	4.256075197	0.00019565	0.047520198	TENM1
cg00187686	0.334238258	0.258915714	0.075322544	4.228283044	0.00021121	0.048249582	TCN1
cg04934499	0.674019307	0.599042672	0.074976635	4.341826881	0.000154432	0.045106965	TCF12
cg12247014	0.681540773	0.61351054	0.068030233	4.208568067	0.000222981	0.048839782	TBC1D8
cg04440686	0.539055568	0.472616997	0.066438571	4.253664808	0.000196953	0.047622403	TBC1D20
cg01844045	0.828377011	0.764134115	0.064242896	4.339274455	0.000155524	0.045106965	TBC1D1
cg03048029	0.503439377	0.401478408	0.101960969	4.210384181	0.00022187	0.048798392	SYNJ1
cg07417146	0.663579281	0.59781967	0.06575961	4.562811473	8.37E-05	0.039240308	SYNGAP1
cg23653411	0.330506106	0.270118281	0.060387825	4.245856798	0.000201235	0.047848252	SYK
cg00622375	0.621221343	0.549437198	0.071784145	5.108912485	1.83E-05	0.027582663	SVIL;MIR938
cg15576517	0.694551259	0.633388957	0.061162302	5.161459427	1.58E-05	0.02667759	STXBP2
cg12237948	0.621367993	0.515752676	0.105615317	4.317729907	0.000165058	0.04581419	STK35
cg08185095	0.550940208	0.445840855	0.105099353	4.311950775	0.000167712	0.045996765	STAU2
cg26277026	0.483103762	0.414035615	0.069068148	4.327766812	0.000160547	0.045452496	ST8SIA1
cg23263600	0.62568812	0.557923557	0.067764563	4.200913018	0.000227724	0.049208821	SSR3
cg11492661	0.589003175	0.496597591	0.092405584	4.181152327	0.000240433	0.049873646	SPIDR
cg15721584	0.487233144	0.377961024	0.10927212	6.453616379	4.42E-07	0.01141032	SOX2OT

cg25802927	0.445449471	0.357665426	0.087784046	5.785176125	2.78E-06	0.017516702	SORT1
cg13752726	0.709515931	0.409573377	0.299942554	4.378888	0.000139394	0.044421607	SOHLH1
cg07796826	0.799910276	0.73014981	0.069760466	5.023708607	2.32E-05	0.029050707	SMYD3
cg06516024	0.245557331	0.160172871	0.085384461	5.875225556	2.16E-06	0.017078495	SMYD3
cg07884459	0.619989582	0.532294802	0.087694779	5.121227892	1.76E-05	0.02737762	SMYD3
cg25740883	0.513388625	0.450645745	0.06274288	4.375926701	0.00014054	0.044526441	SLC8B1
cg21827892	0.804748944	0.735283858	0.069465087	4.761572898	4.81E-05	0.035156882	SLC7A9
cg18582408	0.315644032	0.231179378	0.084464654	5.010909695	2.40E-05	0.029408616	SLC4A7
cg18545449	0.509650991	0.433383761	0.07626723	4.21856383	0.000216934	0.04856565	SLC39A11
cg07220939	0.708155365	0.639173483	0.068981883	4.63264163	6.89E-05	0.037366827	SLC22A12
cg04965641	0.286904165	0.212717134	0.074187031	4.412663332	0.000126957	0.043515534	SLC11A1
cg01448863	0.42175034	0.343820248	0.077930093	4.190070279	0.000234613	0.049708999	SLC10A1
cg12122241	0.512705751	0.431377011	0.08132874	4.327989357	0.000160448	0.045452496	SIRPA
cg17148552	0.731096262	0.670587332	0.06050893	6.143781941	1.03E-06	0.013616594	SIL1
cg12979844	0.345591849	0.276039682	0.069552167	4.286760696	0.000179783	0.046720197	SIAH3
cg09216216	0.488179893	0.404825868	0.083354025	4.186796278	0.000236734	0.049762694	SHISA5
cg24927174	0.85185049	0.781640719	0.07020977	4.416580475	0.000125587	0.043346698	SHC1

cg17627654	0.205005384	0.137755708	0.067249676	4.184771739	0.000238054	0.049817792	SHANK2
cg26421810	0.238010784	0.174815632	0.063195152	4.188378892	0.000235706	0.049732829	SH3GLB2
cg06346266	0.255714136	0.180439665	0.075274471	4.714402191	5.49E-05	0.036061816	SCN1A;LOC101929680
cg13159505	0.517915414	0.436740794	0.08117462	4.310091132	0.000168575	0.046061365	RPTOR
cg23063236	0.412389823	0.34932312	0.063066704	4.887434809	3.39E-05	0.031701229	ROBO1
cg15318916	0.416499257	0.350157338	0.066341919	4.839907875	3.87E-05	0.032921992	RNF225
cg16031179	0.508498708	0.416694978	0.091803731	4.537362715	8.98E-05	0.040058285	RNF217
cg01316909	0.50782049	0.438074769	0.06974572	4.214852422	0.00021916	0.0486358	RNF19A
cg10060399	0.448131779	0.385798883	0.062332896	4.63442874	6.86E-05	0.037366827	RHBDL1
cg21160842	0.511001645	0.426338496	0.084663149	5.032857713	2.26E-05	0.029050707	RCN1
cg16639876	0.747075516	0.683273113	0.063802403	6.13752424	1.05E-06	0.013616594	RASGRF1
cg04320984	0.669692029	0.607915039	0.06177699	4.181178534	0.000240416	0.049873646	RACGAP1
cg14693269	0.313135564	0.232371131	0.080764433	4.314138961	0.000166703	0.045936788	RAB8B
cg09154256	0.489474686	0.418235098	0.071239588	5.390923142	8.31E-06	0.022439813	RAB1A
cg15268405	0.558011202	0.445936734	0.112074468	4.34447004	0.000153308	0.045106965	RAB10
cg06692384	0.757175619	0.637945119	0.1192305	4.897666581	3.29E-05	0.031499288	RAB10
cg15899840	0.626658165	0.537811509	0.088846655	4.203880739	0.000225874	0.049087056	PTPRG

cg01548680	0.372165468	0.300477735	0.071687733	5.204025949	1.40E-05	0.025958743	PTPRE
cg02153138	0.417858928	0.320270356	0.097588572	4.503041206	9.88E-05	0.041076329	PRRT4
cg22018086	0.33134303	0.266060246	0.065282784	4.491900796	0.000101926	0.041156865	PRR5;PRR5-ARHGAP 8
cg01193555	0.508755684	0.440686786	0.068068898	5.213621851	1.36E-05	0.025702033	PROM1
cg21271945	0.420455453	0.355622424	0.064833029	4.635091461	6.85E-05	0.037366827	PRKCZ
cg23924526	0.502999177	0.405780055	0.097219122	5.607798509	4.54E-06	0.019849205	PRKCE
cg26514511	0.88338455	0.823004662	0.060379888	4.580020781	7.98E-05	0.038817703	PRKAR2B
cg11282705	0.548523095	0.488423515	0.060099579	4.584218846	7.89E-05	0.038794692	PRKAG2
cg13865402	0.719370982	0.643684814	0.075686168	4.276130036	0.00018513	0.046874663	PPP1R12A
cg22784187	0.578403249	0.51360987	0.064793379	6.173323139	9.51E-07	0.013616594	PON3
cg08803535	0.727066905	0.663680702	0.063386204	4.644020059	6.68E-05	0.037287331	POC1B
cg11846968	0.566925669	0.499981127	0.066944542	4.218113879	0.000217203	0.04857671	PLUNC
cg00042969	0.729838614	0.639914181	0.089924433	5.070839148	2.03E-05	0.028119713	PLD3
cg02742774	0.482294796	0.37870862	0.103586176	4.475567022	0.00010665	0.041855569	PLA2G4A
cg06032862	0.519407884	0.424669817	0.094738066	4.223698119	0.000213891	0.04846588	PHLDB2
cg05422993	0.739084282	0.654521995	0.084562286	4.833859472	3.94E-05	0.033004507	PGLYRP1

cg06829969	0.606096167	0.51703134	0.089064827	4.272012449	0.000187244	0.046983076	PGD
cg14798160	0.490068694	0.428063884	0.06200481	4.211530394	0.000221172	0.04869586	PF4V1
cg10259872	0.568786761	0.506563163	0.062223598	4.349098991	0.00015136	0.045082443	PDIA5
cg12980561	0.560957099	0.473468782	0.087488318	4.49399776	0.000101335	0.04108719	PDE6A
cg18345115	0.141385047	0.079093616	0.062291431	4.340616015	0.000154949	0.045106965	PDE4A
cg21227325	0.677740067	0.591571015	0.086169053	4.824212388	4.04E-05	0.033223825	PCSK5
cg10438048	0.198786663	0.129726469	0.069060194	4.189510223	0.000234975	0.049725449	PCAT29
cg12702794	0.664777635	0.599551549	0.065226085	4.54192727	8.87E-05	0.039872797	PATL1
cg20653106	0.621808483	0.536259061	0.085549422	4.371483657	0.000142278	0.044574913	P2RY12;MED12L
cg03687650	0.83487682	0.771031497	0.063845323	4.457910411	0.000112001	0.042137221	OSBPL5
cg13119003	0.410336811	0.304560399	0.105776412	4.867230771	3.59E-05	0.032245543	OR6P1
cg25541968	0.413702888	0.335940064	0.077762824	4.912583564	3.16E-05	0.031459878	OR5P3
cg23584176	0.730242895	0.564460385	0.165782511	4.850331038	3.76E-05	0.032745303	OR12D2
cg23150800	0.384858326	0.270647216	0.11421111	5.624587619	4.34E-06	0.019561127	OPTN
cg19030331	0.350975204	0.283349981	0.067625223	4.789090236	4.46E-05	0.034427377	OLFML1
cg19820851	0.248898273	0.187218672	0.0616796	4.288120658	0.00017911	0.046720197	NUP98
cg04924314	0.218723238	0.144581007	0.074142231	4.379389072	0.000139201	0.044412246	NUP93

cg18009484	0.628178093	0.493758324	0.134419769	6.543337728	3.46E-07	0.01141032	NTM
cg18442002	0.271484547	0.196535588	0.074948959	4.7264085	5.31E-05	0.035930868	NOTCH2NL;NBPF20; NBPF9
cg08647039	0.41406841	0.348664903	0.065403507	5.874735098	2.17E-06	0.017078495	NFIX
cg04367503	0.475966533	0.397834985	0.078131549	5.602951312	4.61E-06	0.019849205	NFIX
cg11127915	0.250822883	0.166812269	0.084010614	7.627769392	1.94E-08	0.005436696	NFIX
cg17432627	0.493165498	0.4253805	0.067784999	4.505381456	9.82E-05	0.041014689	NCRNA00114
cg17371585	0.84281607	0.768347541	0.07446853	4.980914222	2.61E-05	0.029879665	NCAPG2
cg14551975	0.525677146	0.438633803	0.087043343	4.485526324	0.000103745	0.041384083	MYO1E
cg01535726	0.398356313	0.329365059	0.068991254	4.229477901	0.000210516	0.048183007	MSRA
cg26293423	0.641669221	0.550313916	0.091355305	4.433724672	0.000119764	0.042963122	MRPS27
cg22086510	0.444064313	0.343738554	0.100325759	5.950936271	1.76E-06	0.016982727	MPP4
cg27236490	0.37899195	0.296415799	0.082576151	4.28863624	0.000178855	0.046720197	MPEG1
cg15210829	0.416912544	0.331227175	0.085685369	5.203680174	1.40E-05	0.025958743	MNT
cg03331229	0.52840518	0.446849572	0.081555608	4.874535278	3.51E-05	0.032150462	MMP13
cg20751048	0.489045753	0.426780813	0.06226494	4.73472573	5.19E-05	0.035771267	MIR548W
cg23841297	0.567068894	0.48643705	0.080631845	5.228244175	1.31E-05	0.025335589	MGC32805

cg20918270	0.667684735	0.580992962	0.086691772	4.570406465	8.20E-05	0.039031671	METTL8
cg09294084	0.35804571	0.295466256	0.062579453	4.374073914	0.000141262	0.044526441	MCF2L
cg13580248	0.430650505	0.367329622	0.063320882	4.194993064	0.000231461	0.049528764	MAFG
cg08456420	0.661855667	0.59646603	0.065389637	4.500593747	9.95E-05	0.04108719	MACF1
cg03591396	0.361141434	0.274606316	0.086535119	4.179745889	0.000241364	0.049873646	LYN
cg06034194	0.738272644	0.668352553	0.069920091	4.747489787	5.01E-05	0.035482315	LURAP1L-AS1;LURAP 1L
cg14120161	0.433366258	0.328109779	0.10525648	4.503658239	9.87E-05	0.041075847	LPP
cg16176984	0.544744895	0.43650769	0.108237205	4.429796469	0.000121074	0.043014857	LOXL1-AS1
cg20847110	0.456917854	0.382756658	0.074161195	4.231026816	0.000209621	0.048082967	LOC401127
cg22138096	0.51251612	0.43398993	0.078526191	4.472757741	0.000107484	0.041855569	LOC285954
cg06921368	0.449749497	0.373199135	0.076550362	4.728044748	5.29E-05	0.03592219	LOC146880;MIR6080
cg12097883	0.368642563	0.298702328	0.069940235	4.599442589	7.56E-05	0.038500038	LOC146880
cg04977784	0.404933736	0.318666426	0.08626731	4.517681304	9.49E-05	0.040642889	LOC102467080
cg25557698	0.507483299	0.436077642	0.071405657	4.289206238	0.000178574	0.046720197	LOC101929297
cg14576521	0.602565515	0.512627279	0.089938235	4.45395525	0.000113235	0.042261637	LOC101928227
cg08059358	0.493748216	0.403664321	0.090083895	4.176719349	0.000243379	0.049917555	LOC101927865

cg03812891	0.767103866	0.612079015	0.155024851	4.274219894	0.000186108	0.046935533	LOC101927502
cg24186951	0.682153031	0.52570523	0.156447801	4.24301451	0.000202816	0.047912203	LOC101927285
cg25240753	0.651949185	0.59161649	0.060332695	5.760074738	2.98E-06	0.017710733	LOC101927153
cg16794869	0.44464336	0.371056384	0.073586976	4.243216096	0.000202703	0.047912203	LOC100288798
cg21512560	0.45093196	0.343161252	0.107770708	4.261806114	0.000192585	0.047401957	LOC100132735
cg15200801	0.569166586	0.498550027	0.070616559	4.896560436	3.30E-05	0.031536901	LMTK3
cg19023851	0.665603793	0.594651292	0.0709525	5.20586098	1.39E-05	0.025922599	LINC01121
cg20264482	0.578882579	0.51524524	0.063637339	4.252085273	0.000197812	0.047670405	LINC00968
cg03890215	0.698839376	0.62602109	0.072818286	4.675992548	6.11E-05	0.036860566	LINC00907
cg03780426	0.823602091	0.744463961	0.07913813	4.389475703	0.000135371	0.044178404	LINC00673
cg22450120	0.466336159	0.372289697	0.094046462	4.367088976	0.000144017	0.044574913	LINC00423
cg03637691	0.185811181	0.12110226	0.064708921	4.280545586	0.00018289	0.046825811	LDLR
cg18556420	0.728257614	0.654451954	0.07380566	4.400393473	0.000131342	0.043836938	LARP4B
cg08836481	0.572250277	0.491292956	0.080957321	4.24438757	0.00020205	0.047912203	LARP4B
cg08058191	0.379322592	0.297560876	0.081761715	4.540047971	8.92E-05	0.03990693	KRT17
cg23017345	0.355799082	0.261944096	0.093854986	4.702340633	5.68E-05	0.036569931	KMO
cg27389201	0.575040935	0.509239723	0.065801212	6.188549458	9.12E-07	0.013616594	KLF5

cg04339360	0.548009689	0.444354634	0.103655054	4.486967314	0.000103331	0.04127137	KLF5
cg26072254	0.819192759	0.725767237	0.093425522	4.435493706	0.000119178	0.042881435	KIF26B
cg11912591	0.763313989	0.649600205	0.113713784	4.207326207	0.000223744	0.048888331	KIF26B
cg18610541	0.674739352	0.574823467	0.099915885	4.7908998	4.44E-05	0.034427377	KIAA1279
cg20190772	0.555298197	0.483191074	0.072107123	4.29089671	0.000177744	0.046720197	KIAA0146
cg02182504	0.468816202	0.404289797	0.064526405	4.283552502	0.00018138	0.04672754	KANSL1
cg04915618	0.646100339	0.551991702	0.094108637	4.194919927	0.000231507	0.049528764	KALRN
cg13098738	0.82619756	0.757959409	0.068238151	5.336597629	9.67E-06	0.023201788	JARID2
cg27003832	0.479330999	0.399481579	0.07984942	4.87646303	3.49E-05	0.032084618	JARID2
cg10586870	0.424164805	0.363981244	0.060183562	4.198521708	0.000229226	0.0493806	IQGAP2
cg26479002	0.798138732	0.738053045	0.060085687	4.452602362	0.000113661	0.042261637	IQCK
cg03471150	0.557526756	0.484071296	0.07345546	4.698834679	5.73E-05	0.036572648	IPO9
cg18376497	0.293769575	0.227240291	0.066529284	4.211948448	0.000220918	0.04869586	INPP4B
cg25608645	0.664074538	0.551554335	0.112520202	4.92386516	3.06E-05	0.031459878	IMPAD1
cg12593397	0.817117706	0.756308525	0.060809181	4.425190073	0.000122628	0.04318462	IL1RL1
cg04242580	0.443345685	0.336244615	0.10710107	5.118640298	1.78E-05	0.027410076	IL1RL1
cg09122223	0.665700624	0.59661752	0.069083104	4.494915273	0.000101078	0.04108719	IL18

cg18126312	0.609226833	0.544637191	0.064589643	5.011858617	2.39E-05	0.029408616	IGSF10
cg14147489	0.320284856	0.244289885	0.075994971	4.18830514	0.000235754	0.049732829	ICAM2
cg27091787	0.683079564	0.587837397	0.095242166	5.174066903	1.52E-05	0.026445013	HYAL2
cg05442797	0.548913419	0.438556824	0.110356594	4.523553352	9.34E-05	0.040595914	HSPBAP1
cg02225599	0.331578999	0.244079772	0.087499227	5.540282966	5.48E-06	0.020848863	HOXA2
cg11735270	0.823824426	0.706957826	0.1168666	4.572113196	8.16E-05	0.038970814	HADHB
cg20508302	0.765898887	0.655207864	0.110691023	5.223609553	1.33E-05	0.025394737	GSAP
cg13380502	0.281572578	0.218199844	0.063372734	4.251356681	0.000198209	0.04769499	GPR3
cg15133448	0.237705884	0.174690743	0.063015142	4.302216808	0.000172279	0.046463483	GPR120
cg25190513	0.613401016	0.533227858	0.080173158	4.58873833	7.79E-05	0.038627435	GPR109B
cg22851977	0.530318701	0.425456426	0.104862275	4.214959203	0.000219096	0.0486358	GMDS
cg21839974	0.618619308	0.536333822	0.082285486	4.450918148	0.000114192	0.042261637	GLIPR2
cg14112601	0.279573234	0.218457285	0.061115949	4.184134051	0.000238472	0.049817792	GCNT2
cg24382698	0.506754291	0.444360437	0.062393854	4.202408876	0.00022679	0.049141328	GAS7
cg12575270	0.387899833	0.301581381	0.086318452	4.18907894	0.000235253	0.049732829	GALNT7
cg10109327	0.58953293	0.528348046	0.061184884	4.229758398	0.000210354	0.048164033	FRYL
cg19027611	0.625391882	0.554566283	0.070825599	4.287210854	0.00017956	0.046720197	FRYL

cg21253130	0.574583084	0.500012196	0.074570888	4.198416556	0.000229293	0.0493806	FRY
cg07990343	0.629023644	0.547582199	0.081441446	4.614874808	7.24E-05	0.038004453	FPR3
cg14551693	0.438647383	0.347057993	0.09158939	4.644247665	6.67E-05	0.037287331	FPR3
cg15349696	0.498349488	0.432950242	0.065399246	4.238520101	0.000205341	0.047948076	FOXK2
cg15200418	0.532777662	0.44512916	0.087648502	5.294815133	1.09E-05	0.023800455	FOXK1
cg09256096	0.392134325	0.322337941	0.069796385	4.71730712	5.45E-05	0.035985031	FLRT2
cg11285284	0.447496584	0.383969843	0.063526741	4.200712598	0.00022785	0.049210596	FLOT1
cg06518107	0.908161825	0.846944389	0.061217437	4.521274775	9.39E-05	0.040604124	FGF7;FAM227B
cg16248511	0.350816044	0.278769286	0.072046759	4.883234438	3.43E-05	0.031820936	FARS2
cg15296299	0.520909023	0.442071527	0.078837496	4.287087608	0.000179621	0.046720197	FARS2
cg20283107	0.584377628	0.519266679	0.065110949	6.267030094	7.36E-07	0.013200514	FAM91A1
cg04304121	0.403331265	0.3320496	0.071281664	4.663729828	6.32E-05	0.037022282	FAM179A
cg04654716	0.626611569	0.565071724	0.061539846	4.226965104	0.000211977	0.04829626	FAM169A
cg15113743	0.486160468	0.424166451	0.061994017	4.380891206	0.000138624	0.04440583	FAH
cg13182756	0.705466128	0.640164712	0.065301416	4.59280013	7.70E-05	0.038535258	EYA3
cg26039479	0.747363444	0.676556246	0.070807198	4.578193035	8.02E-05	0.03891997	ESCO1
cg17757514	0.490814849	0.405271242	0.085543607	4.227844958	0.000211464	0.048262602	ERI1

cg13850368	0.454059949	0.39095812	0.063101829	4.183368865	0.000238973	0.049817792	ELN
cg21875980	0.536892677	0.422538383	0.114354294	4.389458898	0.000135377	0.044178404	EGLN1
cg05876564	0.38752534	0.286825503	0.100699837	5.034644023	2.25E-05	0.029050707	EFNB2
cg22480875	0.753845938	0.612818993	0.141026946	4.235619081	0.000206988	0.047993388	E2F7
cg07754887	0.699257863	0.635302829	0.063955034	4.394454388	0.000133519	0.044105359	DYNC1I1
cg07520477	0.556555873	0.484937024	0.071618849	4.268504477	0.000189063	0.047077854	DUSP3
cg10213211	0.591366468	0.520586166	0.070780302	4.328417422	0.000160259	0.045452496	DNAJC10
cg21566106	0.42989983	0.325730113	0.104169717	4.631174276	6.92E-05	0.037366827	DLGAP1
cg06859749	0.406581555	0.334179282	0.072402272	4.193420448	0.000232463	0.049594211	DIXDC1
cg11258813	0.315263374	0.228841026	0.086422348	5.646925802	4.08E-06	0.018891426	DDHD1
cg26513689	0.306258593	0.230903936	0.075354657	5.104669788	1.85E-05	0.027582663	DAB1
cg09842038	0.5639285	0.488389737	0.075538763	4.941801399	2.91E-05	0.031123959	CYS1
cg20310171	0.479751513	0.348500484	0.13125103	4.857863415	3.68E-05	0.032442547	CWC27
cg27405731	0.516643613	0.446335338	0.070308274	4.661014153	6.37E-05	0.037022282	CUX1
cg05226335	0.58866583	0.470483861	0.118181969	4.417259212	0.000125351	0.043322217	CTTN
cg00986185	0.419244191	0.336735434	0.082508756	4.333833092	0.00015788	0.04535153	CTSH
cg19210276	0.378526117	0.28211149	0.096414628	4.272643672	0.000186918	0.046983076	CTNND1

cg24993990	0.627736512	0.56144472	0.066291792	5.332149868	9.79E-06	0.023201788	CSRNP3
cg11858213	0.580027705	0.506626909	0.073400797	4.364950277	0.000144871	0.044574913	CRTAP
cg24905039	0.857168376	0.78483368	0.072334696	5.599679658	4.65E-06	0.019894252	CRIM1
cg13832670	0.301262677	0.230515469	0.070747208	4.234628492	0.000207553	0.047997239	CREB3L2
cg26515213	0.751567973	0.684580755	0.066987218	4.464078043	0.000110102	0.041954554	CRADD
cg10324735	0.289971836	0.215911922	0.074059914	4.450689593	0.000114265	0.042261637	CPQ
cg16172955	0.517932836	0.430773497	0.08715934	4.296971669	0.00017479	0.046694957	COPS3
cg01881664	0.519067258	0.420755932	0.098311326	4.242960176	0.000202846	0.047912203	COPS3
cg21871330	0.862702141	0.802358298	0.060343843	4.794449889	4.39E-05	0.034427377	COL23A1
cg06515418	0.618339372	0.547782299	0.070557073	4.405977602	0.000129328	0.043575916	COL23A1
cg08862479	0.73321586	0.661723712	0.071492149	5.028207882	2.29E-05	0.029050707	COL23A1
cg01561304	0.45186271	0.352593889	0.099268822	4.230625901	0.000209852	0.048109749	COL23A1
cg17429282	0.724629844	0.61445634	0.110173504	4.903255949	3.24E-05	0.031490764	COL23A1
cg03607312	0.44131779	0.355943197	0.085374593	4.473091735	0.000107385	0.041855569	COG5
cg11531229	0.702843554	0.615702196	0.087141359	4.263112839	0.000191893	0.047356613	CMSS1
cg27489373	0.448348446	0.369326234	0.079022212	4.637032253	6.81E-05	0.037366827	CLCN7
cg11921248	0.567206968	0.491438242	0.075768726	4.268598237	0.000189014	0.047077854	CIT

cg20198642	0.615852703	0.540011347	0.075841357	4.907354882	3.21E-05	0.031490764	CELA2A
cg07340241	0.61289853	0.54413855	0.06875998	4.28167236	0.000182323	0.046797995	CDR2
cg24425727	0.356804243	0.269647989	0.087156254	4.895335762	3.32E-05	0.031577483	CDKN1A
cg03834767	0.390900912	0.299958336	0.090942576	4.486930975	0.000103341	0.04127137	CDK14
cg04422903	0.36907512	0.308001381	0.061073739	4.885758098	3.40E-05	0.031711523	CCDC88B
cg02466078	0.758376649	0.691578846	0.066797803	4.326326137	0.000161187	0.045452496	CCDC88A
cg11827271	0.339318908	0.275236124	0.064082785	4.64261411	6.71E-05	0.037290514	CCAT1
cg13853823	0.564426974	0.501008292	0.063418682	4.727763036	5.29E-05	0.03592219	CBL
cg17465588	0.508371528	0.406756647	0.101614881	4.190135816	0.000234571	0.049708999	CASC8
cg19627006	0.311314696	0.24611741	0.065197286	4.386379442	0.000136535	0.044267494	CAPG
cg05636896	0.573745591	0.460843559	0.112902033	4.315105979	0.000166258	0.045922765	CAMKK2
cg16051954	0.529934026	0.428958306	0.10097572	4.265908116	0.00019042	0.047187538	CABC1
cg04531226	0.757461428	0.696080143	0.061381284	4.358483168	0.000147485	0.044769129	C9orf131
cg16490906	0.364555145	0.283989965	0.08056518	4.435220216	0.000119269	0.04289554	C5orf36
cg19389293	0.396800139	0.334892613	0.061907527	4.282011077	0.000182153	0.04679561	C18orf1
cg21994822	0.660695112	0.593211961	0.067483151	4.523938501	9.33E-05	0.040595914	C11orf86
cg12864721	0.221200043	0.155392648	0.065807395	4.303533576	0.000171654	0.046431479	C10orf41

cg15182635	0.414024898	0.333154642	0.080870256	4.331510007	0.000158896	0.045385925	C10orf41
cg23657179	0.559143346	0.430420942	0.128722403	5.485109561	6.39E-06	0.020993561	C10orf41
cg12368583	0.200422256	0.135189975	0.065232281	5.735723747	3.18E-06	0.017933936	C10orf11
cg01470340	0.51587868	0.439267581	0.076611098	4.524389452	9.31E-05	0.040595914	C10orf105;CDH23
cg09418913	0.378165993	0.308973554	0.069192439	4.210002947	0.000222103	0.048820087	BTBD1
cg05681060	0.594821304	0.523946666	0.070874638	4.206509736	0.000224247	0.04889562	BNC2
cg19528338	0.320403364	0.256378103	0.064025261	5.989286573	1.58E-06	0.016665295	BMP2
cg23756272	0.534368637	0.464582591	0.069786046	4.499952245	9.97E-05	0.04108719	BCL2
cg08477158	0.346228558	0.265483299	0.08074526	5.477972385	6.52E-06	0.020993561	BCAS3
cg15809217	0.362799343	0.302168337	0.060631007	4.226759703	0.000212097	0.048302958	BAT3
cg09067305	0.240254898	0.170771249	0.069483649	4.505103686	9.83E-05	0.041018238	BASP1
cg26628069	0.828595898	0.762421402	0.066174496	5.35835736	9.10E-06	0.023201788	B3GNTL1
cg16280399	0.844360094	0.768522913	0.075837181	5.304836789	1.06E-05	0.023518857	ATXN1
cg14524140	0.300771367	0.198320101	0.102451267	4.419371747	0.00012462	0.043304776	ATP8B4
cg00904723	0.438745808	0.340007101	0.098738706	4.46520538	0.000109759	0.041945878	ATP6V1A
cg12509712	0.805259199	0.713851365	0.091407834	4.274115516	0.000186161	0.046935533	ARSG;SLC16A6
cg06884805	0.313164377	0.222760237	0.09040414	5.277284886	1.14E-05	0.02399808	ARNTL

cg04638014	0.464294316	0.370893402	0.093400914	4.795432751	4.38E-05	0.034427377	ARL9
cg06967020	0.517400908	0.440929828	0.07647108	4.441626277	0.000117171	0.04268172	ARHGEF10L
cg05697656	0.227963502	0.147851927	0.080111575	4.871717805	3.54E-05	0.032150462	ARHGEF10
cg24138325	0.314407385	0.218608606	0.095798779	4.572233447	8.15E-05	0.038970814	ARHGEF10
cg02766403	0.642409602	0.55580127	0.086608332	4.493801178	0.000101391	0.04108719	ARHGAP42
cg02828164	0.659663668	0.576507395	0.083156273	4.676669994	6.10E-05	0.036851939	APPBP2
cg13221508	0.535831319	0.425904568	0.109926751	4.328394513	0.000160269	0.045452496	APP
cg06738887	0.375830742	0.298587536	0.077243206	4.185711348	0.00023744	0.049817792	ANXA2
cg06426784	0.666800203	0.582084068	0.084716136	4.953015147	2.82E-05	0.030965566	ANKIB1
cg08072584	0.345096804	0.257981466	0.087115338	4.479067646	0.00010562	0.041726091	ALPL
cg00034338	0.657940399	0.552697667	0.105242732	4.543891632	8.82E-05	0.039872797	AIG1
cg19853999	0.514234104	0.419718313	0.094515791	4.389529283	0.000135351	0.044178404	AGAP1
cg14597545	0.66592764	0.582923182	0.083004457	4.550574621	8.66E-05	0.039689075	ADPGK
cg15707029	0.362575039	0.266822461	0.095752577	4.27396212	0.00018624	0.046935533	ADCY9
cg23853507	0.40424193	0.339418623	0.064823307	4.219086579	0.000216622	0.048557802	ADARB2
cg02763933	0.568095217	0.467486647	0.10060857	4.525592877	9.28E-05	0.040559294	ADAP1
cg17187722	0.693015158	0.606865246	0.086149912	5.607968951	4.54E-06	0.019849205	ADAM9

cg03671465	0.411233283	0.343441521	0.067791762	4.340587669	0.000154961	0.045106965	ADAM19
cg00764772	0.415479885	0.346729235	0.06875065	4.354838762	0.000148978	0.044916791	ADAM19
cg01925508	0.75524764	0.663843862	0.091403778	5.387436405	8.39E-06	0.022464344	ACSL5
cg06794642	0.474897975	0.394328159	0.080569817	4.269892031	0.000188341	0.047017172	ABR
cg17479424	0.530459638	0.44856937	0.081890268	4.234422578	0.000207671	0.047997239	AAK1
cg03106056	0.394630558	0.469840971	-0.075210413	-4.732137936	5.23E-05	0.03589287	4-Mar
cg04985582	0.54278796	0.732154746	-0.189366786	-4.70685037	5.61E-05	0.036443957	ABCC13
cg05699681	0.528624412	0.67856191	-0.149937499	-4.846168564	3.80E-05	0.032884231	ABCC13
cg19211382	0.844357289	0.920720748	-0.076363459	-4.55208255	8.62E-05	0.039689075	ABCC13
cg10248985	0.773014842	0.857181023	-0.084166181	-5.801996824	2.65E-06	0.017336463	AEN
cg13528513	0.65659584	0.721654006	-0.065058166	-4.41194315	1.27E-04	0.043538493	AGTR1
cg04291149	0.365122014	0.439656639	-0.074534626	-4.561982773	8.39E-05	0.039265216	ANKS1A
cg18315870	0.329381898	0.423425768	-0.094043871	-4.469832952	1.08E-04	0.041929398	ATG101
cg05628902	0.242565735	0.333201742	-0.090636007	-5.329401306	9.87E-06	0.023201788	ATG101
cg05424831	0.830307384	0.891767393	-0.061460009	-4.568352094	8.24E-05	0.039092759	ATXN7L1
cg18429921	0.6111851	0.751852509	-0.140667409	-6.917605455	1.26E-07	0.008014008	BCL9
cg20029201	0.541340796	0.615687426	-0.074346629	-4.374911777	1.41E-04	0.044526441	BCL9L

cg20337103	0.481426213	0.546961386	-0.065535173	-4.906352533	3.21E-05	0.031490764	BCL9L
cg15350899	0.633943552	0.699382567	-0.065439015	-4.469352917	1.09E-04	0.041929398	BCL9L
cg11874426	0.645847361	0.706364236	-0.060516875	-4.247801336	2.00E-04	0.047770214	BCL9L
cg07139547	0.477952405	0.552806726	-0.074854321	-4.41006256	1.28E-04	0.043575916	BTBD9
cg20874052	0.440346986	0.519275305	-0.078928319	-4.92427682	3.06E-05	0.031459878	C11orf60
cg01338139	0.430598178	0.545781891	-0.115183713	-4.451677105	1.14E-04	0.042261637	C15orf53
cg15617140	0.582191988	0.653463397	-0.071271409	-6.536577531	3.53E-07	0.01141032	C18orf21
cg23608935	0.634753309	0.703023057	-0.068269748	-5.286920532	1.11E-05	0.023800455	C1orf87
cg16848730	0.653759098	0.723065357	-0.069306259	-4.6529168	6.52E-05	0.037040892	C3orf20
cg23950788	0.601158788	0.678917403	-0.077758615	-5.225341018	1.32E-05	0.025335589	C7orf16
cg17143291	0.637066267	0.767348166	-0.130281898	-4.34796675	0.000151834	0.045082443	CACNA1E
cg05401945	0.46944002	0.628052702	-0.158612682	-4.277878988	1.84E-04	0.046863679	CCDC66
cg05005217	0.633772564	0.713451386	-0.079678822	-4.731087279	5.24E-05	0.03592219	CDCA2
cg17701670	0.431457535	0.493855811	-0.062398276	-4.555485871	8.54E-05	0.039580312	CEACAM18
cg19993258	0.515251432	0.58338539	-0.068133958	-4.180872422	0.000240618	0.049873646	CHRNA3
cg20035459	0.504445702	0.56593265	-0.061486948	-5.103803985	1.85E-05	0.027582663	CLDN6
cg00937175	0.693890693	0.756654669	-0.062763975	-4.982061273	2.60E-05	0.029879665	COL18A1

cg26440059	0.356653314	0.622416722	-0.265763408	-4.287047888	1.80E-04	0.046720197	COL23A1
cg01322142	0.50729455	0.568585539	-0.061290989	-4.529972906	9.17E-05	0.040435314	CPLX1
cg00067274	0.50232865	0.57327472	-0.070946069	-4.460998398	0.000111046	0.041963944	DCHS2
cg21708364	0.659242535	0.719502443	-0.060259908	-4.992250469	2.53E-05	0.029658143	DPF3
cg14871544	0.502243982	0.565789422	-0.06354544	-4.789210572	4.46E-05	0.034427377	DSG3
cg21463095	0.590975048	0.663151805	-0.072176757	-4.604423396	7.46E-05	0.038315096	DUS2
cg10764762	0.527198947	0.599669193	-0.072470246	-4.201577428	0.000227309	0.049169668	EDNRB
cg07423556	0.656228629	0.719391225	-0.063162596	-4.429831455	0.000121062	0.043014857	EDRF1;FLJ37035
cg00626624	0.794111733	0.863649558	-0.069537825	-6.437191351	4.62E-07	0.01141032	FAM134B
cg14766704	0.865563907	0.92662861	-0.061064703	-5.474956309	6.58E-06	0.020993561	FAM134B
cg15786497	0.812556208	0.87814406	-0.065587852	-4.374687352	0.000141023	0.044526441	FAM198A
cg05491854	0.32465047	0.423821473	-0.099171003	-4.567559234	8.26E-05	0.039113605	FAM65B
cg09481212	0.652434488	0.717562054	-0.065127566	-4.233342063	0.000208289	0.048047328	FGD4
cg01219882	0.832332753	0.897614401	-0.065281648	-4.256403869	1.95E-04	0.047520198	FH
cg17894779	0.714946986	0.781181613	-0.066234627	-4.20893112	0.000222759	0.048839782	FHIT
cg05072008	0.335929707	0.42274611	-0.086816403	-4.187424734	2.36E-04	0.0497578	FIGNL1
cg02449670	0.534629927	0.738159318	-0.203529391	-4.882912643	3.43E-05	0.031820936	FRMD5

cg18746346	0.703027256	0.783370901	-0.080343644	-4.269334105	1.89E-04	0.047035815	GIMAP5;GIMAP1-GI MAP5
cg15065877	0.774359572	0.835998477	-0.061638905	-4.188622496	0.000235549	0.049732829	GPX6
cg20737909	0.581789638	0.64638161	-0.064591973	-4.270641524	1.88E-04	0.047003499	HCCA2
cg04442388	0.319167516	0.379453927	-0.060286412	-4.753353717	4.93E-05	0.035325944	HECW1
cg08872577	0.451220108	0.548770373	-0.097550264	-4.68224467	6.00E-05	0.036681334	HIVEP3
cg12865025	0.310468111	0.67158564	-0.361117528	-4.437787834	0.000118423	0.042799589	HLA-DPB1;HLA-DPA 1
cg16239536	0.605693994	0.678811386	-0.073117391	-4.343375455	1.54E-04	0.045106965	HMHA1
cg06443867	0.705422008	0.772512135	-0.067090127	-4.291362197	0.000177515	0.046720197	HNRNPD
cg25830379	0.731299421	0.804276815	-0.072977395	-4.213938284	2.20E-04	0.048687391	IGF1R
cg09965032	0.586919838	0.655766654	-0.068846816	-4.232982753	0.000208495	0.048048101	IKZF1
cg03812561	0.632955376	0.707947036	-0.074991661	-4.632303019	6.90E-05	0.037366827	IRAK3
cg00114478	0.156258999	0.226783942	-0.070524943	-5.310187932	1.04E-05	0.023477486	KCNB2
cg19547155	0.473647731	0.567092017	-0.093444286	-4.571990584	8.16E-05	0.038970814	LAIR2
cg16948489	0.438825757	0.510994768	-0.072169011	-5.047537918	2.17E-05	0.028639796	LAX1
cg10117369	0.371113737	0.432617156	-0.061503418	-4.292147273	0.000177131	0.046720197	LAX1

cg17711527	0.331869307	0.395025164	-0.063155858	-4.655024107	6.48E-05	0.037023982	LAX1
cg24811265	0.723277262	0.790248905	-0.066971643	-4.406912584	1.29E-04	0.043575916	LEF1
cg11253978	0.669527115	0.735345589	-0.065818474	-4.282570072	0.000181872	0.046774562	LINC00598
cg06955459	0.726958479	0.802638894	-0.075680414	-5.256544866	1.21E-05	0.024447884	LOC101927156
cg05592345	0.578174981	0.656947316	-0.078772335	-4.211930392	0.000220929	0.04869586	LRCH3
cg22559013	0.370852054	0.436084158	-0.065232104	-4.489340411	1.03E-04	0.041231958	MGC27382
cg16769027	0.667194306	0.744073488	-0.076879181	-4.598949372	7.57E-05	0.038500038	MME
cg09978130	0.689320877	0.75319884	-0.063877963	-4.373854199	0.000141348	0.044526441	MME
cg06806711	0.310018	0.372332165	-0.062314165	-4.811603233	4.19E-05	0.033794348	MS4A1
cg03913223	0.621573923	0.688834182	-0.067260259	-4.234472886	0.000207642	0.047997239	MYBPC2
cg15339688	0.807268129	0.868882049	-0.061613921	-5.859282178	2.26E-06	0.017078495	NRG3
cg17425818	0.347107758	0.447865419	-0.100757661	-4.53146709	9.13E-05	0.040373989	NRP1
cg02086971	0.516732278	0.577633159	-0.060900379	-4.353395587	1.50E-04	0.044989615	NSMCE1
cg13879177	0.680778598	0.752216968	-0.07143837	-5.043877468	2.19E-05	0.028778546	PADI6
cg14086396	0.725979165	0.799124905	-0.07314574	-5.997267337	1.54E-06	0.016614611	PCDHB3
cg13733755	0.571404869	0.644995156	-0.073590287	-4.91592196	3.13E-05	0.031459878	PCDHGB1;PCDHGA1; PCDHGA2;PCDHGA3

cg22244330	0.499590825	0.815479877	-0.315889052	-4.183374724	2.39E-04	0.049817792	PDE1A
cg19244639	0.491222046	0.552240084	-0.061018038	-4.547613554	8.73E-05	0.039746968	PEX5
cg04000474	0.760984817	0.844553176	-0.083568359	-5.439096392	7.27E-06	0.0211534	PGGT1B
cg02782895	0.341611671	0.404554763	-0.062943092	-4.779163068	4.58E-05	0.034652064	PODXL2
cg19126910	0.593334589	0.659308396	-0.065973807	-4.416287486	1.26E-04	0.043346698	POU2AF1
cg20749955	0.146619871	0.236903475	-0.090283603	-4.865431484	3.60E-05	0.032259054	PPP1R3B
cg04871235	0.783155757	0.844922093	-0.061766336	-4.241361981	2.04E-04	0.047946783	PRKCA
cg01261821	0.683118008	0.74382529	-0.060707282	-4.90408492	3.24E-05	0.031490764	PRR5-ARHGAP8;ARH GAP8
cg15312845	0.605958325	0.751840324	-0.145881998	-6.455198206	4.40E-07	0.01141032	PSG4
cg23455837	0.585714246	0.666527952	-0.080813706	-4.224798826	0.000213244	0.048389355	PTPRN2
cg15948324	0.690043198	0.768197937	-0.078154739	-4.374281357	0.000141181	0.044526441	PTPRN2
cg03440981	0.564442995	0.66637332	-0.101930325	-5.288849083	1.10E-05	0.023800455	RABEPK
cg23991209	0.375476324	0.454267108	-0.078790784	-4.293992675	0.000176232	0.046720197	RAD51B
cg16499834	0.607003301	0.668971962	-0.061968661	-4.511328057	9.66E-05	0.040791658	RAN
cg15706574	0.314448015	0.407610779	-0.093162764	-4.94443952	2.89E-05	0.031123959	RCAN2
cg07169182	0.648291357	0.71503263	-0.066741273	-4.882902594	3.43E-05	0.031820936	RCBTB2

cg14124261	0.63355291	0.700531659	-0.066978749	-4.194676365	0.000231662	0.049549298	RGS3
cg15811568	0.769193665	0.829322958	-0.060129293	-5.108219715	1.83E-05	0.027582663	RIMBP2
cg05341878	0.546241761	0.60718118	-0.060939419	-4.255815695	0.00019579	0.047521654	RIMS2
cg19261626	0.422938682	0.504977726	-0.082039044	-5.911816551	1.96E-06	0.017078495	RNF216
cg04300150	0.766545423	0.858038254	-0.091492831	-5.244896095	1.25E-05	0.024963354	RNF217
cg14859618	0.018771251	0.26575604	-0.246984789	-4.186767994	0.000236752	0.049762694	RUFY4
cg04087084	0.329009825	0.390875591	-0.061865767	-4.288101962	0.000179119	0.046720197	RYR3
cg12318285	0.638662495	0.717209333	-0.078546838	-4.737274961	5.15E-05	0.035738748	SCFD2
cg09393589	0.658949486	0.766645499	-0.107696014	-4.337411292	0.000156327	0.045121257	SH2D1A
cg15581429	0.571792912	0.632422808	-0.060629896	-4.446358658	0.000115644	0.042465731	SIRT2;RINL
cg26192556	0.555895837	0.619492902	-0.063597065	-5.547278589	5.38E-06	0.020848863	SLCO6A1
cg13870451	0.404986873	0.477568615	-0.072581741	-4.656366387	6.45E-05	0.037023982	SLIT3
cg20746451	0.734283258	0.870325215	-0.136041957	-4.180952642	0.000240565	0.049873646	SMARCAD1;LOC1019 29210
cg01211390	0.688210754	0.75831754	-0.070106787	-4.177100475	0.000243124	0.049904121	SMCO2
cg02438477	0.49723215	0.559810143	-0.062577993	-4.288949921	0.0001787	0.046720197	ST6GALNAC6
cg17674892	0.624187261	0.690408286	-0.066221025	-4.722101685	5.37E-05	0.035985031	STK39

cg14054883	0.642620791	0.733712508	-0.091091716	-5.050539101	2.15E-05	0.028490501	SYK
cg24509649	0.666833865	0.754020315	-0.087186449	-4.55102806	8.65E-05	0.039689075	SZT2
cg23472595	0.581874546	0.650292113	-0.068417568	-4.57782724	8.03E-05	0.03891997	TCEAL1
cg05332652	0.712517684	0.875699643	-0.163181959	-5.594326578	4.72E-06	0.020012578	TCONS_00029157
cg02409829	0.552986723	0.6983828	-0.145396078	-5.837517262	2.40E-06	0.017078495	TCONS_00029157
cg00576086	0.690736229	0.771471506	-0.080735277	-4.460586877	0.000111173	0.041963944	TERT
cg19679175	0.655001854	0.724621253	-0.069619399	-4.662932359	6.34E-05	0.037022282	TMEM178B
cg02828104	0.452234215	0.519038693	-0.066804478	-4.225462224	0.000212856	0.048335433	TMEM189;TMEM189- UBE2V1
cg01264984	0.808790728	0.870521342	-0.061730614	-4.348655406	0.000151545	0.045082443	TRIM36
cg00255699	0.576754555	0.653642478	-0.076887923	-4.20192759	0.00022709	0.049141328	TRIT1
cg05927789	0.418484486	0.482506726	-0.064022241	-4.901552912	3.26E-05	0.031490764	TTC7A
cg13928272	0.537944309	0.644373345	-0.106429036	-4.628488548	6.97E-05	0.03742877	UQCC1
cg20675286	0.600435649	0.697678804	-0.097243155	-4.336354827	0.000156784	0.045188481	WASF2
cg05811936	0.65745199	0.73007796	-0.07262597	-4.388784667	0.00013563	0.044178404	WNT5B
cg04491630	0.655320489	0.731835285	-0.076514796	-4.736825799	5.16E-05	0.035738748	ZAK
cg08202521	0.601883389	0.669482714	-0.067599324	-4.655359139	6.47E-05	0.037023982	ZDHHC14

cg09837943	0.728576296	0.790265591	-0.061689296	-4.469551789	0.000108444	0.041929398	ZIM2
cg08202521	0.601883389	0.669482714	-0.067599324	-4.655359139	6.47E-05	0.037023982	ZDHHC14
cg04074955	0.771280547	0.689875335	0.081405212	4.189984492	0.000234669	0.049708999	ZDHHC14
cg04491630	0.655320489	0.731835285	-0.076514796	-4.736825799	5.16E-05	0.035738748	ZAK
cg11119767	0.44935236	0.353964322	0.095388038	4.328474525	0.000160234	0.045452496	ZAK
cg04300150	0.766545423	0.858038254	-0.091492831	-5.244896095	1.25E-05	0.024963354	RNF217
cg16031179	0.508498708	0.416694978	0.091803731	4.537362715	8.98E-05	0.040058285	RNF217
cg26440059	0.356653314	0.622416722	-0.265763408	-4.287047888	0.00017964	0.046720197	COL23A1
cg21871330	0.862702141	0.802358298	0.060343843	4.794449889	4.39E-05	0.034427377	COL23A1
cg06515418	0.618339372	0.547782299	0.070557073	4.405977602	0.000129328	0.043575916	COL23A1
cg08862479	0.73321586	0.661723712	0.071492149	5.028207882	2.29E-05	0.029050707	COL23A1
cg01561304	0.45186271	0.352593889	0.099268822	4.230625901	0.000209852	0.048109749	COL23A1
cg17429282	0.724629844	0.61445634	0.110173504	4.903255949	3.24E-05	0.031490764	COL23A1

Supplementary Table 3 Kyoto Encyclopedia of Genes and Genomes pathways in differentially methylated genes

Pathway ID	Pathway	Gene	Rich factor	<i>p</i> -value	<i>q</i> -value
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hsa0421 1	Longevity regulating pathway	ATG101, CAMKK2, ADCY9, CREB3L2, RPTOR, IGF1R, PRKAG2	4.128	0.001	0.120
hsa0466 6	Fc gamma R-mediated phagocytosis	PRKCE, PRKCA, LYN, EPLA2G4A, WASF2, SYK	3.499	0.004	0.490
hsa0492 5	Aldosterone synthesis and secretion	PRKCE, AGTR1, LDLR, PRKCA, ADCY9, CREB3L2	3.314	0.006	0.438
hsa0415 2	AMPK signaling pathway	RAB10, CAMKK2, TBC1D1, CREB3L2, RPTOR, IGF1R, PRKAG2	3.036	0.006	0.333
hsa0461 1	Platelet activation	PRKCZ, PPP1R12A, LYN, PLA2G4A, ADCY9, P2RY12, SYK	3.011	0.006	0.280
hsa0497 9	Cholesterol metabolism	LDLR, OSBPL5, VDAC2, SORT1	4.198	0.006	0.236
hsa0491 3	Ovarian steroidogenesis	LDLR, PLA2G4A, ADCY9, IGF1R	4.198	0.006	0.236
hsa0060 4	Glycosphingolipid biosynthesis-ganglio series	ST6GALNAC6, ST8SIA1	6.997	0.007	0.180
hsa0492	Oxytocin signaling pathway	PPP1R12A, PRKCA, CAMKK2, CDKN1A, PLA2G4A,	2.744	0.007	0.182

1		ADCY9, RYR3, PRKAG2			
hsa0491	Melanogenesis	PRKCA, ADCY9, WNT5B, LEF1, CREB3L2, EDNRB	3.118	0.008	0.182
6					
hsa0492	Relaxin signaling pathway	PRKCZ, MMP13, PRKCA, ADCY9, CREB3L2, EDNRB, SHC1	2.826	0.009	0.184
6					
hsa0473	Long-term depression	PRKCA, LYN, PLA2G4A, IGF1R	3.558	0.013	0.234
0					
hsa0522	Hepatocellular carcinoma	TERT, PRKCA, CDKN1A, WNT5B, DPF3, LEF1, IGF1R, SHC1	2.514	0.013	0.217
5					
hsa0401	ErbB signaling pathway	PRKCA, CDKN1A, NRG3, CBL, SHC1	3.051	0.015	0.232
2					
hsa0421	Longevity regulating pathway - multiple species	ADCY9, RPTOR, IGF1R, PRKAG2	3.386	0.016	0.229
3					
hsa0521	Basal cell carcinoma	CDKN1A, WNT5B, LEF1, BMP2	3.332	0.017	0.229
7					
hsa0436	Axon guidance	PRKCZ, PRKCA, WNT5B, RGS3, EFNB2, NRP1, SLIT3, ROBO1	2.399	0.017	0.220
0					

hsa0497 4	Protein digestion and absorption		CELA2A, MME, ELN, COL18A1, SLC7A9	2.915	0.018	0.222
hsa0402 0	Calcium signaling pathway		AGTR1, PRKCA, PDE1A, CACNA1E, VDAC2, ADCY9, EDNRB, RYR3	2.332	0.020	0.233
hsa0461 4	Renin-angiotensin system		AGTR1, MME	4.563	0.021	0.231
hsa0427 0	Vascular smooth muscle contraction		PRKCE, AGTR1, PPP1R12A, PRKCA, PLA2G4A, ADCY9	2.602	0.021	0.220
hsa0466 4	Fc epsilon RI signaling pathway		PRKC), LYN, PLA2G4A, SYK	3.133	0.021	0.212
hsa0522 6	Gastric cancer		TERT, CDKN1A, WNT5B, LEF1, BCL2, SHC1, FGF7	2.433	0.021	0.204
hsa0496 2	Vasopressin-regulated reabsorption	water	ADCY9, CREB3L2, DYNC1I1	3.578	0.022	0.205
hsa0152 2	Endocrine resistance		CDKN1A, ADCY9, BCL2, IGF1R, SHC1	2.733	0.024	0.213
hsa0475	Inflammatory mediator regulation of		PRKCE, PRKCA, PLA2G4A, ADCY9, TRPA1	2.705	0.025	0.215

0	TRP channels				
hsa0521	Prostate cancer	CDKN1A, LEF1, CREB3L2, BCL2, IGF1R	2.705	0.025	0.215
5					
hsa0493	Type II diabetes mellitus	PRKCE, PRKCZ, CACNA1E	3.422	0.026	0.204
0					
hsa0521	Glioma	PRKCA, CDKN1A, IGF1R, SHC1	2.957	0.027	0.202
4					
hsa0493	AGE-RAGE signaling pathway in diabetic complications	PRKCE, PRKCZ, AGTR), PRKCA, BCL2	2.650	0.028	0.204
3					
hsa0452	Adherens junction	LEF1, CTNND1, WASF2, IGF1R	2.915	0.028	0.199
0					
hsa0406	HIF-1 signaling pathway	PRKCA, CDKN1A, EGLN1, BCL2, IGF1R	2.624	0.029	0.199
6					
hsa0491	Thyroid hormone synthesis	GPX6, PRKCA, ADCY9, CREB3L2	2.837	0.031	0.208
8					
hsa0402	cGMP-PKG signaling pathway	PRKCE, AGTR1, PPP1R12A, VDAC2, ADCY9, CREB3L2, EDNRB	2.254	0.032	0.208
2					

hsa0511 0	Vibrio cholerae infection	PRKCA, ATP6V1A, ADCY9	3.149	0.034	0.214
hsa0510 0	Bacterial invasion of epithelial cells	ECTTN, CBL, WASF2, SHC1	2.76	0.035	0.211
hsa0439 2	Hippo signaling pathway-multiple species	DCHS2, WWTR1	3.619	0.039	0.230
hsa0491 0	Insulin signaling pathway	PRKCZ, RPTOR, PRKAR2B, CBL, SHC1, PRKAG2	2.282	0.040	0.230
hsa0453 0	Tight junction	PRKCE, PRKCZ, CTTN, CLDN6, MPP4, RAB8B, PRKAG2	2.161	0.040	0.230
hsa0152 1	EGFR tyrosine kinase inhibitor resistance	PRKCA, BCL2, IGF1R, SHC1	2.657	0.040	0.220
hsa0471 0	Circadian rhythm	ARNTL, PRKAG2	3.386	0.046	0.246
hsa0472 5	Cholinergic synapse	PRKCA, ADCY9, CREB3L2, BCL2, CHRNA3	2.343	0.047	0.247
hsa0413	Autophagy-ther	ATG101, RPTOR	3.280	0.050	0.254

AMPK: Adenosine monophosphate-activated protein kinase; Fc: Crystallizable fragment; RI: Reperfusion injury; TRP: Transient receptor potential; AGE-RAGE: Advanced glycation end product-receptor for advanced glycation end product; HIF-1: Hypoxia-inducible factor-1; cGMP-PKG: Cyclic guanosine monophosphate-protein kinase G; EGFR: Epidermal growth factor receptor.

Supplementary Table 4 Differentially expressed genes between responders and nonresponders

Gene name	Responders	Nonresponders	log2FC	<i>p</i>-value	<i>q</i>-value
SIGLEC1	0.745013482	2.435137451	-1.708664769	0.00039439	0.600604377
USP18	1.557512235	3.528572037	-1.179840967	0.000539469	0.651566928
MT-ATP6	2049.744488	1137.61918	0.849426388	0.000526504	0.651566928
IFI44L	1.324421647	4.275151485	-1.690613045	0.000798046	0.655045343
ATP6V0CP4	3.323579549	0.369332978	3.169743893	0.000721519	0.655045343
IFITM3P2	0.899893932	2.309855386	-1.359975661	0.001010684	0.65920209
OAS3	4.995201011	14.00633495	-1.487464855	0.001213322	0.696685528
MPO	6.89101863	1.579413527	2.125328306	0.00171879	0.824689807
IGLV2-14	27.70767378	71.02116988	-1.357963532	0.002197884	0.938818078

TKTL1	2.363734275	0.775008838	1.608783193	0.004637476	0.945686974
OAS1	3.910136849	8.778373161	-1.166734499	0.004440535	0.945686974
RSAD2	5.877988627	20.21069915	-1.781724757	0.003436557	0.945686974
CMPK2	1.707577566	4.851505504	-1.506481396	0.003588992	0.945686974
IFI44	6.138626549	12.95673068	-1.077713925	0.004510726	0.945686974
HERC5	4.243322519	10.6290973	-1.324752836	0.004673598	0.945686974
LDLRAP1	5.978769079	3.186311062	0.907961374	0.004546467	0.945686974
LY6E	8.171889609	16.11801191	-0.979932184	0.004277441	0.945686974
IGHV4-34	1.529821021	2.910780804	-0.928043324	0.004361733	0.945686974
DDX11L2	1.095265656	0.462338872	1.244258266	0.003817934	0.945686974
AP003774.2	0.447697581	1.090444014	-1.284319272	0.004106161	0.945686974
AL034379.1	1.808966278	0.746537487	1.276878904	0.003331048	0.945686974
CD24	4.423097291	1.953444417	1.17903677	0.004074291	0.945686974
RNVU1-19	1.900736002	0.393470404	2.272231139	0.002868933	0.945686974
AC005343.4	0.051953328	1.168765264	-4.491625231	0.004469851	0.945686974
OAS2	5.682203216	10.14908274	-0.83682701	0.004917548	0.954696164
PLEKHB1	1.601099957	1.034865916	0.629619524	0.047167777	1

EIF2AK2	2.912354978	4.503363615	-0.628816758	0.036782415	1
CEACAM6	2.629213366	0.561834963	2.226412912	0.011112241	1
SYNGR1	1.73468644	1.038710763	0.739880925	0.016073477	1
CTSG	4.964711641	0.937186406	2.405301993	0.010971924	1
BPI	7.569364272	1.916269502	1.981871663	0.008076187	1
OLFM4	5.847793428	1.114815503	2.391087379	0.011141766	1
FOLR3	12.15365709	5.342097478	1.185912286	0.024654857	1
MMP8	2.198418329	0.703251339	1.644353638	0.04313247	1
IFIT3	26.33483692	66.48742377	-1.336108952	0.025632414	1
IFIT2	15.7670369	33.71659828	-1.096547428	0.039787527	1
EGR1	3.514718278	8.523370032	-1.278014912	0.026913261	1
CEACAM8	3.521372385	0.913609927	1.946487568	0.028052307	1
MT2A	8.049213798	12.33678522	-0.616046718	0.02708603	1
IFI6	54.7571816	120.1688607	-1.133943003	0.011507952	1
HELZ2	4.867585043	7.652408735	-0.652707749	0.016014097	1
XAF1	3.315627627	5.932984244	-0.839475963	0.02119222	1
EPSTI1	4.403750922	8.570555781	-0.960655891	0.009251373	1

BEX1	1.042427731	0.280737152	1.892655465	0.043797716	1
OASL	5.240893808	9.812864193	-0.904861417	0.013011468	1
RPL13AP25	58.1797477	38.10511049	0.610532542	0.041632713	1
ZCCHC2	2.002050315	3.645603897	-0.864679586	0.010853632	1
IFITM3	106.1845299	211.5697408	-0.994559711	0.020652577	1
SERPING1	1.131368101	2.54236717	-1.168104	0.010779199	1
BCL2L11	1.001581491	1.759127219	-0.812580014	0.033845174	1
FBXO32	1.586580175	1.02120741	0.635644516	0.021307239	1
FZD1	0.667001684	1.024610563	-0.619313361	0.029710148	1
MX1	7.248313871	15.34003734	-1.081584661	0.015444166	1
AC010323.1	2.630369121	1.310343534	1.005320174	0.039623861	1
RNASE3	6.472994982	1.989319741	1.702158208	0.022899857	1
ATP6V0E2	1.554679259	1.01463442	0.615656965	0.041397124	1
RPS21	143.5747296	95.67228434	0.585628895	0.038588295	1
CCDC106	1.060401842	0.651206152	0.703424848	0.011238282	1
DMAP1	4.043964029	2.564858988	0.656890654	0.049841966	1
OPLAH	0.970538527	1.477094016	-0.605904267	0.026981006	1

DDX60L	5.781077485	9.291827612	-0.684623979	0.025589173	1
SREBF2-AS1	1.109530923	0.704144354	0.656006751	0.019162912	1
H2AC20	12.47843218	7.422866328	0.749388388	0.023141396	1
IRF7	6.545324831	10.07986286	-0.622939313	0.020180354	1
IFIT1	8.667263034	25.06824166	-1.532212413	0.011184647	1
ISG15	64.69902596	177.3085789	-1.454446443	0.006319031	1
HES4	0.922516773	1.889692155	-1.03450418	0.006590086	1
NTNG2	3.494570909	5.833580075	-0.739266218	0.026175582	1
ELANE	11.00260774	3.100839799	1.827114601	0.019063857	1
MIER1	1.258629511	1.894297816	-0.589809489	0.045478943	1
GK	3.16841241	5.182262442	-0.709821946	0.040001605	1
SNORD68	4.781034581	2.744426755	0.800818004	0.04183335	1
GGTA1P	2.404371682	1.509205515	0.671870656	0.005512838	1
IGKV3D-20	4.355510403	6.810358038	-0.644888855	0.042318546	1
IGLV8-61	5.911948014	10.68624356	-0.854049315	0.026568359	1
IGLV1-47	17.37853781	30.19011909	-0.796769746	0.026649083	1
IGLV1-44	16.11124449	26.75184874	-0.731570658	0.025780892	1

TRBV27	11.74064936	6.594103094	0.832263856	0.044055708	1
TRAV3	5.447869669	3.397188221	0.681351037	0.047078046	1
TRAV16	2.292439163	1.378526802	0.733756131	0.028207713	1
IGHG4	8.45156228	15.80196206	-0.902813748	0.016685717	1
IGHG1	24.31461489	48.65269127	-1.00069587	0.00540357	1
IGHV6-1	3.491965121	8.835485856	-1.339270321	0.013770767	1
IGHV1-3	6.577441668	12.74136551	-0.953921447	0.008564969	1
IGHV1-46	0.537386264	1.003812336	-0.901458232	0.040862733	1
AL590762.1	1.030608291	0.598650578	0.783710025	0.03882205	1
SNORD12B	1.8492337	3.238959637	-0.808602931	0.046673987	1
DDX11L1	1.147506465	0.607913485	0.916564355	0.006107866	1
IGHV4-59	1.931189457	2.939686205	-0.606172459	0.027751159	1
MTND1P23	3.176631716	36.43567839	-3.519782107	0.011433643	1
POLR2J2	4.785138825	3.066791372	0.641830754	0.042099224	1
ANKRD44-AS1	6.584680692	3.865511108	0.768454299	0.039381218	1
RPL23AP25	1.010739134	0.513147474	0.977965285	0.01119168	1
AP000936.3	6.165632342	3.447219009	0.838815905	0.017794382	1

AC099560.2	1249.305706	830.2110077	0.589576583	0.019626304	1
AC245884.3	1.131017456	0.71913439	0.653287888	0.043930072	1
RPL19P16	1.312114796	0.239286382	2.455083749	0.030960775	1
AC009133.1	2.293168867	1.038025978	1.143500047	0.011520072	1
AC004865.2	5.148009178	2.960579803	0.798134883	0.042172045	1
LILRA4	0.712617061	1.15332342	-0.694598207	0.018475324	1
PSMB9	8.425576909	13.51869658	-0.682108681	0.030309973	1
DEFA1B	7.427785745	2.270463745	1.709945201	0.030281034	1
IGKV1-16	1.13703215	2.389719701	-1.071568362	0.018156406	1
AC112496.1	0.749720955	1.29868057	-0.792620991	0.0435817	1
IGKV2D-29	1.847019382	3.795227436	-1.038987338	0.024748891	1
NAIPP3	2.077651045	4.121233398	-0.988122806	0.01472287	1
AC139495.2	0.773614313	2.024289877	-1.387729506	0.048482598	1
NAIPP1	1.174760924	2.261288959	-0.944778175	0.027454596	1
COPDA1	1.5991138	0.765485373	1.062825895	0.01221038	1
AC136475.5	1.089147513	2.454800311	-1.172406307	0.007476967	1
KDM2B-DT	1.219325285	0.511467505	1.253368563	0.01146973	1

FCGR1CP	3.736725269	6.535315917	-0.80648248	0.038131211	1
AC093227.1	1.271236296	0.787105536	0.69160323	0.01078172	1
MTCO2P2	1.788799171	1.065895682	0.746925175	0.040972999	1
AC105052.3	14.481178	5.467106386	1.405329611	0.037171982	1
AC119396.2	1.245131698	0.589119293	1.07966664	0.019443603	1
AC024075.1	0.845170838	1.732650277	-1.035665593	0.041170377	1
AL162424.1	5.691023635	3.630966831	0.64833442	0.021065103	1
AL356488.2	3.749198294	2.230303192	0.749342285	0.033655473	1
AC136475.9	3.781414675	8.328562248	-1.1391414	0.009062622	1
AL592494.2	1.096025257	0.491480882	1.15707384	0.04015495	1
U62317.1	1.178962581	2.240857101	-0.926532722	0.016741963	1
AL353708.3	1.105225749	0.729708239	0.598949431	0.014170562	1
H2BC17	0.890242371	1.720497843	-0.950556011	0.011756671	1
AC006001.4	8.872236616	3.629223023	1.289637126	0.021741036	1
MIR3648-1	7.905771621	3.356382152	1.235999291	0.00901424	1
FP671120.2	5.55699308	2.418705331	1.200069426	0.012266466	1
AL031777.2	0.745924165	1.1192487	-0.585429772	0.027165612	1

RN7SK	20.83225036	7.654646028	1.444411122	0.045901943	1
AL022238.4	1.031100474	0.473702517	1.122131678	0.040797226	1
AC107959.4	2.078509163	3.696447904	-0.830590473	0.031390288	1
Z84488.2	3.333249062	1.529351126	1.124009446	0.008135286	1
