

SUPPLEMENTAL MATERIAL

For

CaMKII δ mediates myocardial ischemia/reperfusion injury through NF-kappa B

Generation of cardiac specific CaMKII δ KO mice. Global CaMKII δ KO mice were generated as published¹. Cardiac specific CaMKII δ KO mice were generated by crossing heterozygous floxed CaMKII δ mice¹ with MLC 2v-Cre mice (provided by Dr. Ju Chen at UCSD). This strategy has been shown previously to successfully ablate target genes in ventricles². All procedures were performed in accordance with the NIH *Guide for the Care and Use of Laboratory Animals* and approved by the Institutional Animal Care and Use Committee of UCSD.

In vivo I/R and hemodynamic measurements. 8-10 wk old mice were anesthetized by sodium pentobarbital (45 mg/kg, i.p.) and then subjected to myocardial ischemia induced by left anterior descending (LAD) coronary artery occlusion for 1hr followed by reperfusion for 24 hr. Sham operated mice were subjected to the same surgical procedures without LAD ligation. Buprenorphine (0.1 mg/kg) was administered subcutaneously to reduce postoperative pain. In the animals with drug treatment, BMS- 345541 (2 mg/kg) (an inhibitor of I kappa B kinase) or cyclosporin A (CsA, 10 mg/kg) was intravenously administered 10 min before reperfusion. At the end of reperfusion, the LAD artery was re-occluded. 2% Evans blue dye was injected into the carotid arterial root to stain the normally perfused region blue and outline the area at risk (AAR). The left ventricle (LV) was rapidly excised and cut into 1-mm-thick transverse sections, which were then incubated in 1% 2,3,5- triphenyltetrazolium chloride (TTC) for 10 min at 37°C to differentiate the viable (red) and nonviable myocardium (pale) within the risk zone. The areas of infarction, at risk, and nonischemic LV were assessed by a blinded observer using Image J (NIH). The area at risk as a percent of the LV (AAR/LV) and the infarction size (IS) as a percent of the AAR (IS/AAR) were calculated. After 24-hr reperfusion, the hemodynamic measurements were performed as described previously³. Briefly, a 1.8-French high fidelity catheter tip micromanometer was inserted into the right carotid artery and then manipulated across the aortic valve into the left ventricle (LV). When a stable and reproducible pressure reading was obtained, LV pressure, Maximum positive and negative first derivative of left ventricular pressure ($\pm dP/dt_{\max}$) were recorded and averaged from 12 beats.

Heart tissue preparation. The left ventricles were cut transversely into two parts. Myocardium from half of the LV was frozen in liquid nitrogen for protein, gene array (RNA analysis) and DNA laddering. The other part was fixed for 24 hrs in 4% paraformaldehyde dissolved in 0.1 M PBS (pH 7.4), subsequently embedded in paraffin for histological analysis.

TUNEL assay and immunofluorescence staining. *In situ* DNA fragmentation was assessed using TUNEL assay on deparaffinized sections and the number of TUNEL positive cells was determined in 3 sections per group. Inflammatory cell infiltration after I/R was visualized by immunofluorescent staining of Cluster of Differentiation 68 (CD68).

Protein analysis. Cardiac homogenates were prepared as described previously¹. Western blot analysis was performed according to protocols described previously¹. The antibodies for immunoblotting were as follows:

CaMKII δ , PLN, NF- κ B and α -actinin (Santa Cruz); cleaved caspase-3; MCP-1, I κ B α , Cytochrome C, phospho-IKK α / β Ser176/180, GAPDH, and VDAC (Cell Signaling); phospho-PLN at CaMKII site (Thr17) and PKA site (Ser16) (Badrilla); RyR and phospho-CaMKII (Affinity

Bioreagents); phospho-RyR2 at CaMKII site (Ser2814) and PKA site (Ser2808) (obtained from A.R.Marks, Columbia University, New York, New York, USA).

DNA analysis. DNA laddering was detected using agarose gel electrophoresis. DNA was isolated according to the published protocol with minor modifications⁴. Briefly, tissue samples were digested with proteinase K and incubated with RNase A. Samples were centrifuged, and supernatants containing DNA were precipitated with isopropanol. Following DNA electrophoresis, DNA laddering, an indicator of tissue apoptotic nucleosomal DNA fragmentation, was visualized under ultraviolet transillumination.

Fractionation. Nuclear and cytosolic fractions were isolated from hearts and cells as described previously^{5, 6}.

Affymetrix and transcription factor binding site enrichment analysis. Affymetrix Gene 1.0 ST v1 arrays were hybridized to labeled cDNA prepared from WT and CaMKII δ KO hearts subjected to 1hr ischemia followed by 24hr reperfusion (n=3 replicates/condition). Affymetrix .cel files were normalized and RNA signal values⁷ generated with AltAnalyze⁸. To determine genes differentially expressed after I/R in WT and CaMKII δ KO hearts, interaction P values were computed with the LIMMA package in R⁹. We identified 3,129 probesets with differential expression (interaction P<0.05 and at least a 20% fold change between any one of the four groups). These genes were clustered with the HOPACH algorithm¹⁰. To predict transcription factors that might regulate these 3,129 differentially expressed genes their 5kb promoters were scanned for enrichment (compared to frequency of enrichment in all annotated 5kb promoters) of evolutionarily conserved (human to mouse) transcription factor binding sites from the TRANSFAC database using Whole Genome RVista tool¹¹. This analysis yielded 973 transcripts that contained at least one conserved NF- κ B site. These were HOPACH clustered and each cluster was annotated by enrichment for Gene Ontology terms using GO-Elite⁸.

NF- κ B activity assay. An enzyme-linked NF- κ B immunosorbent assay (ELISA)-based method (Trans-AM NF- κ B; Active Motif, Carlsbad, CA) was used to quantify NF- κ B activation according to the manufacturers guidelines. Briefly, cardiac lysates were placed in 96-well plates coated with an oligonucleotide containing the NF- κ B consensus sequence, and the presence of active NF- κ B was detected by using antibodies specific for p65 subunits that are not complexed to I κ B and thus able to bind the consensus sequence. A horseradish peroxidase (HRP)-conjugated secondary antibody was used to quantify NF- κ B binding by conversion of an applied chromogenic substrate.

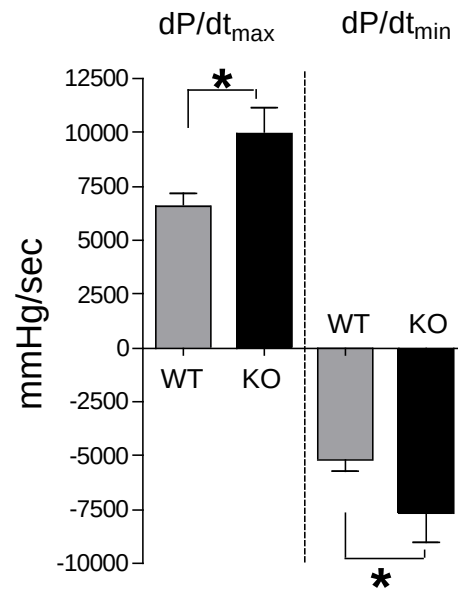
CaMKII activity assay. CaMKII activity was measured in ventricular homogenate using Syntide-2, a synthetic CaMKII-specific substrate peptide. Briefly, following homogenization in lysis buffer (50mM HEPES, 10% ethylene glycol, 2mg/ml BSA, 5mM EDTA, pH 7.5), ventricular lysates were incubated at 37°C for 10min in autonomous activity buffer (50mM HEPES, 10mM magnesium acetate, 1mM EGTA, 1mg/ml BSA, 20 μ M Syntide-2, 1mM DTT, 400nM ATP[γ -³²P], pH 7.5) or maximal activity buffer (50mM HEPES, 10mM magnesium acetate, 500nM calcium chloride, 1 μ M calmodulin, 1 mg/ml BSA, 20 μ M syntide-2, 1mM DTT, 400nM ATP[γ -³²P], pH 7.5). Labeled peptides were blotted onto Whatman P81 filter paper and washed extensively. CPM was quantified in a scintillation counter. Percent activation was calculated as the ratio of autonomous to maximal activity for each sample.

Adenoviral CaMKII δ overexpression. Neonatal rat ventricular myocytes (NRVMs) were isolated from hearts of 2–3-day-old Sprague-Dawley rat pups, as described previously¹² and infected with 40 MOI Adv-GFP, 40 MOI constitutively active CaMKII δ , or 40 MOI constitutively

active CaMKII δ in the presence of 15 μ M BMS-345541 for 24 hours. Nuclear p65 was determined in nuclear extracts by Western blotting, and phospho-IKK α/β Ser176/180 was determined in whole-cell lysate by Western blotting.

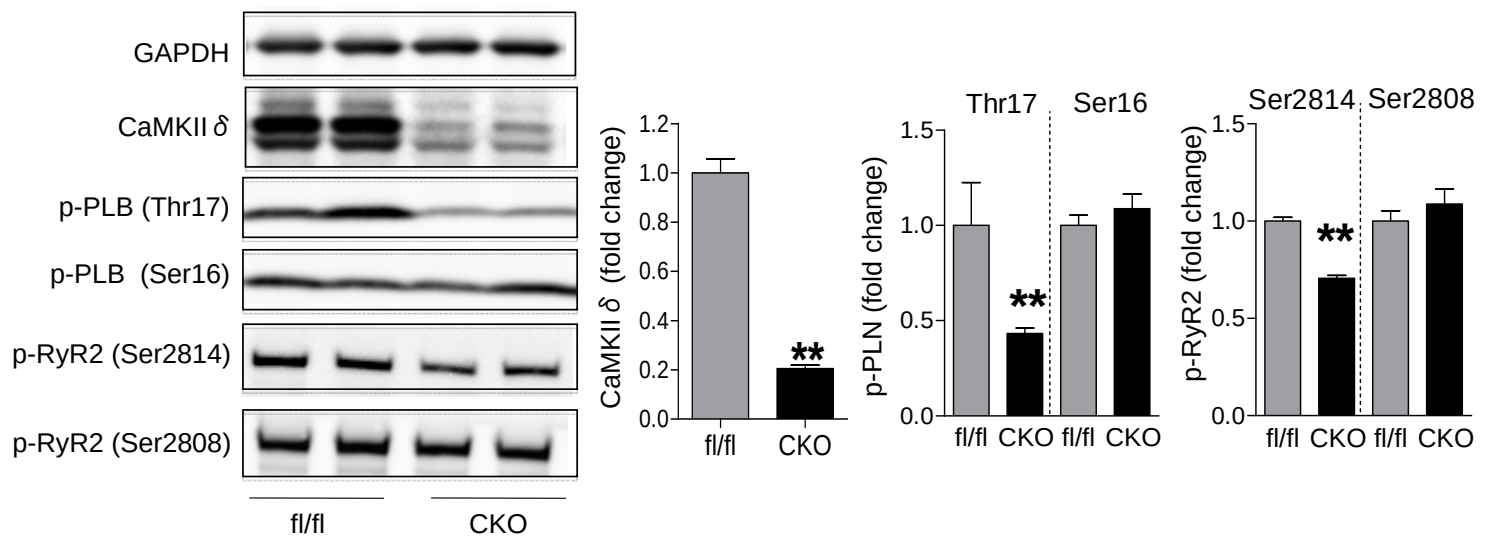
Reference

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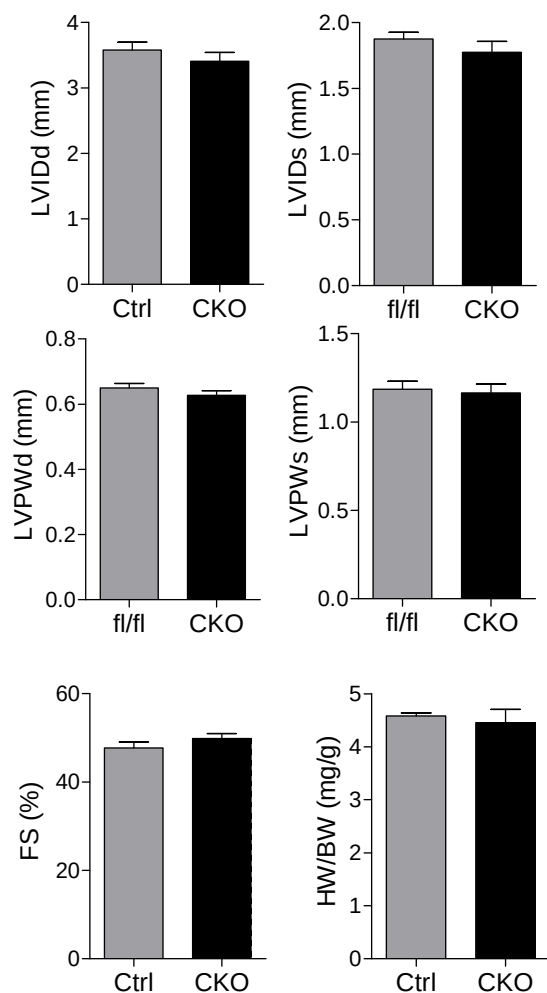


Online Figure I. CaMKII δ deletion enhances heart function recovery after 7-day reperfusion following 1-hr ischemia. The values for maximum rate of left ventricular (LV) pressure rise and decline ($dP/dt_{\max}$ and $dP/dt_{\min}$) after I/R. Data are mean $\pm$ SEM of values from 6 mice. * $p < 0.05$ versus WT

A.



B.



Online Figure II. Characterization of basal phenotype of CaMKII δ cardiac specific KO mice at 8 wks of age. (A) Analysis of protein expression and phosphorylation in CaMKII δ fl/fl and cardiac specific CaMKII δ KO (CKO) mice. LV homogenates were subjected to Western blotting. Quantitative analysis of the expression and phosphorylation of selected proteins is shown at right. Data are mean $\pm$ SEM of 3-5 determinations. ** $P < 0.01$ versus Ctrl (fl/fl). (B) Normal heart structure and function in CaMKII δ cardiac specific KO mice. Shown are averaged echocardiographic parameters and heart weight/body weight in fl/fl control and CaMKII δ cardiac specific KO mice. Data are mean $\pm$ SEM of values from 7-8 mice.

Online Table I Hemodynamic analysis of the hearts after I/R

	WT sham	WT I/R	KO Sham	KO I/R
LVP _{max} (mmHg)	105.3±10.7	74.8±3.9	105.8±5.5	90.7±3.1*
+dP/dt _{max} (mmHg/Sec)	9062±2293	4263±459	8531±1024	6158±459*
-dP/dt _{max} (mmHg/Sec)	-7017±1294	-3717±397	-6055±490	-4917±389*
LVEDP (mmHg)	3.4±1.4	6.1±1.4	4.4± 1.5	4.2±1.5
Exp Tau (ms)	14.5±1.4	18.9±1.3	16.5±2.5	19.8±2.1

CaMKII δ KO and WT mice were subjected to hemodynamic detection after 1hr ischemia followed by 24 hr reperfusion. Data are expressed as mean $\pm$ SEM of values from 4-8 mice. LVP_{max}, maximum systolic LV pressure; +dP/dt_{max}, maximum positive first derivative of LVP; -dP/dt_{max}, maximum negative first derivative of LVP; LVEDP, Left Ventricular End-Diastolic Pressure; Exp Tau, Exponential Tau. *P < 0.05 versus WT I/R.

Online Table II Changes of NF- κ B target genes in WT and CaMKII δ KO mice after I/R

Symbol	Transcript cluster ids	p.interaction	Fold WTI/RvsWTSham	P valueWTI/RvsWTSham	Fold KOI/RvsKOSham	P Value KOI/RvsKOSham
Il6	10520452	0.040262144	47.52111122	9.73687E-05	20.58653171	0.000898548
Sphk1	10382802	0.033244458	17.51381736	0.000282504	4.080040107	0.104997731
Hbegf	10458340	0.005961671	11.52815383	6.78793E-05	5.484811681	0.001002527
Pdk4	10543017	0.0364958	10.30634297	0.000290805	2.628277438	0.214428653
Gdpd3	10557470	0.0075401	7.129616339	0.087600707	-7.442981015	0.164251161
Fkbp5	10449452	0.033470701	6.797389685	0.004661148	2.229971724	0.133883296
Cyr61	10502655	0.007704296	6.140110687	0.001127848	2.926899745	0.001325323
Sgk1	10362073	0.00610973	5.416143014	0.002291313	1.664488805	0.195837281
Cd80	10435704	0.039451734	4.610415154	6.11029E-05	3.016864708	0.003061554
Map2k3	10376733	0.034896275	4.347901904	0.000716427	2.35450426	0.024617052
Gabrg3	10563858	0.011680635	3.948031044	0.036284627	-1.018829991	0.956518716
Birc3	10590801	0.004142602	3.59531539	0.002039292	1.599600533	0.056825836
Sox2	10491477	0.041086716	3.544330989	0.01213361	1.867912229	0.008082511
Zbtb16	10593225	0.01907708	3.36522716	0.000133824	1.102139792	0.847025509
Cirbp	10364712	0.028623378	3.341491536	0.000845083	1.528600184	0.273342357
Saa3	10563597	0.005463548	3.321906958	0.048283341	12.42045971	6.7606E-05
Fosl1	10460585	0.012505938	3.238883701	0.001200014	1.827922621	0.016078138
Gadd45a	10545130	0.025318334	3.13576874	0.014042529	-1.058509463	0.910859998
Setd3	10402564	7.66E-06	3.133742562	0.002175666	-1.369200129	0.061855051
Gpr56	10574259	0.044467838	3.065616716	0.000276175	1.696126376	0.13444866
5133400G04f	10458285	0.038850215	2.99338947	0.000279916	1.94267783	0.018977965
Klhl2	10578922	0.031947927	2.988283335	0.00032175	1.780117193	0.053320597
Il18rap	10345824	0.005916976	2.982648565	0.002581599	1.511540883	0.047346429
Bcar1	10581890	0.01627113	2.964660015	0.004210996	1.686335977	0.010075074
Timp4	10547022	0.030408256	2.963939729	0.043887733	-1.155643256	0.766489378
Cd40	10478678	0.012745063	2.950439754	0.000421087	1.480515916	0.178628238
Wnt11	10555186	0.015901357	2.905413159	0.006791584	-1.038335975	0.93083786
Gck	10384051	0.005225556	2.884822392	0.010514457	1.300678663	0.074949539
Itgb7	10432957	0.0025919	2.869315612	0.012502034	1.078644904	0.647528707
Got1l1	10577963	0.024398442	2.804298649	0.046884115	1.132844623	0.533348912
2310044H10f	10562774	0.001119666	2.710469299	0.004950193	1.283530282	0.001625332
Gadd45b	10364950	0.009914213	2.678459224	0.024563362	1.17242674	0.248980264
Sfrs5	10396926	0.039836812	2.653825175	0.009231758	1.199666449	0.620039746
Fosl2	10520862	0.028304496	2.60231992	0.00013549	1.931790084	0.000823351
Jph3	10576062	0.017686337	2.593643154	0.012229221	1.310832487	0.18504571
Ptpn1	10478897	0.044208778	2.53053074	0.004514454	4.261171154	0.001910939
Chic2	10530683	0.045866804	2.489003053	0.01633604	1.486664733	0.026026165
Mxd1	10545921	0.014216128	2.474979657	0.002409924	1.481819783	0.039845435
Timp3	10365482	0.029647996	2.453402609	0.007429302	1.046864461	0.903761856
Ier5	10358978	0.021892058	2.444478415	0.011983889	1.371162919	0.066911456
Lrrc56	10558825	0.010941939	2.422645532	0.056098542	-1.148663853	0.540790345
Slco2a1	10588263	0.049128072	2.41056904	0.005138565	1.527640863	0.058666472

Trhde	10372421	0.018860978	2.400441871	0.063116026	-1.264201706	0.51697271
Ythdf2	10516859	0.021073746	2.369457308	0.001608058	1.577928316	0.01003506
Hr	10416302	0.017143976	2.335329846	0.019254284	1.195953806	0.297734006
Anp32e	10494322	0.015921679	2.297057774	0.001415871	1.54542008	0.005714403
Kncn	10507231	0.005868128	2.282661075	0.006973041	1.064207886	0.761843028
Dnajb4	10502823	0.007144008	2.280723683	0.001014084	1.452542121	0.012894521
Fas	10462603	0.015249855	2.252589524	0.047816693	-1.14863289	0.619701613
Ddx19a	10581729	0.013531156	2.250320477	0.001474449	1.556823334	0.000338894
Gnb3	10547858	0.009657254	2.23389717	0.014240161	1.021439988	0.923936063
Trib1	10424370	0.032418385	2.228836997	0.008562016	1.435020266	0.018202995
Asns	10543067	0.022524002	2.215962294	0.008341665	3.742931556	0.000692402
Gp9	10539818	0.009419932	2.210495811	0.068274922	-1.187669425	0.339696316
Rsph1	10449687	0.000257408	2.194085886	0.004637599	-1.100612536	0.428776035
Padi4	10517791	0.013306077	2.193267327	0.098539478	-1.278407993	0.254287307
Ccbp2	10590427	0.011193218	2.18714166	0.014470821	-1.250186504	0.543153662
1190002H23f	10421810	0.012213312	2.154844853	0.06012058	-1.755117153	0.266828091
5730437N04f	10447551	0.000159171	2.149200383	0.000237335	1.059454935	0.583741033
Nfkbib	10561516	0.005117894	2.14819258	0.003936197	1.186751421	0.242191919
Opn4	10418971	0.004153548	2.147219978	0.002729848	1.204380844	0.188758915
Sfmbt2	10469167	0.028402052	2.144914291	0.027627593	-1.050939777	0.876353258
Gcm1	10587293	0.032589506	2.142323971	0.0029281	1.142898011	0.644045179
Vcan	10410931	0.012848505	2.139487129	0.038539227	4.80390737	0.001121079
Zfp326	10523785	0.0164621	2.111404997	0.002492208	1.362991989	0.048398042
Asprv1	10539739	0.040257399	2.11038566	0.002061271	1.377004557	0.125498606
Arpm1	10497617	0.026537012	2.104644649	0.033324607	1.204643839	0.042726722
Ush1c	10563527	0.010486833	2.092189215	0.107684828	-1.317092497	0.123981788
Krt16	10391061	0.008768766	2.084290931	0.011853434	-1.198907206	0.562274639
Bsnd	10514806	0.00063637	2.076072271	0.000313064	1.23000712	0.027569159
Rps2	10442580	0.001100612	2.027769039	7.78664E-05	1.284796618	0.014151277
Hddc3	10554463	0.000383175	2.020208458	0.008236983	-1.159974695	0.231347783
Slitrk5	10416931	0.000430821	2.018490318	0.003099648	1.047589375	0.461581827
Chmp4c	10490845	0.000729606	1.998498744	5.94702E-05	1.12709395	0.308740356
Irs2	10576971	0.009269454	1.994103097	0.009696013	1.0816197	0.628778344
Rims2	10423855	0.030533124	1.99117037	0.045245659	-1.288992022	0.537425624
Rftn1	10451710	3.53E-06	1.98736167	0.001420696	-1.790421032	0.009485663
Rhoh	10522182	0.010954289	1.981406651	0.003041902	1.294603222	0.032007633
S1pr5	10591494	0.018155775	1.976128369	0.004699171	1.1114759	0.616094369
Kctd6	10412650	0.009965051	1.974996368	0.039128148	-1.029391422	0.823698261
9430023L20F	10427045	0.03234052	1.96518709	0.002185585	1.241615858	0.288105449
4933402P03F	10387651	0.038817763	1.963839011	0.000619096	1.367780443	0.086620899
1110020P15F	10383887	1.41E-06	1.928683838	0.000282647	-1.401745506	0.005057682
Ubash3b	10592515	0.030753068	1.925866393	0.017635042	3.100849127	0.000750188
Ankrd6	10511901	0.028896258	1.909782487	0.00187045	1.051223914	0.852815195
Rin3	10397853	0.024643062	1.909756748	0.025547645	1.123707589	0.39764957
Cpne9	10540599	0.046853396	1.899704468	0.065247465	1.05056833	0.77638899
Gfpt1	10539773	0.031522923	1.878450804	0.001661548	2.737201545	0.001413828

Twf2	10588466	0.001845263	1.867257419	0.002410277	1.063669844	0.554418942
Elovl1	10507539	0.045945689	1.859062578	0.034712683	2.879667019	0.000139285
Rod1	10513381	0.031275847	1.854386112	0.00855034	2.754849171	0.000575861
D17H6S56E-3	10444637	0.007175795	1.843221594	0.003357377	1.119641344	0.38378257
Slc38a5	10598507	0.005093375	1.839189328	0.006701592	-1.222164375	0.438935874
Bach2	10503695	0.008077763	1.830270224	0.011725858	1.128703589	0.105032207
Ccdc13	10597854	0.003939505	1.827616451	0.004394802	1.13295456	0.120979533
Grik3	10508052	0.023639871	1.827439107	0.014715252	1.207475011	0.043847994
Cadm4	10550915	0.010743856	1.820942458	0.0354389	-1.017756663	0.878838907
Hnrp1l	10453082	0.028694249	1.793624255	2.72905E-05	1.409686	0.001577848
Ptprc	10358224	0.022754808	1.790666497	0.142984046	4.844059769	0.00661939
4833422F24F	10489701	0.010121986	1.78469804	0.014247501	1.028301504	0.837151047
Akr7a5	10509635	0.004392317	1.78318005	0.057061867	-1.188016016	0.10073618
Man2a1	10446376	0.0160313	1.769728339	0.0065791	1.143981193	0.281175508
Apoa5	10585015	0.010464347	1.764792216	0.002701656	1.049817341	0.767445374
Socs2	10372069	0.038721535	1.758997379	0.002761845	1.090278473	0.696292959
Cdkn2b	10514347	0.038223453	1.758786056	0.007107691	1.19703887	0.226478124
Ebf4	10476108	0.012896765	1.755394144	0.010493804	1.096566521	0.426259723
Il17rb	10418341	0.028887934	1.742602277	0.01885498	-1.346178761	0.465136536
Gabra3	10604961	0.0001967	1.738996753	0.001089028	-1.23887814	0.149884489
Ticam2	10458816	0.020990236	1.738154911	0.001814815	1.112827518	0.52624669
Rnaseh2b	10415791	0.00017601	1.732412848	0.000814221	-1.077356792	0.337774306
Il34	10581664	0.019802795	1.72855519	0.000339822	1.109693389	0.551460927
Nr2c2ap	10572290	0.039122192	1.721779028	0.163804895	3.461208457	0.000670702
H2-Q8	10444821	0.001957248	1.721779028	0.012641206	-1.135509676	0.344137255
Chn2	10538356	0.008544367	1.721126734	0.000954705	1.044855425	0.778362043
Fhit	10417605	0.006526152	1.717043591	0.044548409	-1.102390224	0.328470209
Hopx	10530819	0.001189843	1.699430203	0.004409729	-1.111747292	0.40336637
Emx2	10464391	0.014811066	1.691535357	0.006190631	1.065299352	0.652322063
Msh3	10411019	0.012195794	1.687292391	0.212152923	5.487034577	0.00489665
Ggt1	10364056	0.013723506	1.687083187	0.014002546	1.014337512	0.920040149
Nbl1	10517677	0.016641579	1.679353368	0.036183569	-1.0227534	0.863552316
Cd96	10439744	0.007031407	1.670822976	0.032339175	-1.104180139	0.453363269
Cacna2d4	10541144	0.00224842	1.659919565	0.364540862	-4.943193337	0.016202237
Crip2	10398996	0.00135564	1.659730693	0.000646539	1.073150875	0.202847546
Mreg	10355456	0.028112541	1.650763374	0.046895043	-1.18272664	0.531624046
Tcam1	10382083	0.022050609	1.647031712	0.096559307	-1.294853009	0.328319448
Psmc6	10414288	0.044591024	1.641026743	0.002764339	1.250624376	0.030158552
Ttc36	10592938	0.025232905	1.638902466	0.001574994	1.148470129	0.286957429
Tmem132d	10534002	0.008671759	1.638149093	0.001127348	1.031269691	0.823764584
Ovol2	10488256	0.033832356	1.635463997	0.000833816	1.033861789	0.873527742
Aqp1	10538459	0.020060544	1.61788106	0.091349588	-1.403145334	0.283386961
Lmod1	10350123	0.007300722	1.613930366	0.003190922	-1.022010487	0.877975064
Tbc1d19	10521927	0.024404674	1.611829216	0.038130967	-1.122962693	0.594447331
Rem2	10415074	0.008610683	1.61099647	0.185344789	4.269143529	0.001639221
Stat3	10391301	0.029543342	1.610339372	0.005402653	2.248995532	0.000790384

Rgs20	10352957	0.046675215	1.604084342	0.031934052	-1.003137938	0.98716037
Zfp574	10551061	0.01774732	1.594747849	0.005112462	1.154594827	0.03204935
Gsg1	10548769	0.002989989	1.594204456	0.005013818	-1.148661199	0.381349794
Hapln4	10572282	0.027428023	1.592252226	0.006650838	1.057338021	0.707204377
Zbp1	10490150	0.038645929	1.589216366	0.031547908	-1.023211543	0.903130898
Msn	10600836	0.046468679	1.588478711	0.158350813	3.251434502	0.010138255
Zmat5	10373944	0.041636064	1.587606455	0.05696362	1.032742083	0.758019398
Pou2af1	10585276	0.011866458	1.583071775	0.007184497	1.029951688	0.79194491
Fbn2	10458999	0.037625723	1.581716577	0.148031549	-1.120408197	0.296656334
Lingo4	10494039	0.006537846	1.573072322	0.000736853	1.046543056	0.652921675
Nqo1	10581538	0.039733954	1.567029028	0.097283392	-1.127181998	0.542924767
Gnl2	10508019	0.009543505	1.564733178	0.000685404	-1.022587999	0.882493762
Pcdh20	10421911	0.011803998	1.56359116	0.001992557	-1.000289431	0.998369654
Islr2	10594048	0.041266053	1.563500846	0.034585845	1.098213334	0.173773801
Hamp2	10562166	0.036722922	1.562226169	0.06567822	-1.037374396	0.797692899
Wnt10b	10432267	0.002378722	1.561600947	0.003152472	-1.265604528	0.237731116
Chst8	10562408	0.000372504	1.561241084	0.002981743	-1.123780288	0.102041924
Clic1	10444658	0.037856445	1.556948378	0.021520536	2.790606852	0.015269145
Mdfi	10451604	0.041494821	1.555949245	0.030556904	1.085399889	0.370755873
Marveld2	10411680	0.048647703	1.551832427	0.000144958	1.125510878	0.438615448
Rundc3a	10381574	0.017850831	1.549876578	0.011045192	-1.061361901	0.732975692
Pou4f3	10455335	0.002788576	1.544157595	0.048820855	-1.279677258	0.085621186
Htr3b	10593245	0.000163641	1.53072664	0.015565756	-1.670287751	0.023008617
Vangl2	10360187	0.041268554	1.530224506	0.178821566	-1.347825133	0.302600398
Dmrt1	10462217	0.002392625	1.52812582	0.026035802	-1.210301653	0.136153233
Wnt9a	10376490	0.018579514	1.526449647	0.022223803	-1.196588138	0.446488482
Ubl4b	10501117	0.047931122	1.52357445	0.068082135	1.008718299	0.936540208
Slc7a4	10438189	0.002459959	1.519085775	0.01464133	-1.298374587	0.164612285
Capzb	10509620	0.034729774	1.513162222	0.051515522	1.042220112	0.350501637
Clcn5	10603289	0.037222145	1.512976941	0.093132755	2.972334878	0.015323291
Rbm47	10530269	0.024354782	1.509882901	0.006453927	1.09118992	0.313910924
Myog	10349993	0.025257816	1.507045874	0.058995358	-1.261823391	0.376188639
Prok2	10546695	0.003429544	1.505780694	0.007015978	-1.092965225	0.411367351
Zic5	10422504	0.003755316	1.505601531	0.25105322	-2.386776263	0.034042708
Med13l	10524983	0.040654777	1.504360155	0.077283542	-1.064320999	0.677973832
Aldh4a1	10509790	0.009038577	1.500705731	0.196664422	-1.486059851	0.030668024
Mlh1	10597288	0.009443576	1.50022467	0.034556782	-1.624064096	0.182358598
Ppapdc1b	10571036	0.025336652	1.498923409	0.021906957	2.35811197	0.00435673
N4bp2l1	10535938	0.003484711	1.487050182	0.057965721	-1.269558317	0.075094785
Dusp6	10366043	0.037242974	1.48532726	0.004499809	1.90358743	1.45227E-05
Rtp1	10434773	0.036919707	1.482905503	0.08858024	-1.094938622	0.547412484
Fgf4	10559367	0.023387063	1.479746454	0.001896017	1.023373892	0.860149997
Fgf8	10468070	0.030372208	1.478791169	0.025825316	-1.118216858	0.588921456
Pitx3	10468174	0.001850122	1.476174561	0.003483898	-1.133837063	0.25672111
Tspan33	10536908	0.002992057	1.473591523	0.082121578	-1.35934815	0.040559782
Cyp7b1	10497381	0.00807681	1.473518323	0.068392572	2.637990129	0.000987751

Sox8	10448967	0.044397587	1.469645638	0.004252003	1.062143235	0.646599948
Gabbr2	10512807	0.025315741	1.46951695	0.018756576	1.039928736	0.618992776
Fam83c	10488938	0.007673721	1.467113006	0.01817854	-1.019446925	0.683785534
Insm2	10395827	0.046845245	1.463595279	0.027278761	1.047674095	0.653695671
Nfam1	10430931	0.022624527	1.463558081	0.264078403	3.29646554	0.003991092
Slc2a2	10491171	0.04252952	1.461591349	0.004935516	1.103528075	0.293932318
6430598A04F	10534912	0.046445118	1.460354205	0.038061026	-1.114439527	0.626725109
Cdsn	10444883	0.006741267	1.458646205	0.084431071	-1.229248562	0.071426177
Nfkbie	10445412	0.0141110058	1.455068091	0.004172783	1.01211104	0.89950718
Mmp14	10415052	0.006528089	1.455024807	0.036615106	2.352363891	0.000253709
Apoo	10600797	0.029656115	1.453520506	0.023669398	1.006760801	0.949044527
Foxc2	10576051	0.001796815	1.449973634	0.079625678	-1.396433301	0.020325371
Camkv	10588755	0.00290477	1.449691131	0.003343998	-1.154025862	0.273036759
Nlr1	10592763	0.012405791	1.448277775	0.070132803	-1.141640431	0.214257135
Csf3	10380999	0.042755484	1.447685613	0.101190874	-1.188685634	0.439264289
Adc	10516529	0.026992024	1.447428082	0.049843067	-1.037338444	0.714092094
Tgfa	10539692	0.033419114	1.442228743	0.288684795	-1.453740738	0.114716179
Doc2g	10460291	0.030707229	1.439738784	0.051037727	-1.081985876	0.593288364
Lect1	10421853	0.016018713	1.43673435	0.052231136	-1.071819806	0.402501291
Nrn1	10408689	0.007293315	1.436039069	0.475240185	-2.600594867	0.001228974
Ankrd33	10426991	0.048804697	1.434452305	0.333139308	-1.34346928	0.036847975
Mdga1	10449608	0.001836016	1.431591616	0.21756575	-1.837788401	0.005288775
Vangl1	10500736	0.002328784	1.420107359	0.039411105	-1.424537236	0.080061574
Oit3	10369264	0.020683427	1.41908401	0.18702815	-1.318913546	0.118596272
Morc3	10437023	0.025405219	1.418708094	0.004184491	2.066761146	0.004951939
Npas4	10464905	0.013228869	1.418093345	0.0014179	-1.017420922	0.871209547
Mafa	10429621	0.028248372	1.412965918	0.017345078	-1.046573281	0.741323415
Snai1	10478884	0.009157719	1.412307702	0.130864664	2.497436122	0.000130979
Fbxw11	10375103	0.046823799	1.407280582	0.069654947	-1.114975235	0.55711949
Krt79	10432897	0.011619768	1.39977702	0.098764518	-1.252783109	0.141982693
Faah	10515220	0.019299372	1.398809986	0.135649228	-1.390088434	0.18730428
Rshl1	10550557	0.000533655	1.395788161	0.164826244	-2.726600502	0.016894398
Chrna4	10490559	0.012089364	1.392016842	0.003223338	-1.306570526	0.274767085
Wnt2b	10500938	0.003003067	1.39176841	0.004930137	-1.111640909	0.225194324
Alkbh6	10551865	0.040617491	1.389611566	0.005427805	1.059181626	0.489108371
B930041F14F	10511136	0.003465902	1.38951686	0.096298451	-1.351586017	0.032588395
Lef1	10496091	0.029490213	1.382794401	0.000571817	1.017510254	0.87219371
Rgs19	10490736	0.025228005	1.379717912	0.078148315	-1.100282002	0.36084676
Tjp2	10466745	0.022659979	1.375090591	0.09231698	2.248604605	0.00407879
Rax	10459471	0.026650248	1.373677493	0.053830218	-1.083058455	0.484677823
Sec14l3	10373846	0.041494423	1.368485359	0.377369685	-1.531000761	0.096230884
Fbln7	10475932	0.031362607	1.365923481	0.016537567	-1.103839181	0.555015779
Brf1	10402841	0.041587682	1.362369382	0.059687776	-1.044032532	0.677154199
Chd5	10510725	0.024097377	1.359935075	0.123613679	-1.217919123	0.222819915
Pth2	10552871	0.021938852	1.356836294	0.048538363	-1.14588585	0.361306418
Lypla1	10344624	0.033685036	1.349191893	0.08392862	-1.069526495	0.417437626

Atp8b1	10459421	0.006833192	1.348250705	0.124821822	2.582007211	0.002989728
BC054059	10478109	0.044179711	1.342525974	0.009295431	1.025050509	0.765011435
Hspb11	10506658	0.037904307	1.338150145	0.21499222	2.420765503	0.012530603
Ehd1	10460833	0.037115455	1.338114074	0.03161982	-1.005551287	0.935454541
Frat2	10467650	0.031103125	1.337037565	0.075295079	-1.170909846	0.352275292
4930432K21f	10573332	0.033586865	1.336367992	0.050029011	-1.069440833	0.538345912
Lrp12	10428353	0.028794149	1.332683218	0.023685892	1.834904528	0.001635898
Dleu7	10420672	0.044600731	1.328716513	0.001746985	-1.0164564	0.895049483
Cbll1	10399841	0.017080954	1.327771294	0.152071102	2.290091116	0.003731262
Otp	10406714	0.006977688	1.325417311	0.081919699	-1.171716326	0.001912614
Dmbx1	10515213	0.014680011	1.325231285	0.027710557	-1.081316106	0.334340052
Gstcd	10502257	0.001749735	1.317568325	0.280615419	3.363443186	0.0007695
Nnat	10477986	0.027157591	1.316151745	0.105819656	-1.091331326	0.081327802
Krt15	10391025	0.037707054	1.315602207	0.113203876	-1.195880583	0.317108886
Flot1	10444895	0.027650159	1.312143256	0.007659916	1.779349314	0.002588392
Ccny	10457385	0.010309191	1.310893062	0.105204879	-1.307846264	0.109379019
Tgif2	10477924	0.033519945	1.309231301	0.227168955	-1.432355894	0.187381002
Hoxd13	10472946	0.01614782	1.308618889	0.006023024	-1.036145543	0.588080101
Wsb1	10388938	0.045631176	1.303079817	0.212866023	1.962641493	0.000787256
Wac	10453721	0.036227135	1.301857112	0.004446808	-1.038787098	0.730755615
Lypd4	10560903	0.040429983	1.299638902	0.052272555	-1.063281306	0.540035159
Zfp503	10418038	0.042637358	1.296692743	0.272114107	-1.323143926	0.17140965
Slc16a8	10430467	0.001296602	1.296445596	0.054491411	-1.413072023	0.024366739
Klf9	10462091	0.040042074	1.296022561	0.06536648	-1.559736692	0.254216069
Fam105a	10427918	0.044967079	1.295246484	0.266317641	-1.201544433	0.056864833
Gemin6	10447097	0.014977765	1.291269378	0.306434526	2.617071489	0.005012582
Lad1	10350159	0.038420626	1.290638032	0.388953324	-1.505385868	0.095909095
Ppp1r14d	10486191	0.037452757	1.288473173	0.012867171	-1.07754018	0.560481409
Slurp1	10429500	0.032091321	1.288394136	0.040446212	-1.056287577	0.488934194
Wdr46	10444098	0.049460936	1.288350675	0.046022163	1.885305081	0.015725003
Dnajb3	10356457	0.005347105	1.285502327	0.078656362	-1.239191273	0.03344161
Samd4	10414333	0.00490486	1.283225012	0.015838081	-1.200544738	0.107726129
Ptpre	10558410	0.048701717	1.28070857	0.043372682	1.779231759	0.008402973
Emilin1	10520604	0.033076548	1.280301763	0.199931083	2.029732272	0.004720365
Fkbp10	10381122	0.049253515	1.279450106	0.195057534	1.895448015	0.003190609
Evpl	10393197	0.031416293	1.279269301	0.030548878	-1.066649034	0.480647692
Oxct2b	10507824	0.002114699	1.278985581	0.007919628	-1.238233445	0.056228389
Hn1l	10448803	0.008078169	1.278323813	0.175822226	3.739088626	0.021357515
Snap25	10476512	0.018538214	1.277776679	0.013440618	-1.144351294	0.312852596
Tmem151a	10464914	0.024455354	1.275886504	0.089692507	-1.190991679	0.226917742
Cyp27b1	10366803	0.029283225	1.272423348	0.033591455	-1.041043245	0.419809749
Hrk	10524969	0.006697899	1.269652187	0.066958896	-1.227004041	0.060247915
Evx2	10483789	0.047460158	1.269146744	0.02362905	-1.09041787	0.527997886
Opn1mw	10600317	0.028487463	1.268334254	0.101985893	-1.132765448	0.206879376
Fetub	10434698	0.013034105	1.266953287	0.017631108	-1.185153011	0.214723791
Gabrd	10519124	0.022401119	1.264964298	0.283887291	-1.324627455	0.037029775

Socs1	10437668	0.002331497	1.263485552	0.039866715	-1.371425101	0.045180029
Pold4	10460392	0.019888127	1.262957031	0.248587629	2.036011281	0.000418823
Hoxa10	10544798	0.012741348	1.261848173	0.041988153	-1.147141479	0.146710482
Pnoc	10420853	0.000713633	1.256362008	0.011607323	-1.275248929	0.005522685
Ly6g5b	10450431	0.018006518	1.254384815	0.169912949	-1.261104942	0.089349072
Me1	10595480	0.000168395	1.253367156	0.004221086	-1.463503055	0.007132377
Wfdc1	10575917	0.027127549	1.252259788	0.007144609	-1.043802189	0.510601459
Mapk15	10424756	0.005098747	1.247394959	0.049782037	-1.485326402	0.080784751
Olf1445	10461780	0.012374918	1.246892135	0.019949809	-1.101826195	0.122694125
BC022687	10398920	0.038366661	1.246673203	0.002024615	-1.10391187	0.468341581
Xpa	10512739	0.047256498	1.244995045	0.108531552	-1.1299182	0.327288173
Fam92a	10511617	0.008063671	1.243557601	0.335245711	-1.538310429	0.010226058
Ptprt	10489305	0.024177571	1.243437729	0.108444213	-1.188972214	0.171922574
Dolpp1	10471036	0.021221044	1.242864196	0.118791655	1.771801111	0.000405098
Vsx1	10488497	0.014392205	1.241364391	0.098018774	-1.400871864	0.134117319
Noto	10539588	0.008381886	1.239974112	0.126250017	-1.21492544	0.002712053
Fads6	10392894	0.01442251	1.238147621	0.326628561	-1.560047547	0.056448114
Wnt10a	10347497	0.020599349	1.236298826	0.119398203	-1.236538077	0.145499215
St6galnac2	10393166	0.011443747	1.236014403	0.090969583	-1.223735888	0.080280572
Rab8b	10594645	0.036529748	1.235749795	0.013964221	1.709257789	0.010384669
Rhog	10566132	0.023677024	1.231360618	0.116875161	1.787192455	0.002823243
Ankrd24	10365174	0.041050058	1.230884165	0.043337418	-1.189458552	0.323635066
Nxph4	10373218	0.021606144	1.230291345	0.072050118	-1.578871034	0.16367822
Mrpl14	10445430	0.018966202	1.228041137	0.129023496	-1.17826351	0.064035056
Birc2	10590791	0.031805908	1.224557531	0.087963911	-1.107659063	0.166090969
Bzrap1	10380137	0.018045256	1.22363434	0.14547705	-1.346266631	0.12765489
Kirrel3	10584165	0.013645429	1.222790948	0.142684252	-1.277470521	0.079757053
Dennd2d	10495147	0.045349586	1.222749276	0.101008867	-1.078698072	0.189172236
Cars	10569458	0.036850687	1.221077696	0.105526009	1.713778818	0.005583221
Dupd1	10418011	0.048613126	1.220336627	0.094733678	-1.091156094	0.296666274
Psme1	10415282	0.013245018	1.219439472	0.035238248	-1.192011802	0.135830173
Ly6g6e	10444680	0.020454115	1.21889597	0.003650016	-1.112529943	0.266422344
Tsr1	10378508	0.049193132	1.218043414	0.514477602	2.182984588	0.002851964
Adra2c	10521383	0.018780716	1.217577271	0.018638268	-1.179304821	0.205669862
Phox2b	10530306	0.019299426	1.214855264	0.161597065	-1.206281542	0.055564176
Cpe	10578904	0.023645618	1.211254546	0.147891303	-1.169530576	0.059342967
Rgs9bp	10562486	0.012033753	1.210984165	0.044779342	-1.231482961	0.116747604
Mecr	10508686	0.033946258	1.210759299	0.057239142	-1.113757387	0.248184548
Fam81a	10594762	9.55E-05	1.207958219	0.41036169	-3.737718135	0.003136792
Nfat5	10575160	0.004403344	1.205919273	0.217240884	2.436584068	0.006786521
Aldh1a1	10461979	0.046625317	1.202767573	0.345502226	-1.656401511	0.180334814
Cyp39a1	10445308	0.001862463	1.197785855	0.248300101	-1.780336049	0.018543339
Rbm24	10404904	0.003716553	1.196736059	0.143090233	-1.312960334	0.003582821
Itpka	10475019	0.033274423	1.196618155	0.150624676	-1.15248738	0.103868868
Tnr	10350951	0.03772333	1.195716329	0.027254775	-1.081712169	0.27725629
Calm4	10403281	0.004436998	1.192710024	0.019646921	-1.228107344	0.03198427

Lypd6b	10472022	0.024647068	1.187257882	0.041557535	-1.111773835	0.107959893
Syngn4	10563436	0.042161686	1.185976152	0.196473004	-1.135137189	0.033571122
Tlr4	10505517	0.049662755	1.183121123	0.65325574	2.550342682	0.011652346
Ly6g6d	10450418	0.010248653	1.182943634	0.149074608	-1.237479534	0.01519611
Syngn2	10382980	0.034954146	1.182043667	0.016194357	-1.164857384	0.257610976
Tspan14	10419073	0.024071786	1.18142426	0.295601212	1.737957565	0.000227134
Traf2	10480760	0.004867022	1.181223711	0.307016095	2.093435144	0.001192734
Wnt1	10426637	0.027877658	1.177471113	0.38237255	-1.462454426	0.08821194
Aifm3	10434007	0.005955688	1.175080831	0.382199273	-1.709526357	0.025967048
Slc34a3	10480633	0.047709008	1.174333761	0.42774814	-1.331408546	0.07708615
Lhx2	10471833	0.013774377	1.173417706	0.229445813	-1.357341117	0.058750495
Svop	10532784	0.044402225	1.173349929	0.449254323	-1.365364992	0.067668612
Ap2m1	10434384	0.044570868	1.171759645	0.045264411	1.507235082	0.003319273
Nin	10400805	0.017904772	1.171215588	0.584571879	-1.99708628	0.041739255
Fads3	10461423	0.020568586	1.163344728	0.392316467	1.819581073	0.000829947
Mcam	10584674	0.02180766	1.159408615	0.670001519	2.500369541	0.00032298
Hsd17b14	10553004	0.023598256	1.158401198	0.092905012	-1.307567116	0.14038653
Stx1b	10568298	0.005507941	1.154682863	0.602090452	-2.098497386	0.007247106
Pros1	10436456	0.016918079	1.154668635	0.504188867	2.000454448	0.001041625
4930403L05F	10603738	0.014313395	1.153634861	0.374153093	-1.517538727	0.051938358
Dab2ip	10471677	0.038482632	1.145613183	0.097752834	-1.152199737	0.133912977
Prdm6	10455761	0.049784641	1.142801631	0.504912968	-1.323786075	0.030883289
Chrne	10387909	0.039645806	1.142425431	0.179956682	-1.303038761	0.168945364
Slc34a1	10405448	0.036022083	1.140963389	0.330758416	-1.215955136	0.017766876
Cyp24a1	10490080	0.029970594	1.139551927	0.539620607	-1.646272701	0.076616087
Acbd3	10352281	0.025910283	1.138450435	0.049398586	1.460811096	0.000235838
Capn8	10352416	0.0301333	1.138307234	0.459205055	-1.731733187	0.111112522
Swap70	10556280	0.009766067	1.136540688	0.20532253	1.664472074	0.001356153
Cib1	10564869	0.031436351	1.134901168	0.480223376	1.72935014	0.001740447
Kcna1	10548047	0.018871705	1.132488709	0.43683505	-1.364428379	0.012163015
Bat3	10444719	0.033519939	1.129614099	0.173785771	-1.533998068	0.15160993
Slc25a17	10430711	0.024029959	1.129470559	0.470349565	1.854305422	0.010364366
S100a11	10493990	0.026331053	1.126679751	0.392492463	1.828584759	0.019837826
Tchhl1	10493986	0.048347049	1.126288691	0.075410008	-1.21659586	0.197804142
Hmgn2	10517141	0.049925671	1.12015626	0.269379496	-1.210570139	0.119233238
Zhx3	10489253	0.043245327	1.120140731	0.18955251	-1.273068457	0.157407035
Lhx3	10480912	0.017782452	1.119390442	0.553153845	-1.494034365	0.012681351
Wisp2	10478415	0.027396944	1.11618453	0.260085628	-1.276569622	0.076926104
Ipo13	10515536	0.012012376	1.11587596	0.361273637	-1.667178217	0.063930601
Vat1	10391454	0.018355806	1.114533515	0.234436129	1.702368468	0.015972019
Fev	10355658	0.007745687	1.109878435	0.406500886	-1.468542481	0.017917206
Ciita	10433507	0.010377673	1.108669996	0.225332132	1.566817702	0.000914379
Cfl1	10460616	0.024510819	1.107593378	0.491607767	2.220095392	0.043532705
Trpv3	10378367	0.020470382	1.106345675	0.233032208	-1.218225418	0.011258909
BC006779	10490632	0.029619331	1.10540816	0.46172363	-1.342393374	0.045580352
Polr2h	10434523	0.039083919	1.104794722	0.578451102	1.846214269	0.026689976

Cnr1	10503902	0.004078654	1.102529048	0.173302299	-1.390461051	0.014838094
Mpp2	10391540	0.00270765	1.102436497	0.44627272	-1.515044322	0.000883814
Gm711	10470329	0.016169297	1.099095038	0.179211998	-1.233295571	0.016695869
Cryab	10585214	0.024652348	1.097843356	0.129662351	1.552093586	0.017783307
Casq2	10494804	0.007010826	1.097332782	0.119513835	-1.298944446	0.01463793
Cnpy3	10451458	0.027142624	1.096485956	0.171545881	1.578582142	0.022889409
Lrrc46	10390319	0.037530331	1.095239715	0.449895382	1.616555829	0.021127357
Cpeb1	10565089	0.029916461	1.088704107	0.72698578	1.896366871	0.003093826
Fahd1	10448743	0.03745966	1.08606968	0.517778153	-1.258792074	0.002808263
Grk1	10570379	0.018068316	1.085852643	0.503687639	-1.368247713	0.017669114
Adamts18	10581961	0.007274422	1.085141616	0.873987486	-4.230593295	0.005607828
Sgca	10390090	0.029390718	1.078943179	0.28022743	-1.320133554	0.084333662
Dlgap2	10570450	0.042634228	1.078391976	0.37944364	1.593289395	0.043869665
Prss23	10565456	0.008589909	1.077860147	0.656579478	2.281137377	0.018172066
Irs1	10356084	0.037619386	1.076633086	0.736939991	-1.492631806	0.006555605
Fam125b	10481845	0.003145106	1.073810934	0.677191634	-1.975502949	0.010822379
Foxg1	10395596	0.038939538	1.073438844	0.652419823	-1.437576104	0.05357146
Homer2	10565156	0.002094092	1.072971257	0.350659581	-1.529119788	0.008104504
Lep	10536789	0.018093	1.069455658	0.367629915	-1.275559326	0.013310438
Cdh3	10575034	0.049496815	1.06674351	0.738423153	-1.472658924	0.04355972
Jph4	10419999	0.00883208	1.064921189	0.720290103	-1.801539145	0.019349314
Runx3	10509030	0.009916326	1.064161169	0.688236809	-1.719560648	0.024606776
Mysm1	10514441	0.037352164	1.0620346	0.568938692	1.449686065	0.006521074
Nudt8	10460285	0.045659013	1.061893563	0.585120015	-1.304477898	0.052888938
Txlna	10516666	0.016129269	1.061459996	0.533212816	1.527240572	0.004974208
Plcg2	10575799	0.039134795	1.059188804	0.515359646	-1.290591713	0.053244614
Kifap3	10351140	0.048021464	1.05857057	0.562970376	-1.231471915	0.008646354
Pvalb	10430297	0.031316576	1.058184849	0.617884974	-1.37701092	0.044944472
Edem1	10540493	0.012652136	1.057297713	0.771725083	1.945830218	0.008162705
Rps12	10368270	0.042457914	1.048674296	0.528679132	1.38626285	0.014098978
B4galt2	10515500	0.000689561	1.045831189	0.661934298	2.484421572	0.006782676
Wap	10384212	0.021669878	1.045223041	0.802160095	-1.54736924	0.010469867
Tor2a	10471519	0.012990591	1.043996831	0.73968392	1.598391335	0.002724833
Slit3	10375175	0.049706256	1.042273778	0.668235423	-1.337430394	0.072103493
Hoxc8	10427290	0.049356481	1.040146447	0.808494544	-1.48210398	0.057033997
Zbtb9	10443112	0.000668515	1.036737031	0.84355936	-2.178497312	0.000364826
Elovl6	10495993	0.013034824	1.035536448	0.888991955	2.055669498	0.003081765
Cd68	10387536	0.01812315	1.034298222	0.922055956	2.704763067	0.015204902
Mybpc3	10473814	0.040201719	1.033036515	0.650644709	-1.298137362	0.044376065
Cpa4	10537026	0.009109685	1.027418056	0.94789692	-3.161509014	0.004845296
Rfx5	10494122	0.01419984	1.025996517	0.769921474	1.601123953	0.022193029
Htra4	10577782	0.004165508	1.02415258	0.805571178	-1.657744881	0.011225945
Col4a3	10347807	0.01814892	1.020323519	0.909370379	-1.692255286	0.017920768
Mknk1	10507218	0.0394165	1.015565921	0.872114669	1.440074384	0.0359581
Lrp1	10373223	0.045603033	1.012358309	0.935860303	1.456893638	0.01015459
Ppcdc	10593918	0.043102889	1.007949482	0.916353463	-1.3094471	0.024104612

Atpaf1	10507203	0.046804523	1.007072758	0.94969455	-1.381158365	0.031695374
Gsx1	10527562	0.010493448	1.006815966	0.962993041	-1.78129937	0.019091515
4933426M11l	10396919	0.029497047	1.005697667	0.944079153	1.405069993	0.025756069
Gas8	10576373	0.00802434	1.005336984	0.956782726	1.619474591	0.013006242
1110059E24F	10466676	0.031567354	1.002913142	0.973768231	1.478304364	0.045706965
Chrdl2	10555280	0.027567327	1.002767169	0.988072295	-1.62520683	0.013229994
Itga7	10367440	0.017255078	1.002238189	0.980850759	1.686643911	0.043358855
Nup188	10470973	0.009746499	-1.000196411	0.999053471	1.840864365	0.013725894
Tmprss13	10584870	0.015236146	-1.002953308	0.973932127	-1.907261409	0.05168643
Il13	10385837	0.016700791	-1.003954115	0.979876864	-1.873688483	0.033849011
Traf7	10448593	0.034023523	-1.005076861	0.972218744	1.469784015	0.014052525
Cntn2	10357705	0.002527452	-1.006098577	0.96264347	-2.029526718	0.009132131
Rnf41	10367337	0.009316179	-1.007711119	0.922966553	1.492886457	0.01216515
Fam110c	10395155	0.045030758	-1.008593617	0.887775834	1.279663953	0.022618838
Cav1	10536499	0.009164701	-1.01078769	0.914899618	1.653036221	0.022270273
Trim68	10566161	0.040944757	-1.011981792	0.908540835	1.367621387	0.027722476
Slc25a1	10438262	0.023649772	-1.014421691	0.841523069	1.542251803	0.058548844
Stk16	10347552	0.040239739	-1.015629668	0.860368503	1.363749709	0.042203253
Eef1a1	10595183	0.006432531	-1.019979389	0.61566272	1.371562153	0.003860239
Rpusd4	10584200	0.036739703	-1.021438021	0.895493397	1.472436073	0.015969675
Vps16	10476136	0.046067462	-1.021969164	0.801814638	1.313136296	0.036178225
Krtcap2	10493484	0.007411583	-1.023893622	0.712268727	1.429758682	0.009043165
Galnt1	10396877	0.012736692	-1.024514608	0.767048977	1.402538137	0.009761103
1810020D17f	10565612	0.037968184	-1.024589373	0.814871347	-1.434918866	0.021223164
Hand1	10386110	0.022613943	-1.027560496	0.78043036	-1.652156097	0.039691164
Cdr2	10567564	0.01222263	-1.029203546	0.848493204	1.637260822	0.013769538
Strn	10452918	0.021984667	-1.030596589	0.648426675	1.305822576	0.012083337
Has2	10428707	0.036476952	-1.030817467	0.917780706	2.40611215	0.067803345
Zfp422	10547173	0.02178719	-1.031820251	0.617686501	-1.413137322	0.011956376
Vamp2	10377431	0.022611525	-1.032542859	0.76400309	1.676297639	0.065157171
4930579J09R	10465965	0.019268109	-1.034105468	0.740652536	-1.69256485	0.034004067
Dok1	10545623	0.04593176	-1.036871181	0.894278245	1.694230304	0.012711843
St7l	10495059	0.022079234	-1.039143403	0.668727603	1.471273275	0.050579156
Hdgfrp3	10565193	0.024910694	-1.039862902	0.728617441	1.511495482	0.051430078
1200014M14l	10406742	0.034711394	-1.040391006	0.381887561	1.32871306	0.074648485
Anp32b	10504730	0.039676211	-1.041733802	0.707022269	1.30885384	0.017936151
Ttyh1	10549594	0.012404554	-1.045205532	0.831612876	1.813508282	0.01185013
Olf767	10373610	0.033447616	-1.045297304	0.867100379	-2.557965251	0.056604994
Tcea3	10509204	0.045702361	-1.045878551	0.807437928	-1.678377994	0.028325067
Nadk	10511084	0.007910193	-1.047311666	0.813106016	1.820108136	0.007158795
Sf3a1	10373873	0.024480883	-1.047970666	0.79163246	1.718889337	0.046538217
Tmub2	10381567	0.048055835	-1.048623416	0.723992945	1.404363754	0.063158406
H2-DMb2	10444236	0.035808018	-1.051374512	0.712246923	2.502511445	0.116757499
Tnfrsf11a	10349051	0.011182698	-1.053369149	0.697548971	1.488528317	0.006484392
St8sia1	10549162	0.016828641	-1.054045962	0.54459391	-1.436858838	0.000187046
Stk39	10483381	0.004901184	-1.056550393	0.442002999	-1.518671117	0.000166556

Arhgap1	10473965	0.007421183	-1.060337348	0.347344325	1.476246187	0.029513659
Lemd1	10349761	0.012414818	-1.061288335	0.340888949	-1.436926897	0.00066375
Asf1b	10573261	0.009080265	-1.0615581	0.77685099	1.886758796	0.012096049
Iqgap1	10565018	0.040319388	-1.065048791	0.699499086	1.431830734	0.039693404
Lrrc33	10439058	0.042919096	-1.065273098	0.646599964	1.365800405	0.047154599
Il6st	10407173	0.019899919	-1.066221737	0.642042051	1.430777332	0.016752893
Hnrnpm	10450006	0.013493324	-1.066834703	0.134926199	1.26618364	0.01632387
Lsm14b	10479297	0.04036334	-1.068822454	0.723433178	-1.613164244	0.001891879
Rhof	10533603	0.048971071	-1.069828839	0.585911131	1.412765156	0.103201934
Tmem194	10366983	0.033032953	-1.072457146	0.751661038	1.851318777	0.068757557
Cd93	10488382	0.010199042	-1.075385681	0.518618793	1.422876059	0.011771703
Pcgef1	10539310	0.000838401	-1.078723411	0.601884748	2.515209084	0.011180619
Ddr2	10359929	0.049640481	-1.079800969	0.635591617	1.331621782	0.022638674
Fes	10564938	0.038622983	-1.080113809	0.380950723	1.22913496	0.036399724
Aatk	10393668	0.027008848	-1.081128857	0.235250405	-1.411431478	0.001832112
Prdm1	10368970	0.038563041	-1.081859638	0.679365421	1.422723745	0.013962202
Tubb2a	10408610	0.02771346	-1.082142132	0.786587457	2.338545771	0.062693279
Cryba4	10532517	0.046379143	-1.085456316	0.559433536	-1.507683218	0.002792454
Tmem179	10402761	0.004037013	-1.088164499	0.148507345	-1.612240163	0.002058079
Slitrk2	10599880	0.028965681	-1.090600122	0.159832131	1.217274421	0.055732134
Rspo3	10368495	0.018363809	-1.092207631	0.122123007	-1.459762647	0.002934828
Sertad4	10361186	0.018905965	-1.097309119	0.673031559	1.560591917	0.001629393
Armc6	10579209	0.021888947	-1.0978683	0.614850158	1.748116904	0.06160315
Crtac1	10467749	0.005832009	-1.099017988	0.472670906	-2.018404041	0.008909904
Nup43	10361651	0.003182599	-1.099259246	0.38783291	1.468003085	0.003254985
Zfp259	10585022	0.043456008	-1.099420536	0.674092909	1.470673166	0.018383356
Pdik1l	10517243	0.001635367	-1.100874492	0.430915567	1.761783525	0.009886598
Shox2	10498568	0.042255314	-1.101740491	0.399702052	1.245051618	0.051125836
Best2	10580286	0.01829429	-1.101821103	0.73948194	-2.421067553	0.008381227
Rp2h	10598839	0.009817619	-1.103261239	0.296962629	1.380161091	0.028805396
Man1a	10369154	0.008965016	-1.103853209	0.421779237	1.444933737	0.017769107
Dqx1	10539295	0.041700027	-1.10980843	0.356057583	1.304807217	0.110277413
Trim47	10393106	0.044388808	-1.110951285	0.69471925	1.65112575	0.046639599
Cobra1	10480605	0.03249357	-1.113632873	0.146285429	1.230857147	0.106537073
Car14	10500283	0.044408865	-1.114334388	0.36983998	-2.199518571	0.074807836
Usp42	10535477	0.043872829	-1.114768046	0.569945287	1.353600702	0.017374882
Nt5dc2	10413710	0.004488044	-1.115216329	0.165132163	-1.616821039	0.000173595
Rapgef1l	10381049	0.030346057	-1.119176226	0.348744277	-1.525636043	0.000107208
Zdhhc9	10604380	0.018838987	-1.119941791	0.493312137	1.464772979	0.0319208
Zbtb7b	10499612	0.023171759	-1.130172769	0.351084555	1.548804447	0.098679726
Sf3b3	10581674	0.027134423	-1.131124971	0.196728851	1.219040593	0.066034265
Galc	10401968	0.029931176	-1.13586129	0.405115523	1.351810101	0.06173736
1300002K09F	10504582	0.033203261	-1.140495783	0.158572974	-1.594978157	0.011701839
Zswim1	10478590	0.025814374	-1.140653021	0.316761834	1.518678689	0.11237137
Uchl1	10522208	0.01829679	-1.142301378	0.057576648	1.296197499	0.111021115
Laspl	10380823	0.034709264	-1.143915115	0.332278688	1.510442921	0.137334666

S100a13	10493789	0.046517241	-1.146259216	0.162429761	1.226336584	0.187757915
Tmem138	10466000	0.017220522	-1.147788374	0.239923591	1.631259911	0.099529628
Zfp36l1	10401238	0.018542714	-1.148218071	0.177452634	1.304453535	0.083973022
Cap1	10516051	0.025400679	-1.149384965	0.525290257	1.541821589	0.039432629
Qpctl	10560434	0.008556762	-1.150835086	0.433876058	1.610291889	0.023479517
Vsx2	10397257	0.046797735	-1.157685463	0.281094356	1.177439828	0.048330193
Ypel2	10389581	0.01880673	-1.159082026	0.126055394	1.250776484	0.089824298
Sigmar1	10512308	0.03347181	-1.160104688	0.482604078	1.523011322	0.079478102
Inha	10347669	0.009222602	-1.162849991	0.098964286	1.280043939	0.048532967
Ppp2r1b	10585249	0.004983943	-1.164117486	0.232436099	1.53847698	0.033701023
Man1b1	10469987	0.028369348	-1.165443275	0.197841191	1.280750177	0.124282255
1600016N20F	10569085	3.82E-05	-1.165751269	0.324772351	-3.248724341	0.000143245
F3	10495675	0.001485193	-1.166879026	0.15341206	-2.175914196	0.00283915
Dlat	10593367	0.029903931	-1.168230536	0.64032109	2.003924744	0.051367522
Hmbs	10592816	0.001745884	-1.174478795	0.039807235	1.381014053	0.01819393
Tcirg1	10464529	0.011311092	-1.175455291	0.042778123	1.257140299	0.089544211
Hps5	10563615	0.04815111	-1.178212693	0.245173466	1.440804075	0.201472815
Tnrc4	10494069	0.028175283	-1.182896078	0.059910634	-2.324311345	0.047696276
Zfp316	10535435	0.003140475	-1.183013606	0.496580253	-2.791357034	0.001147215
Alcam	10439895	0.038113926	-1.183743937	0.432090655	1.359170709	0.044600947
Bnip3l	10421003	0.027558779	-1.183978186	0.037076325	1.10455544	0.126125974
BC004004	10443482	0.047232335	-1.188738733	0.079055595	-1.523198715	0.000620069
Itgb3bp	10514650	0.048299122	-1.190997182	0.520516836	1.61770663	0.107897195
Lrrc2	10589685	0.03330086	-1.192227181	0.048199331	1.169184412	0.236611805
Klk8	10552500	0.039266176	-1.194562404	0.050853611	1.14717682	0.272104716
BC023882	10529344	0.029092954	-1.195297717	0.181553721	1.172809658	0.056797592
Ankfy1	10378126	0.012736355	-1.198575007	0.001338738	1.244865437	0.152267776
Grk5	10464425	0.021243495	-1.201862146	0.501817689	2.154582488	0.081854344
Tgfb1	10551185	0.016705537	-1.205602477	0.322502219	1.339637677	0.010278946
Hcn2	10364478	0.001994084	-1.207818213	0.254286436	-2.600621906	0.00315752
Cnot6	10385557	0.005942305	-1.21175805	0.016245379	1.318712437	0.086502009
Usp37	10355582	0.048531525	-1.212646248	0.267778506	1.191651255	0.103054775
Lyn	10503098	0.004269384	-1.213276001	0.035250441	1.420164232	0.065283042
Whsc1	10521136	0.023820371	-1.214849183	0.030762263	1.185081819	0.225114807
Ccdc94	10445983	0.037042091	-1.218498475	0.145354731	1.185338317	0.200824861
Rnf219	10422185	0.002085311	-1.21969182	0.193391449	1.69127743	0.023044583
Lin9	10352267	0.013760115	-1.221729587	0.270688187	1.387918961	0.041809833
Adam19	10375402	0.017696816	-1.222628507	0.418373579	1.557967351	0.028876274
2410131K14F	10524973	0.014948822	-1.227991579	0.260584873	1.305526733	0.013334521
Snx30	10505224	0.017059974	-1.232360347	0.229368345	1.349906204	0.074283832
Atf5	10562905	0.038610381	-1.235495709	0.138837433	1.179793564	0.230508771
Anln	10591781	0.021886902	-1.235816893	0.329317533	1.458238469	0.071618889
Tbcc	10445629	0.008118871	-1.23672094	0.165050977	1.331137867	0.037585876
Frmd8	10465246	0.001421756	-1.237751474	0.334940464	1.823597181	0.001592106
Abi3	10390186	0.019144879	-1.238609238	0.372918972	1.471556906	0.029756981
Nrp2	10346843	0.008307923	-1.238964914	0.07921108	1.367557349	0.094163028

Nfic	10371176	0.017035725	-1.243876569	0.01525759	1.165657001	0.23531399
Eif4g3	10509463	0.034144182	-1.243929739	0.038663887	1.063127774	0.369140755
Cachd1	10506225	0.017910487	-1.244491751	0.000132533	1.457551305	0.186821599
Nup85	10382542	0.008176931	-1.244629776	0.028345603	1.292957844	0.121098931
Nucb2	10556583	0.021308573	-1.245112989	0.103895697	1.407116391	0.171502175
Atp1b3	10595793	0.009852901	-1.246382317	0.249472755	1.3609839	0.010991533
Fli1	10592067	0.034132877	-1.246499155	0.010835455	1.157448575	0.364131183
Tubgcp4	10475293	0.016343178	-1.247157208	0.052535571	1.178836252	0.173343509
Efemp2	10460603	0.044802072	-1.247568977	0.309354793	1.570924396	0.188925854
Praf2	10598403	0.006069808	-1.25544457	0.258335988	1.896857979	0.05338907
Zbtb25	10401063	0.023439256	-1.25576804	0.076862595	1.200259759	0.218082521
Alms1	10539617	0.030420264	-1.256052413	0.423422612	1.43860614	0.010716921
Rnf207	10518909	0.039795027	-1.256538608	0.357575236	-2.063313919	0.000940185
Mettl6	10418720	0.029203352	-1.258131308	0.086529289	1.134096444	0.241225988
Ipo9	10358064	0.012809214	-1.259303143	0.039652869	1.185521296	0.166699646
Ets1	10584142	0.020945137	-1.261952259	0.235862468	1.415471466	0.111698961
Parp3	10596492	0.021020372	-1.262357028	0.107399801	1.160257481	0.128447775
Mbnl3	10604528	0.034742286	-1.262709994	0.586919705	-3.034951229	0.002314596
Gm527	10395978	0.011723946	-1.263584811	0.043235126	1.170441233	0.144773566
Tmod3	10595000	0.007973661	-1.264041714	0.064628504	1.234971208	0.085220036
Cuta	10449295	0.041413662	-1.265537274	0.218879195	1.158533691	0.059991419
Ggta1	10482059	0.00493938	-1.265632016	0.41131301	2.125908249	0.019853489
E130309D02f	10535449	0.003600987	-1.270562882	0.015527346	1.172338705	0.04591944
Usp11	10527624	0.035970228	-1.273831246	0.446655088	1.541289996	0.046203493
Arhgef2	10493267	0.009895271	-1.286793276	0.130837894	1.295298175	0.070202777
Cdk2	10373530	0.023401533	-1.28985301	0.172926164	1.211143659	0.094361963
Astn2	10513776	0.033838113	-1.290318996	0.084549034	-1.869264282	0.003949836
Igsf3	10494781	0.002036317	-1.293969998	0.096935591	1.411050055	0.01941049
Cacnb1	10390542	0.041932766	-1.294576302	0.018572925	1.065781233	0.610033466
Stx4a	10557793	0.009061623	-1.29476139	0.015353421	1.065026381	0.044457081
Itm2a	10606369	0.018521404	-1.294934287	0.073720806	-1.931428584	0.002014444
Cyb561d1	10501282	0.014174229	-1.297046318	0.088522172	1.161021751	0.097777818
Gata3	10479981	0.003817991	-1.300600905	0.01357208	1.383005283	0.101814644
She	10493604	0.049741113	-1.301635948	0.00658901	1.017169893	0.875327788
Gpr3	10517005	0.000357725	-1.304680604	0.015730042	-2.44118224	0.000525982
Fryl	10530563 10530592	0.017867561	-1.305693853	0.126229142	1.171532119	0.073367177
Fn1	10355403	0.040385558	-1.308082318	0.329224803	2.543263013	0.174229442
Pde1a	10484283	0.00311865	-1.309946396	0.013195319	1.577126446	0.084686931
Ctnnd1	10484402	0.017424363	-1.316397706	0.062034151	1.155019066	0.236478997
Mkl1	10430693	0.023568427	-1.319828064	0.34717761	1.657152838	0.088361528
Cdan1	10486595	0.001831263	-1.320550982	0.013462345	1.197672394	0.041444249
Arid4a	10396205	0.008397	-1.321738401	0.031414118	1.3282474	0.160174512
Mdc1	10444911	0.001126725	-1.327380206	0.124805381	2.194955463	0.029850188
Dock1	10558345	0.007690526	-1.327547012	0.048340269	1.145707948	0.084711098
Lmf2	10431528	0.045486604	-1.327848867	0.008288991	-1.007352805	0.937875058
Il20	10357562	0.025294083	-1.328201879	0.055657467	1.095612611	0.384387181

Abca7	10364601	0.013058318	-1.329867233	0.063545124	1.132770465	0.150165841
Pdgfa	10535043	0.009084312	-1.332137806	0.09082275	1.214452306	0.074858868
Rgs6	10397030	0.014301893	-1.33222476	0.030209597	-2.139463031	0.006089326
Mgll	10539894	0.035436976	-1.333246308	0.005719423	1.134797596	0.5055039
Tmem80	10558872	0.03326024	-1.334323361	0.029732278	1.0705422	0.582891331
Zmym2	10415576	0.045516855	-1.334357582	0.081761099	1.046020651	0.580866777
Tmem104	10382470	0.000178526	-1.334389646	0.008385589	1.623590721	0.016764601
Mrgprf	10559385	0.021861996	-1.339186293	0.013870682	1.053541963	0.607505564
Ski	10519105	0.047299628	-1.339895047	0.0246427	-1.02361096	0.716680689
Fscn1	10527158	0.001835404	-1.342034414	0.138574629	2.016072471	0.037012165
Fbn1	10487040	0.036029687	-1.345268408	0.076426357	1.553754886	0.259058364
Smg5	10493210	0.022673614	-1.346956568	0.269632924	1.378983844	0.058183417
Fam13b	10458098	0.019635111	-1.35250163	0.229160269	1.478165014	0.115512254
C1galt1	10536369	0.007957406	-1.354214245	0.050104387	1.160377318	0.128201111
Ywhaq	10399629	0.043125762	-1.357689271	0.127879637	1.146990413	0.370300919
Spsb4	10595848	0.002302436	-1.358235207	0.310135749	-7.425560869	0.010314272
Sh3bgrl3	10517169	0.012842567	-1.358458036	0.28665953	1.987823962	0.084996638
Lin37	10561994	0.014123056	-1.358849385	0.128256516	1.259398142	0.116937902
Slc39a13	10484927	0.015298562	-1.359457689	0.050955273	1.322268353	0.225168563
0610007P14F	10401667	0.033227701	-1.360265562	0.046779802	1.142268388	0.450814701
Trove2	10358379	0.041813919	-1.361367138	0.023991223	1.19818246	0.452948048
Slc30a1	10352777	0.031714166	-1.363951383	0.020015695	-1.031798398	0.430543231
Rft1	10413559	0.001994589	-1.373599509	0.00132218	1.122951945	0.173055721
Icam2	10392177	0.014923449	-1.376162762	0.183069052	1.478081229	0.117450251
Cbx4	10393620	0.038117185	-1.377709452	0.052378478	1.057924496	0.645101211
Adcy8	10429029	0.034905525	-1.380061443	0.014802572	-1.043845148	0.466217911
Rpl36a	10601755	0.040456042	-1.381435624	0.004946778	1.037801721	0.810879431
Psmb10	10581378	0.045566287	-1.384052578	0.002015661	-1.10710502	0.063859722
Gas2l1	10383932	0.026732935	-1.384408784	0.236298496	1.607260007	0.163180793
Braf	10544219	0.047671788	-1.385111754	0.009038487	1.022156901	0.884474396
Kcnq5	10353460	0.003374222	-1.386045638	0.03905315	2.416544755	0.072603857
Stk10	10375083	0.012024375	-1.390981999	0.069885334	1.176528145	0.190792561
Far1	10556491	0.022685092	-1.391100836	0.134833227	1.466016153	0.204341371
Rabgap1	10471784	0.044876273	-1.394681366	0.078048126	1.04609783	0.674652328
Adcy5	10435388	0.029076336	-1.395410044	0.091395992	-2.113075347	0.000760481
Elavl1	10576873	0.013487401	-1.396650565	0.004414048	1.160554638	0.40406318
BC031748	10601915	0.02019439	-1.398039381	0.218423236	1.318467186	0.055566818
9430070O13f	10359136	0.023132034	-1.401329572	0.002662604	-1.020553003	0.830137652
Myst3	10570875	0.039476351	-1.401354216	0.014305848	-1.038889622	0.664226096
Ccdc47	10392087	0.010380707	-1.40154472	0.017395425	1.07874709	0.449598624
Slc17a7	10552857	0.000954487	-1.403707653	0.073482304	1.553018483	0.022013431
Rai2	10603000	0.036522884	-1.404477325	0.028578692	-1.898276305	0.000201931
Ctbp2	10568605	0.002212447	-1.404627011	0.005694376	1.061075024	0.035146419
Irx2	10406005	0.012970701	-1.40700098	0.019705715	1.10991049	0.432156671
Dazl	10451721	0.048861796	-1.412065435	0.037195175	-1.03065354	0.72007088
Akap10	10386824	0.014179964	-1.413284489	0.017394835	1.119247463	0.446159813

Lphn3	10522749	0.020293408	-1.414793463	0.030837381	1.065209721	0.587762505
Zfp300	10603887	0.01433671	-1.421757639	0.027297526	1.010766672	0.792069427
Aftph	10384555	0.046443774	-1.424792671	0.003097055	-1.122392028	0.092902955
Fam122b	10604620	0.036137227	-1.430636016	0.096592348	1.289936458	0.349566392
Plcb3	10465521	0.031654741	-1.433494795	0.021123867	-2.185883734	0.006518638
Bms1	10547251	0.011527206	-1.433714403	0.009277357	1.197680141	0.357650585
Mmd	10380289	0.024131175	-1.436057982	0.005527847	-1.052441954	0.53188514
Ints4	10555063	0.031028309	-1.439566936	0.023069953	1.094167291	0.62058256
Pdcl	10482139	0.039007017	-1.439691798	0.076522687	-1.001813066	0.94730562
Xrcc6	10425632	0.030823339	-1.443316024	0.032755428	1.030565832	0.809838221
Tmtc3	10372121	0.023720104	-1.445347103	0.021287078	1.190667564	0.441215698
Sema4b	10554375	0.005137486	-1.446361891	0.032074176	1.138221948	0.180727723
Ireb2	10585444	0.048654255	-1.446931542	0.03160513	-1.060655747	0.448815203
Vps13c	10586616	0.014038816	-1.447333301	0.015585317	-1.029375087	0.406542133
Pts	10593325	0.012466586	-1.454700567	0.150195791	1.680338887	0.132985263
Josd1	10430593	0.017651445	-1.455202574	0.017154514	-1.046566028	0.152692169
Prpsap2	10386775	0.004747501	-1.455986185	0.090619988	2.047412316	0.087690351
Adam10	10586844	0.023315434	-1.458292603	0.005321751	-1.021062925	0.854805212
Chml	10360460	0.039492227	-1.461203047	0.067678786	1.001394197	0.984865063
Nkx2-5	10449292	0.042397706	-1.467192666	0.0007777081	-1.140180052	0.143385898
Edem3	10350646	0.029725315	-1.468651275	0.050293918	1.097224665	0.576355896
Mfap4	10376778	0.024853186	-1.469301025	0.056742539	-2.337951497	0.002266022
Nckap1l	10427336	0.010431586	-1.471486868	0.040139032	1.6003787	0.183302898
PolS	10410435	0.041915425	-1.472085893	0.003276416	-1.124098836	0.192236934
Dgcr8	10438313	0.036742288	-1.473651673	0.159926342	1.283466424	0.296709261
Polh	10451225	0.003248538	-1.477176886	0.16353155	1.97098381	0.046467225
Deaf1	10569134	0.025096492	-1.477541514	0.027773065	1.026884081	0.832216567
Pcdh17	10416700	0.046880544	-1.479507148	0.056326148	1.031105296	0.836962198
Trim3	10566488	0.006569325	-1.48246016	0.016123815	1.045328702	0.560265079
Mrpl21	10460151	0.032559584	-1.483088244	0.040742357	-1.021838124	0.788796293
ErbB2	10380896	0.002909185	-1.485469689	0.026564489	1.233579618	0.142808949
Mylk2	10477206	0.002803062	-1.486960853	0.051010485	-2.700609415	0.000117083
Donson	10440953	0.031066785	-1.487960952	0.012702757	1.325304008	0.402587762
Dgka	10373542	0.014721845	-1.490430957	0.00058323	-1.098901188	0.211247626
Tbc1d1	10522024	0.041180783	-1.494897603	0.159690494	1.216685814	0.336724585
Zfp161	10446581	0.026509672	-1.496980055	0.068362341	1.03384268	0.669951336
4933427D14f	10388132	0.005413561	-1.500160298	0.102432862	1.53398212	0.092968948
Pcsk7	10584954	0.015091355	-1.501785049	0.08822878	1.171692412	0.2356487
Ccdc58	10435489	0.046051861	-1.507860886	0.066006281	1.124125674	0.601369118
Racgap1	10432511	0.012555591	-1.508210013	0.041208634	1.161722907	0.369491739
Mark1	10360863	0.048285575	-1.512465654	0.054912577	1.002669202	0.984536902
6030458C11f	10427849	0.013016657	-1.513003741	0.029044921	1.088043825	0.534079781
Alkbh2	10532802	0.019165764	-1.518020914	0.012270857	1.125482272	0.565810954
Nrk	10601942	0.0465113	-1.522182845	0.074612484	-2.910714489	0.019494997
Phf6	10599612	0.030819829	-1.522536846	0.004674774	1.130140688	0.626039998
Samd5	10367772	0.039049975	-1.525855489	0.00337666	-1.155926767	0.11601445

Csk	10593966	0.007851193	-1.534321815	0.045548872	1.190679851	0.259757145
Zfp143	10556246	0.033346486	-1.536067556	0.107752768	1.219421312	0.393584526
Vamp4	10351119	0.012139382	-1.538555692	0.001587748	-1.131443858	0.03592306
Myo1d	10389025	0.006660779	-1.542495912	0.063793905	1.141962062	0.058997016
Snx33	10593878	0.036092853	-1.545642498	0.021445352	-1.046578118	0.721105933
Astn1	10350896	0.009745233	-1.547470242	0.06562439	-2.611870437	1.3288E-06
Rqcd1	10347386	0.022127583	-1.555535057	0.145601386	1.211163756	0.153901429
Ldb2	10529875	0.035272319	-1.560069174	0.074973377	1.103876162	0.595583258
Atxn3	10402249	0.003520834	-1.563844669	0.05017814	1.235629883	0.102230864
Nrarp	10469936	0.009501171	-1.565179732	0.023597459	1.137226797	0.444556708
Pgm2l1	10555303	0.001234569	-1.565677057	0.011411755	1.172194831	0.159328604
Ick	10587299	0.002768903	-1.568276564	0.016825933	1.107333981	0.286334778
Zfp341	10477557	0.043244905	-1.568282	0.007502271	-1.14925717	0.199698051
Kdr	10530692	0.0094636	-1.569552282	0.002822921	-1.00461577	0.971068594
Rspry1	10574184	0.006497656	-1.569618157	0.017650298	1.056937005	0.599759097
Dpysl3	10458663	0.007775131	-1.573543068	0.047502669	1.276219663	0.239144691
C230081A13F	10593856	0.002202557	-1.576696521	0.010257378	1.079417763	0.376682381
Rbm4b	10460461	0.030217526	-1.577653083	0.088590343	1.046819956	0.618425918
Clcn1	10537742	0.027873795	-1.578976829	0.036432787	1.157958327	0.548689306
Bmp1	10421361	0.002216109	-1.583769324	0.015586029	1.2342004	0.197008472
Tfdp1	10570373	0.04633364	-1.584517215	0.07148792	1.005414221	0.968219813
Myo1c	10378697	0.011673155	-1.589002188	0.021766689	1.109828433	0.544958937
Leprel1	10438753	0.015562077	-1.596171988	0.035637054	1.003961267	0.963531629
Zfp449	10599686	0.01267452	-1.597327346	0.110958974	1.420307522	0.182823281
4933433P14F	10398124	0.040844862	-1.597482359	0.119699259	1.091294134	0.536225426
Myo1b	10354432	0.010386358	-1.602932121	0.017784498	1.069590025	0.653425203
1700106N22F	10447275	0.003052504	-1.604332678	0.062863403	1.510661054	0.094898178
Zeb2	10482448	0.003381662	-1.607727985	0.032552378	1.499068872	0.143459465
Slc6a20a	10597960	0.039636939	-1.61324438	0.000626783	-2.391694852	0.006619802
Arrb1	10555235	0.006563165	-1.613391046	0.031068447	1.226474885	0.296255889
Fndc3a	10421488	0.011287339	-1.615245829	0.088155655	1.147779092	0.097579139
Purg	10571241	0.028000341	-1.616342946	0.084745055	1.026585176	0.675834648
Gna11	10371230	0.006710747	-1.619041538	0.000799298	-1.16251151	0.010767652
D0H4S114	10458046	0.045336177	-1.621840812	0.007327132	1.048423147	0.856926419
Lrrc48	10376579	0.005791296	-1.622055669	0.059131565	1.213762932	0.163185946
Casp9	10510034	0.025075912	-1.622373322	0.02519255	-1.038842301	0.757069809
Tbc1d24	10448459	0.02801097	-1.625891329	0.011608112	-1.011925678	0.947299296
Sema6a	10458843	0.040733392	-1.626112043	0.00830429	-1.104568053	0.51904188
Rsf1	10555089	0.01484442	-1.627130541	0.027377887	1.038101693	0.788741996
Rgmb	10448081	0.042493235	-1.627863803	0.00421989	-1.173595753	0.218808484
Hey2	10368556	0.021252284	-1.628202343	0.022298844	-1.057251706	0.589021865
Mier1	10506397	0.007961361	-1.629259793	0.034791705	1.126885204	0.410328196
Ssbp2	10406551	0.040351403	-1.62947673	0.028544032	-1.146897994	0.021161908
MI11	10592942	0.030417927	-1.633285791	0.039708012	-1.083697687	0.181879872
BC028528	10500276	0.017638632	-1.638102413	0.050770497	1.270447419	0.377202252
Stk38l	10542757	0.035304099	-1.639334203	0.26827928	2.002547783	0.193882249

Rap2b	10492335	0.03338458	-1.645593879	0.071109597	1.143233423	0.566708248
Robo1	10436519	0.006211705	-1.646685453	0.009554316	1.292982029	0.320662753
Rock1	10457429	0.000803687	-1.650237119	0.001170064	-1.029697687	0.491687856
Myl1	10355259	0.007464898	-1.657006072	0.250279222	2.823614889	0.067549635
Pdgfrb	10456046	0.000212999	-1.657315571	0.000190686	1.039369287	0.51922869
Gbf1	10463557	0.024708524	-1.658612266	0.018733062	-1.084920586	0.474912595
2810006K23F	10525726	0.016265726	-1.659653037	0.00289187	-1.173951928	0.088297635
Rasa12	10359235	0.020183763	-1.672571224	0.001511917	-1.184941055	0.139479046
Nr2f6	10579479	0.030398691	-1.67560644	0.010260713	-1.204749609	0.018160022
Ctcf	10574812	0.005798721	-1.677428311	0.003039684	-1.144273445	0.02047706
Arid3b	10594001	0.004494447	-1.679738516	0.039960863	1.971914046	0.128051404
Alg6	10506154	0.011082284	-1.685862257	0.115424493	1.3498602	0.14672274
Traf3ip1	10348600	0.003733406	-1.68835701	0.014787781	-1.018672621	0.601205308
Snx21	10478580	0.040347581	-1.688701628	0.001050775	-1.264907793	0.059263038
Nrp1	10576639	0.00644473	-1.688883198	0.018439337	1.052706552	0.685881195
Arap3	10458498	0.005231913	-1.693882819	0.01160588	-1.053794608	0.356971704
Madcam1	10364444	0.02753459	-1.69485674	0.126633641	1.26777905	0.332046386
Ankib1	10527896	0.023415394	-1.697076797	0.024553437	-1.099643815	0.301402034
Eif2ak3	10538939	0.019783091	-1.697860759	0.024437564	-1.026710895	0.847343367
Hnf1a	10532907	0.035702385	-1.7023724	0.014184335	-2.657009402	0.003071377
Suv420h2	10549700	0.035038948	-1.703415048	0.040794512	-1.07734891	0.502983552
Tmem41a	10438585	0.011149806	-1.711465514	0.014373222	1.120519517	0.597006631
Pign	10357008	0.002931655	-1.714260866	0.010282068	1.659845418	0.160270189
Paqr4	10448350	0.01790717	-1.714502491	0.000432485	-1.237874451	0.061923781
Eef1g	10461365	0.012066922	-1.715318725	0.011394925	-1.068788708	0.558531689
Arsa	10431601	0.006755601	-1.718719367	0.001520765	-1.057461643	0.678740748
Pdzd8	10468789	0.003811716	-1.723521546	0.001158643	-1.182851803	0.003162549
Zfp318	10445531	0.037154876	-1.72583854	0.010002285	-1.204275802	0.119630698
Casp2	10537728	0.030041138	-1.727811836	0.043178196	-1.075851449	0.432525972
Mis12	10378024	0.001103834	-1.727856415	0.05032138	1.386133937	0.027298749
Pdcd11	10463751	0.003825758	-1.728483301	0.071775287	1.274015944	0.048937667
Zc3hav1l	10544084	0.020770267	-1.729354136	0.001739029	-1.221021741	0.093030695
Olfml3	10500808	0.013062206	-1.729404082	0.039517634	1.177263011	0.4641154
Dip2b	10426835	0.025137641	-1.73012125	0.005004236	-1.267277281	0.001252786
4930402H24f	10487748	0.030490251	-1.733230264	0.013797255	-1.081795899	0.642955567
Psmg1	10441107	0.044019154	-1.737786483	0.001021612	-1.10941246	0.638388959
Bcl6b	10387797	0.001652902	-1.738294974	0.024598478	1.416024113	0.134474759
Prps2	10607877	0.037643994	-1.746976256	0.039583841	1.280024716	0.521337201
Thoc2	10604248	0.021818183	-1.749020721	0.02879105	1.06608036	0.767160267
Mospd2	10607774	0.045382677	-1.754497811	0.014942594	-1.083799418	0.696140729
Pygo2	10493530	0.000795268	-1.761081487	0.053010976	1.516266488	0.02518155
Irf3	10552812	0.019281641	-1.762942664	0.034352957	-1.01347777	0.922392814
Caprin1	10485514	0.038063986	-1.77198022	0.007450423	-1.174909119	0.323792139
Myoc	10351131	0.003880136	-1.779855353	0.021574272	-3.240822486	5.85766E-05
Irf1	10376060	0.002147034	-1.784150873	0.016013486	1.037200125	0.580509731
Cab39l	10415678	0.007741777	-1.785375252	0.005315755	-1.144850592	0.147145926

Ing4	10541771	0.022708274	-1.79414729	0.001440011	-1.22361879	0.166498867
Ssh1	10532767	0.002580257	-1.80027302	0.000709417	-1.096878924	0.397472772
Caskin2	10392998	0.002131465	-1.800652764	0.034733828	1.165704134	0.102981686
Nefm	10421100	0.042672266	-1.804765841	0.017314082	-1.236158155	0.055637167
Syt17	10567289	0.002370898	-1.806886643	0.010141559	1.025300402	0.805991102
Tspan2	10494821	0.025702567	-1.807096229	0.129348834	1.338022151	0.313171133
Fbxl6	10429957	0.006049281	-1.808980262	0.000346836	-1.272695933	0.008189671
Zhx2	10424213	0.005009428	-1.813223378	0.007603519	-1.007896696	0.954112952
Arhgef17	10565935	0.039968085	-1.815835509	0.009034911	-1.298359587	0.012887032
Atp11c	10604799	0.003745943	-1.819654259	0.007825155	-1.090506377	0.21302494
Zfp113	10534966	0.008545385	-1.823584857	0.094932646	1.234778271	0.075074837
Rag1ap1	10499529	0.043101944	-1.827213932	0.107654609	1.0640071	0.725900071
Zscan20	10516507	0.010782929	-1.827305405	0.000513989	-1.164804455	0.313118703
Map3k11	10460645	0.01120951	-1.83722767	0.000166869	-1.297751135	0.031941185
Senp1	10432101	0.011222338	-1.838602293	0.060424019	1.122343621	0.428194651
Uaca	10586017	0.028617437	-1.840273252	0.007848188	-1.279155931	0.021472928
Mapk7	10386723	0.00249659	-1.841200408	0.009292608	1.206252277	0.368430516
Nr1h3	10484987	0.014379978	-1.842910123	0.06498386	1.127308874	0.477180877
Pigv	10517083	0.000174224	-1.842935825	4.23102E-05	-1.017497911	0.827004994
Insig1	10520362	0.020467868	-1.85191344	0.006267108	-1.114969653	0.543477894
Pdk3	10605711	0.028222518	-1.8546657	0.009026845	-1.107119409	0.606229088
Zfp280c	10604424	0.004291463	-1.860442182	0.006549738	-1.094739344	0.347538133
Fam176b	10508128	0.009537101	-1.862503753	0.029327263	1.061901536	0.716028314
Serpinb12	10349118	0.004195727	-1.877645881	0.00088429	-1.081760907	0.598002759
Baz2b	10482880	0.013083955	-1.88039185	0.006310434	-1.211632067	0.086664513
Ano1	10569618	0.013046592	-1.886283688	0.008008981	-1.129926032	0.395794078
Pea15a	10360227	0.016125968	-1.888041967	0.00764293	1.147482777	0.654592196
Numa1	10555590	0.022275525	-1.893663513	0.004159423	-1.285071235	0.05424119
Myadm	10569707	0.04061413	-1.894992611	0.002992888	-1.123190176	0.641664895
Asb7	10564436	0.031134014	-1.900870172	0.025349683	-1.204137381	0.059095443
Tcf21	10368240	0.004623352	-1.908454776	0.002703748	-1.208380661	0.044779228
Cxcr4	10357472	0.014902839	-1.909290552	0.049624389	1.122499654	0.582620608
Acvr2a	10471953	0.003953566	-1.911550525	0.011987274	-1.090674956	0.1557025
Golim4	10498775	0.014662933	-1.911953584	0.00291598	-1.078079946	0.714741463
Agbl5	10520574	0.0428793	-1.926650652	0.047841219	-1.022416719	0.923185267
Slc16a2	10606186	0.001128989	-1.930360099	0.008437884	1.150814258	0.379968161
Tmem131	10353947	0.042171897	-1.930957841	0.060561439	1.072747099	0.804909757
Ncoa1	10399265	0.011563836	-1.939614325	7.06487E-05	-1.383225074	0.014378107
A430107O13f	10536635	0.017975354	-1.943924921	0.037263355	-1.098020508	0.222313774
B230217C12f	10380830	0.030668608	-1.948805351	0.030190831	-1.133952336	0.39877276
Nos2	10379228	0.004035324	-1.953851742	0.042209252	1.169393654	0.258917469
Notch3	10449775	0.015743394	-1.962015572	0.002438345	-1.249469134	0.154239133
Mon2	10372928	0.015286042	-1.963477721	0.010034368	-1.254715563	0.018092362
Lipc	10594812	0.014976985	-1.96552312	0.018967411	-1.083408014	0.604266384
Nr2f2	10564527	0.009480982	-1.968802416	0.00098004	-1.356247834	0.008317016
Lrrc18	10413943	0.04857626	-1.969223235	0.056608256	-1.181694138	0.010207381

Clcn3	10578810	0.025105006	-1.969542401	0.016931462	-1.14873665	0.411222743
Slco5a1	10353117	0.047225048	-1.971235305	0.016016096	-1.294340026	0.080133856
Recql5	10393021	0.015926451	-1.979038941	0.050828653	1.103148235	0.641313501
Capn5	10565689	0.0090485	-1.981173186	0.051822556	1.443082053	0.285319327
Cbx8	10393614	0.047270114	-1.981294492	0.034110123	-1.049577234	0.853269437
Rad50	10385842	0.004677403	-1.984659714	0.035779108	1.06429231	0.484376507
Ckb	10402708	0.015371668	-1.985528864	0.004175928	-1.279908886	0.069774328
4921513D23f	10437852	0.041435363	-1.985988818	0.02819757	-1.236093892	0.090690173
Prrg3	10600044	0.015690683	-1.994563885	0.047208265	1.056825122	0.764094504
Xpo1	10374590	0.024604438	-2.000232765	0.005342143	1.031054703	0.922032398
Tnpo3	10543650	0.025587025	-2.002290587	0.006294655	-1.100618894	0.690833012
Jag1	10488060	0.000799134	-2.007234259	0.003362017	-1.028889703	0.773191948
Itga1	10412298	0.040459357	-2.008854861	0.01065864	-1.136804277	0.60712753
Cyb5r4	10587627	0.017905457	-2.021561368	0.012021341	-1.225516578	0.120150045
Pcdh12	10458540	0.0009249	-2.021879008	0.001229775	-1.070818028	0.56072483
Hmg20a	10585572	0.008131162	-2.024740593	0.013262712	-1.190616121	0.010295359
Pvrl3	10439766	0.002158889	-2.029612689	0.007998802	1.011519719	0.933608549
Phf7	10418604	0.026156461	-2.039220102	0.001467842	-1.386479866	0.050215962
Gpr153	10510700	0.004938483	-2.053047017	1.49715E-05	-1.126533331	0.539492777
Armxc3	10601778	0.046034486	-2.05499754	0.035055644	-1.157308375	0.455312209
Pknox2	10592251	0.008997146	-2.066678775	0.027985227	-1.01561246	0.910458843
6330439K17F	10488266	0.035347856	-2.066718169	0.000771209	-1.33081497	0.186320988
4931414P19F	10419803	0.047889937	-2.071068908	0.044367669	-1.042312424	0.87811619
Fhdc1	10499062	0.042908189	-2.071838669	0.005304551	-1.102450083	0.751004364
Acvr1	10482824	0.002048968	-2.073049099	0.001625761	-1.082787754	0.592677258
Galnt7	10578771	0.001774487	-2.073613683	0.025809903	1.27674211	0.219879922
Irx1	10410501	0.002120134	-2.082120165	0.001149161	-1.219305803	0.092057752
Fancb	10603135	0.007928564	-2.096247649	0.013389676	-1.076282398	0.637467599
Tmem126b	10565519	0.012429495	-2.101352219	0.002780083	-1.205060295	0.322264808
Rassf9	10366153	0.02178312	-2.116701419	0.003422155	1.300667518	0.57343402
Elk3	10371959	0.040547884	-2.126727218	0.052395142	-1.045461548	0.850802194
Tmem88	10387368	0.002228914	-2.15702316	0.042030997	1.177326934	0.038586019
Cxxc5	10454851	0.003381845	-2.15779329	0.000438826	-1.302432755	0.067469904
Ttc9c	10465812	0.009249077	-2.15950651	0.022808559	1.055062405	0.80996391
Meis1	10384504	0.008085916	-2.164938436	0.023802703	1.175025446	0.560373101
Fat4	10491732	0.000295636	-2.166666634	0.001807027	-1.04128573	0.673676962
Ehd2	10560190	0.009416088	-2.167722376	0.018362265	-1.004422789	0.982727062
Slitrk6	10422244	0.009364301	-2.169974867	0.003752985	-1.036156316	0.885839547
Ift20	10379215	0.004229795	-2.170824852	0.014477977	-1.069301234	0.561576895
Fzd6	10423825	0.004925337	-2.17662282	0.0008252	-1.42343928	0.004078236
Irx4	10406017	0.023019206	-2.184068845	0.000206439	-1.4707315	0.046864584
Zfp46	10509218	0.015016914	-2.184717388	0.008579206	-1.26920637	0.123128309
Igf1	10365559	0.033732278	-2.190866636	0.022265454	-1.331816205	0.009975186
Aire	10370397	0.013053153	-2.195972519	0.004431812	-3.526417609	0.00016195
Baz1b	10526319	0.017820707	-2.203699911	0.008940725	-1.284841542	0.123568253
D18Ertd653e	10456492	0.023497856	-2.204550376	0.000186904	-1.42499591	0.093052865

Chd3	10387316	0.006293634	-2.206508763	2.52287E-06	-1.541515891	0.00448822
Ust	10367734	0.007964489	-2.206663532	0.021424611	-1.014456263	0.935011846
Gne	10512640	0.012473406	-2.207338818	0.001029346	-1.403799278	0.047805154
Ushbp1	10579486	0.014729237	-2.210122278	0.027215101	-1.181351731	0.051225568
Tox3	10580522	0.000993971	-2.210539223	0.018111479	1.161767734	0.272148819
Itpr1	10540408	0.004847837	-2.210688438	0.000285102	-1.425398428	0.016093535
Map3k1	10412100	7.41E-06	-2.216580189	0.000446299	1.137501848	0.131215898
Ddah2	10444665	0.02579965	-2.22649957	0.005290625	-1.153350758	0.600840386
Ccdc45	10382115	0.0046427	-2.243204009	0.007749876	-1.205163039	0.105260501
Bahcc1	10383313	0.025277957	-2.249075702	8.00747E-05	-1.579384873	0.018456831
Hivep1	10404774	0.007358006	-2.249260617	0.000514372	-1.423892272	0.030486565
Slc25a45	10460696	0.000790182	-2.259758081	0.034403811	1.278486269	0.005057081
Nlk	10388884	0.014115597	-2.262153994	0.01721136	-1.243917216	0.066638384
B230380D07I	10594802	0.001717667	-2.262176768	0.003020602	-1.117618908	0.436059839
Meis2	10486041	0.017196741	-2.269146886	0.000940228	-1.429360673	0.066235377
Acrbp	10541785	0.012207581	-2.271740954	0.022124789	-1.176076304	0.161830086
4930578C19F	10603796	0.049165143	-2.273463223	0.033024697	-1.216102641	0.381482793
Nav1	10358091	0.013465707	-2.280852787	0.000544203	-1.49547913	0.023729652
Tubd1	10379968	0.015932929	-2.284320371	0.008767759	-1.286074703	0.142155102
Alox12	10387821	0.030528096	-2.31956706	0.005203326	-1.380116448	0.136511118
Dpy19l3	10562500	0.038671207	-2.327256134	0.020553066	-1.054364232	0.877011529
Kctd2	10382516	0.003893107	-2.335235063	0.003462398	-1.123457506	0.538157262
Mfsd7c	10397364	0.040535505	-2.347353303	0.000374002	-1.618711449	0.028796937
Dennd1c	10452269	0.013626402	-2.348869672	0.003406448	-1.350371786	0.116061186
Dclre1a	10468639	0.013675103	-2.350347377	0.001480543	-1.422017612	0.068486624
Egln3	10400304	0.004126459	-2.357080172	0.014864362	1.127172508	0.63174902
Fads2	10465895	0.013378723	-2.359962424	0.010035786	-1.131955483	0.592461047
Lama4	10362538	0.02523578	-2.36963889	0.000957552	-1.447696762	0.108925511
Sipa1l3	10561721	0.03284606	-2.37396171	0.001408734	-1.186943832	0.607328503
Mtmt11	10494351	0.016190889	-2.386928839	0.055904249	-1.047757206	0.579389694
C2cd3	10555339	0.008538667	-2.420273355	0.019981804	-1.132148602	0.388919424
Jhdm1d	10544150	0.006508676	-2.432676438	0.001147379	-1.383998705	0.080662141
Carf	10346678	0.002159218	-2.435565304	0.006163917	-1.229417279	0.036162737
Sdpr	10346164	0.012176202	-2.449878158	2.07839E-05	-1.476599821	0.086248896
Dnmt3a	10394209	0.006429935	-2.454731918	4.59863E-06	-1.765370156	0.000441656
Map3k5	10361926	0.046624979	-2.460615489	0.000518702	-1.855468438	0.000829586
Rshl2a	10441610	0.000363928	-2.478515527	0.000389837	-1.324211628	0.018458393
Rdh5	10373588	0.013715918	-2.479466958	0.004162094	-1.273676004	0.298743464
Tbc1d8b	10602020	0.004254981	-2.483553992	0.042198966	1.206049306	0.347779818
Smtnl2	10388185	0.0280798	-2.488983499	0.004471421	-1.632694273	0.002221508
Plekhh3	10391359	0.043140094	-2.491373134	0.010147394	-1.611969498	0.000667472
Igfbp5	10355500	0.048617917	-2.509393408	0.001861782	-1.639403898	0.039840066
2210020M01I	10382692	0.002637418	-2.520331201	0.000462035	-1.117398147	0.635133438
Slc12a6	10474545	0.003460496	-2.547369666	0.003089601	-1.301542249	0.106793782
L3mbtl3	10368380	0.006111344	-2.561307854	0.004008435	-1.451983776	0.007678825
Rad9	10464659	0.029693416	-2.568685032	0.035048169	-1.145163294	0.581135791

Zfp182	10603881	0.004970163	-2.588183667	0.000793726	-1.350000555	0.154401875
BC068281	10394358	0.000896652	-2.602226726	0.007158319	-1.148154402	0.052357433
Sap18	10415642	0.012774398	-2.605607902	0.000789696	-1.249326014	0.441308872
Dscr3	10441064	0.048778068	-2.634115002	0.031914822	-1.257764365	0.406619532
Zfyve26	10401192	0.010836172	-2.641492535	0.064465709	1.042447696	0.437386511
Stard8	10600921	0.023185814	-2.650147797	0.001008319	-1.814139484	0.001876391
Sh3d19	10492864	0.03664752	-2.656143945	0.009163625	-1.501861734	0.079250511
Add3	10463911	0.031103891	-2.670591226	0.000943845	-1.373694685	0.32998221
Nfatc3	10574962	0.008187409	-2.67072852	0.006465484	-1.375189086	0.066046484
Prp	10554945	0.003355391	-2.675313574	0.00181063	-1.179772484	0.467701769
Gmfg	10551511	0.025150717	-2.695158277	0.049020076	1.260517953	0.621892074
Trib2	10399470	0.004090665	-2.696705127	0.006612674	-1.364847725	0.011323391
Usp21	10360105	0.046419125	-2.741958369	0.007233873	-1.542435327	0.110560222
Tek	10505954	0.019738745	-2.761539526	0.004812379	-1.456056645	0.124451314
Fchsd2	10555438	0.002260336	-2.78162469	0.001843283	-1.463472981	0.015279868
Flrt2	10397633	0.046038055	-2.786601428	0.009756976	-1.411585648	0.272311675
Rasgrp3	10446965	0.004868919	-2.80014433	0.007039186	-1.222481287	0.311541987
Pde10a	10441680	0.00905723	-2.815936888	2.74633E-05	-1.800304364	0.010076932
Dixdc1	10593384	0.000419197	-2.857790186	0.016274118	1.588440261	0.125569093
Meox2	10395409	0.002432379	-2.860408332	0.000929441	1.07916673	0.819036093
Slc1a4	10384539	0.000228567	-2.878574289	0.023066931	1.445105123	0.013253355
Loxl2	10416215	0.046977388	-2.87921728	0.054872275	1.314189511	0.667498074
Kcnj5	10592061	0.038908729	-3.105937216	0.000170388	-2.185892824	0.003120801
Magi3	10500847	0.0427838	-3.117825902	0.001419902	-1.598020922	0.19748486
Anpep	10564818	0.046022446	-3.181960907	0.000511074	-1.803747979	0.088403364
Gpr128	10440002	0.004368686	-3.192854183	0.004356051	-7.199982171	0.000246121
Col1a1	10380419	0.034780214	-3.201717185	7.80923E-05	-1.253205022	0.644420813
Gdf10	10414025	0.018610448	-3.220887639	0.0024129	-1.794491389	0.021635215
Rtn1	10400926	0.019924951	-3.282226955	0.002473478	-1.920913427	0.006090643
Ift80	10498599	0.013719542	-3.286802267	0.016958805	-1.167751529	0.613482844
Ppfibp2	10556082	0.005192191	-3.358391297	0.000430343	-2.080327982	0.000393307
Kctd21	10555039	0.008658573	-3.455704843	0.007738778	-1.200237574	0.571235425
Ar	10600901	0.016805613	-3.520340553	0.009160812	-1.565637265	0.086078581
Meox1	10391504	0.000104671	-3.554064835	0.001403562	1.317342057	0.344460725
Car7	10574480	0.000732183	-3.605543295	0.0005055	-1.485175409	0.078124674
Fibin	10485711	0.025302065	-3.853802131	0.000321838	-2.077160218	0.039443133
Fap	10483081	0.013034113	-3.894151167	0.008050119	-1.76975679	0.010942148
Myo1f	10443980	0.006824285	-4.118385528	0.015575979	-1.209971724	0.499247869
2700081O15f	10461071	0.043444285	-4.158336954	0.008924385	-1.849865014	0.099312137
Pld4	10398907	0.015040264	-4.173855532	0.000117757	-1.780705989	0.154081081
Plekha6	10349876	0.010735393	-4.179638978	0.00134979	-2.275065896	0.002443482
St8sia4	10356880	0.000506225	-4.291817973	0.000579179	-1.314455732	0.311884951
P2ry14	10498350	0.033080896	-4.438723986	0.002525502	-2.136602209	0.046938284
Wnt5a	10413482	0.00027589	-4.43939065	0.000990796	-1.5400103	0.038640654
Ncapd2	10547943	0.018946487	-4.469883229	0.003150998	-2.132597801	0.018903592
Chek2	10524266	0.001245157	-4.543521274	0.002438347	-1.415276724	0.188937323

Vav1	10446253	0.004581361	-4.657040195	0.011231571	-1.331356251	0.281033803
Aqp4	10457614	0.012979791	-4.679518205	0.004623496	-2.284416256	6.64823E-05
Aplnr	10473444	0.005995757	-4.977621964	0.001331729	-1.313779659	0.549415298
Ptgfr	10502805	0.000412337	-5.054126122	0.003440478	-1.52005831	0.008149253
Tmtc2	10372177	0.003607866	-5.080228305	0.004917545	-1.661392946	0.066464716
Capn3	10475144	0.002196793	-5.242312413	0.000984726	-1.304469609	0.507025968
Aqp7	10512145	0.013962754	-5.916114605	0.012854451	-2.07774581	0.000378471
Fam78a	10481574	0.011184126	-5.970906594	6.07848E-05	-2.572616957	0.035078267
Lrrc16b	10415187	0.001149292	-6.044208105	0.005918306	-1.181945352	0.59386188
Brca2	10527801	0.003877881	-7.710797069	0.00193125	-2.612190296	0.008453184
Pcnx13	10465150	6.73E-05	-12.41738947	0.000246418	-2.268224332	0.029200627

WT (sham and I/R) and KO (sham and I/R) mouse hearts were subjected to Affymetrix Gene arrays to compare changes in mRNA levels at 24-hrs reperfusion following 1-hr ischemia. Data are averaged from 3-4 mice.