

SUPPLEMENTAL MATERIAL

Powers et al., <http://www.jem.org/cgi/content/full/jem.20120800/DC1>

**Table S1**

**Genes differentially expressed between WT and *Ccnd3*<sup>-/-</sup> Lin<sup>+</sup>B220<sup>+</sup>CD43<sup>hi</sup>IgM<sup>+</sup> pro-B cells.**

**Expressed Higher in WT relative to *Ccnd3*<sup>-/-</sup>**

Gene Name/ID	Mean Array Signal (WT)	Mean Array Signal ( <i>Ccnd3</i> <sup>-/-</sup> )	Fold Change
A030012G06Rik	2.5928	0.2336	11.33
A230109K23Rik	2.5928	2.16591	2.672
A830039N02Rik	1.9659	0.8318	13.617
A930004K21Rik	2.3963	2.004	2.467
AA545217	3.2065	2.80061	2.546
AB023957	2.352	1.81381	3.452
Abca3	2.1198	1.2587	7.262
Abcf1	2.8555	2.4122	2.775
Acd5	2.6789	2.1584	3.315
Acs1	2.6821	2.2955	2.435
Acvr1	2.2267	1.8195	2.553
Aebp2	2.0434	1.4197	4.204
AH494441	2.61	1.99611	4.11
AH61788	2.8344	2.45241	2.354
Aipl1	2.0195	1.19821	6.626
Akt1	2.2489	1.82771	2.637
Ankrd25	2.6266	2.25631	2.345
Anks1	2.3424	1.9289	2.591
Anin	2.9046	2.3581	3.519
Anub1	2.5107	2.11411	2.492
Apbb1ip	2.3765	2.0137	2.305
Apobec2	2.2821	1.44181	6.922
Arhgap11a	3.6095	3.2215	2.443
Arhgap19	2.6855	2.1449	3.472
Arhgap23	2.4765	2.0963	2.399
Arf13	2.4659	0.3426	13.283
Asf1b	3.4285	2.952	2.995
Aspm	3.4096	2.7857	4.206
Atp10a	2.6435	2.34061	2.008
Aurkb	3.1983	2.6448	3.576
AW320017	1.2929	0.11831	14.948
B130055D15Rik	3.0093	2.5443	2.917
B230315F11Rik	2.3435	1.9657	2.386
B430315C20Rik	2.6301	2.2918	2.179
B93006720Rik	3.0695	3.4796	3.889
Balap2	2.1785	1.6903	3.077
Banf1	2.9073	2.5647	2.702
Bar1	2.7555	2.0836	4.697
BC004701	3.2057	2.7821	2.652
BC005512	3.5597	2.8034	5.705
BC022692	2.5855	2.109	2.995
BC028450	2.6032	2.0437	3.626
BC034753	2.5682	1.7521	6.532
Birc5	3.6783	3.0535	4.215
Brc1	3.2523	2.7807	2.962
Brp1	3.0044	2.49021	3.267
Brr1	3.0818	2.44341	4.349
Btbd14b	2.2825	1.75301	3.384
Bub1	3.0993	2.4444	4.517
Bub1b	2.4691	1.832	4.336
C030025P15Rik	2.9535	2.2007	4.313
C130020C13Rik	3.0888	2.7619	2.122
C230078M08Rik	2.3633	1.713	4.469
C230096C10Rik	2.5003	2.0511	2.813
C3	2.523	1.9235	3.976
C330027C09Rik	3.3212	2.72131	3.98
C5ar1	2.8332	2.423	2.571
C79407	3.402	2.7285	4.715
C86302	3.0605	2.5553	3.2
Cacnb2	1.734	0.5509	15.244
Calmbp1	3.4295	2.73701	4.925
Camp	3.2955	2.92101	2.368
Carhsp1	3.3794	3.0494	2.137
Chc5	3.4125	3.0711	2.194
Cna2	3.4507	2.77811	4.705
Ccnb1	3.1676	2.8165	2.244
Ccnb2	3.5861	3.1444	2.765
Ccnd3	3.4902	3.0088	3.029
Ccne1	2.8437	2.4533	2.456
Ccnf	2.8266	2.02911	6.273
Cd44	3.0517	2.6415	2.571
Cd9	2.4567	2.0885	2.334
Cdc20	3.3124	2.9345	2.387
Cdc25c	3.0122	2.3947	4.144
Cdc2a	3.4027	2.78511	4.145
Cdc45l	3.1958	2.3065	2.445
Cdc6	3.2946	2.90961	2.426
Cdc7	3.2394	2.74141	3.147
Cdca1	3.3003	2.70501	3.938
Cdca2	3.5792	2.5399	4.527
Cdca3	3.5792	3.05861	3.315
Cdca5	3.3031	2.6773	4.224
Cdca8	3.0539	2.4474	4.041
Cdkn2c	3.2709	2.7103	3.635
Cdkn3	3.4923	2.9235	3.713
Cenpa	2.5645	2.07031	3.12
Cenpe	3.1082	2.7416	2.325
Cenpf	3.2705	2.7353	3.429
Cenph	3.3905	3.04681	2.206
Cenpk	3.3559	1.7346	4.181
Chc1	2.8449	2.53311	2.05
Chek1	3.2029	2.8859	2.074
Chek2	2.5785	2.2395	2.182

**Expressed Higher in *Ccnd3*<sup>-/-</sup> Relative to WT**

Gene Name/ID	Mean Array Signal (WT)	Mean Array Signal ( <i>Ccnd3</i> <sup>-/-</sup> )	Fold Change
A130009E19Rik	2.3933	2.7429	2.236
A130033P14	2.4833	2.8044	2.094
A630043P06	2.896	3.22739	2.144
A730016F12Rik	0.955	1.8355	7.594
Abca1	2.5237	2.88219	2.236
Adprt3	2.9143	3.2208	2.025
Afap1	2.517	2.81979	2.008
Ag1	2.445	2.7692	2.109
Al225934	1.8338	2.23119	2.496
Al415330	1.1293	2.2498	11.14
Al987712	2.0206	2.4099	2.45
Anxa8	1.1314	1.9142	6.064
Appbp2	-0.4487	1.0482	31.397
Arpp21	2.5307	2.65279	2.099
Arred4	1.9861	2.34759	2.298
B230312A22Rik	2.0695	2.4302	2.294
B430119L13Rik	2.1581	2.48669	2.131
B830008H07Rik	1.4628	2.26719	6.373
BB220380	2.8937	3.216	2.1
BC020535	2.1872	2.5774	2.455
BC026657	0.6915	1.85559	14.591
BC031781	-0.4488	0.66329	12.944
BC036961	2.5873	3.1501	3.654
Bcl11a	3.0453	3.3669	2.097
Bcl11b	2.0466	2.45579	2.565
Bcl11d /// Bcl2a1b /// Bcl2a1c /// Bcl2a1a	0.136	1.20849	11.814
Bhlhb2	0.7441	1.9466	15.94
Bmf	2.6247	2.9299	2.019
C030011O14Rik	2.8883	3.19949	2.047
C130026M15Rik	2.6711	2.6711	95.477
C130047D21Rik	2.4431	2.7903	2.224
C230085N15Rik	2.2557	2.6583	2.526
C330008K14Rik	1.2428	2.2959	11.3
C79248	3.018	3.3773	2.287
C85492	2.2954	2.2954	2.337
Cacna1b	2.2094	2.7898	3.805
Cacna1e	2.7086	3.01319	2.016
Camk2d	2.0471	2.4556	2.561
Capn1	2.1236	2.1276	8.203
Catns	2.8653	3.1698	2.016
Cbr1	2.2294	2.58849	2.286
Cc27	2.7272	3.0312	2.013
Cc28	2.1252	2.5826	2.861
Ccnd2	2.9047	3.31649	2.581
Ceacam2	1.8232	2.22	2.493
Centb1	2.4886	2.8243	2.166
Cep1	-0.0262	0.9518	9.504
Cib1	1.8513	2.5071	4.526
Cish	2.3019	2.6477	2.217
Cic1	2.6634	3.12069	2.866
Cldn16	0.3275	1.309	9.582
Cococacrisp	-0.7497	0.42239	14.862
Commnd9	3.0572	3.4786	2.638
Coq7	3.1491	3.5203	2.35
Cribp	2.6589	3.09819	2.749
Crim1	0.8686	1.9653	12.493
Csen	2.1503	2.63539	3.055
Cspg2	1.4566	2.0512	3.931
Ctcf1	1.8264	2.30319	2.997
Cyp11a1	2.2048	2.6788	2.958
Cyp27a1	1.6233	2.15289	3.385
Cyslr1	2.2402	2.68789	2.803
D18Erd653e	2.6679	3.05799	2.455
D23007K08Rik	2.4575	2.7768	2.085
D2Bwg1335e	2.2375	2.58509	2.226
D2Erd173e	2.5164	2.8786	2.302
D730046L02Rik	-0.1928	1.1609	22.578
D8Erd4531e	3.128	3.45409	2.118
Dcd	0.7345	1.8063	11.797
Ddc	2.5494	2.8876	2.178
Ddx3y	0.0997	2.8451	556.416
Dhpk	2.4575	2.6514	2.249
Dnajb10	2.1263	2.54179	2.603
Dnajb7	2.1802	2.62329	2.832
Dpm3	2.2863	2.6916	2.019
Dpm2	2.0213	2.39539	2.366
Dsg1a	-0.2648	0.8352	12.589
Dusp15	0.5521	1.5665	10.337
E030026I10Rik	0.4833	1.5956	12.95
E030045D18Rik	0.7903	10.214	7.995
E130308A19Rik	2.6234	2.95109	2.126
Edg3	1.982	2.5586	3.772
Efna5	0.6625	1.83139	14.753
Ehd3	1.6664	2.5265	7.246
Fbxo10	0.5808	3.5562	944.93
Eltid1	1.946	2.3552	2.565
Eps8l2	2.0693	2.45049	2.405
Fam65b	2.3069	2.6211	2.061
Fbxo10	2.3879	2.71469	2.122
Fbxo32	2.3148	2.6512	2.169
Fcgr2b	-0.4884	0.6357	13.307
Fchs2	1.6722	2.18679	3.27
Fjk1	2.0397	2.4403	2.515

Chi33	3.3803	2.89171	3.08	Frap1	2.3502	2.7486	2.502
Chi34 /// Chi33	3.1185	2.6357	3.039	Furin	2.6265	2.93089	2.015
Cit	2.6802	2.0645	4.127	Fab8	0.4945	1.7417	17.668
Ckap2	2.9032	2.524	2.394	Gbe1	2.0297	2.54669	3.288
Cks1b	3.5408	3.1885	2.25	Gckr	0.8254	1.8145	9.752
Cks2	3.8534	3.53461	2.083	Ggnbp1	2.3732	2.6789	2.021
Clec4e6	1.7698	0.825	8.806	Gli1	3.0435	3.4504	2.552
Clec4e8	2.4482	2.0894	2.284	Gm12576	2.2002	2.53279	2.252
Clsn	3.2175	2.55111	4.638	Gm457	3.1425	3.4529	2.043
Cml3	2.5726	1.97041	4.001	Gm644	2.1061	2.6884	3.822
Col25a1	1.8652	0.9589	8.059	Gm9866	0.4091	1.4193	10.237
Col4a5	1.7011	0.33021	23.49	Gm94	1.6895	2.5766	7.771
Cpd	2.4938	2.0449	2.811	Gpr132	2.5462	2.848	2.003
Cpne3	2.781	2.472	2.037	Gpr97	2.3868	2.93219	3.51
Ctsl	1.8396	0.69721	13.88	Gprcb	1.8488	2.3506	3.175
Cyhr1	2.9496	2.54381	2.026	Grs10	2.2128	2.66309	2.82
D030011O10Rik	2.6792	2.22651	2.835	Grna	2.7926	3.10689	2.062
D030028M11Rik	3.197	2.76821	2.684	H2-Ob	3.4574	3.7608	2.01
D03005121Rik	1.0766	0.1111	9.236	H2-Q1	1.4845	2.0775	3.917
D15Entd785e	3.0371	2.7483	2.036	H2B	0.8189	3.0086	154.774
D230005D02Rik	1.4701	0.41461	11.362	Haao	2.1853	2.6456	2.886
D2Ertd750e	3.1232	2.7492	2.365	Hdac11	2.6238	2.93879	2.065
D5Ertd606e	3.1685	2.86111	2.029	Hectd1	1.8708	2.42609	3.591
D930008O12Rik	1.9055	0.8167	12.268	Hoxc8	-0.1617	0.891	11.29
Dcka1	1.0603	-0.296	22.714	Htra3	1.6864	2.1858	3.157
Defa3	2.4786	2.0377	2.759	Ifitm1	2.4137	2.7694	2.268
DeK	3.0454	2.67681	2.336	Igf1	2.2322	2.95259	4.259
Demnd5b	2.3309	1.9757	2.265	Igh-VJ558	3.0257	3.6509	4.214
Depdcl1a	2.5107	1.80371	5.093	Ighg	3.1541	3.69819	3.5
Depdcl1b	2.8259	2.24961	3.769	Igj	2.5953	3.0826	3.071
Dhrs7	2.3593	1.4431	8.245	Igk-V1	2.4223	2.9698	3.527
Diap3	2.8126	2.15591	4.536	Igl-V1	2.7266	3.26609	3.463
Dlpa2	3.0727	2.7597	2.055	Ii1ra	2.0571	2.44039	2.417
Dlq7	2.544	1.9595	3.841	Jarid1b	2.7685	3.12279	2.26
Dnmt1	3.2074	2.8549	2.251	Jarid1d	0.8883	2.8178	85.015
Dn	2.6929	2.2514	2.763	Jarid2	2.5168	2.8576	2.191
Dusp10	2.2329	1.62099	3.917	Kcnc1ot1	2.2292	2.69749	2.129
E030003F13Rik	2.8945	2.59241	2.004	KIF3	1.8784	2.28	2.521
E130016E03Rik	2.5081	1.26491	17.506	Klhdc1	2.2095	2.6192	2.568
E130115121Rik	3.0615	2.7106	2.243	Klhl14	2.2134	2.7147	3.171
E130306O19Rik	1.3818	1.7901	3.905	Lhb	2.4774	2.7517	2.11
E2f7	2.7216	2.1401	3.815	Leprel1	0.1221	1.2133	12.336
Ect2	3.124	2.5961	3.372	Lhx3	0.9501	1.87429	8.398
Efra2	2.0165	1.3151	5.028	Lipc	0.9731	2.2576	19.253
Egfr5	2.4605	1.8681	3.912	Lrrtm2	2.3082	2.6531	2.212
Enpp1	2.0783	1.1088	9.321	Msh5	2.6059	2.93949	2.155
Eri2	2.6456	2.30601	2.185	Mtor	2.2299	2.5954	2.32
Eso2	3.1431	2.2902	7.126	Mxd4	3.4906	3.80039	2.04
Esp1	2.7698	2.2094	3.634	Mxd1b	0.4128	1.41799	10.12
Evi	1.7168	0.3356	24.054	Myom2	2.6133	3.0765	2.905
Exo1	2.7011	2.30981	2.462	Nalcn	-0.1432	0.88429	10.653
Eya1	2.5769	2.1476	2.687	Nanog	0.0848	1.1251	10.972
F630043A04Rik	2.4663	1.94161	3.347	Nesf1	2.9959	3.311	2.065
F730047E07Rik	2.6138	2.23511	2.39	Nme1	2.6623	3.0476	2.428
Fancd2	2.2029	1.5294	4.715	Npas3	0.3351	1.4438	12.843
Fbxo30	2.4098	1.5816	6.732	Nphp1	1.6775	2.23769	3.632
Fbxo5	3.3584	2.8028	3.594	Ohrl5	0.0458	1.0106	9.221
Fen1	2.6881	2.28851	2.509	Ohrl9	0.9519	1.91029	8.222
Fgf13	2.4457	1.88201	3.661	Osgp	2.4069	2.761	2.259
Fign1	3.2614	2.90981	2.246	Pcdh9	1.5451	2.4515	8.061
Fkbp5	2.1754	1.62401	3.559	Pcdhb16	1.8994	2.3127	2.59
Fmn2	2.1799	1.67331	3.21	Pcdhb20	0.2396	1.7072	29.349
Fosl1	1.2003	0.16051	10.959	Pdk1	2.6303	2.9872	2.274
Foxm1	2.5982	1.54841	11.214	Pdk2	2.7081	3.0131	2.018
Fshpp1	2.5938	1.96791	4.225	Pdk3	2.0013	2.37369	2.357
Fthsdcl1	3.1325	2.798	2.111	Pf2	2.7568	3.13569	2.392
Gabbr1	1.3372	0.33451	10.062	Pim1	2.0451	2.76149	5.204
Gins3	2.6116	2.2357	2.376	Plk2	2.196	2.71149	3.277
Gm5480	2.5837	2.01311	3.72	Plxn3	1.62	2.3483	5.349
Gm6747	1.1898	-0.0802	17.782	Ppp19a	1.6247	2.3359	5.142
Gmn	3.6461	3.32271	2.105	Ppt1	2.1411	2.5027	2.299
Gpsm2	2.8444	2.3394	3.198	Prg3	2.2152	2.66129	2.793
Gramd2	2.1618	1.64121	3.315	Prir	1.8766	2.33159	2.85
Gsp2	2.7201	2.2788	2.762	Prrp	1.9458	2.6587	5.162
Gtse1	2.5214	1.71811	6.357	Ptprf	0.8459	1.8563	10.242
H2-M3	3.5609	2.882	4.774	Qprt	0.6941	1.7023	10.19
H2afx	3.7367	3.14761	3.882	Rab11fip5	2.8495	3.2528	2.531
Hcf1	2.9599	2.6275	2.149	Rab7	0.2787	1.2536	19.21
Hcr	2.6628	2.3545	2.033	Rab2b	2.6218	2.9426	2.093
Hist1h2ad	3.8119	3.4508	2.296	Rab4a	1.8077	2.7583	8.924
Hist1h2bp	3.7437	3.4	2.206	Rab6b	2.7037	3.1153	2.579
Hist1h3a /// Hist1h3i /// Hist1h3e /// Hist1h3f /// Hist1h3d /// Hist2h3b /// Hist1h3h /// Hist2h3c-2 /// Hist1h3b /// Hist1h3c /// Hist1h3g /// Hist2h3c1	3.6293	3.1751	2.83	Rabpm3	2.6203	2.9511	2.141
Hist1h3 /// Hist1h3e /// Hist1h3f /// Hist1h3d /// Hist2h3b /// Hist1h3h /// Hist1h3b /// Hist2h3e /// Hist2h3c1	2.6023	2.16781	2.719	Rgs3	0.9429	1.8395	7.912
Hist1h4f /// Hist1h4b /// Hist1h4i /// Hist1h4m /// Hist1h4a	2.9264	2.4775	2.811	Rmst	0.0095	0.9773	9.285
Hist1h4k /// Hist1h4j /// Hist1h4m	1.7686	0.82531	8.775	Sbsn	2.0555	2.3954	2.187
Hist2h2aa2	3.6632	3.23781	2.663	Scal	2.3886	2.7127	2.109
Hmbs	3.0934	2.68771	2.545	Scamp1	1.7161	2.2294	2.626
Hmnc1	1.7832	0.13861	44.115	Scd1	2.6534	3.039	2.429
Hmga2	1.4107	0.375	10.856	Scml4	1.8151	2.24299	2.678
Hmgp3	1.0791	-0.0496	13.449	Scn4b	3.1673	3.57819	2.575
Hmnm	3.1808	3.6646	3.282	Sc22a	2.1619	2.55689	2.483
Hoxc9	1.7259	0.8004	8.423	Sema6c	0.6879	1.7125	10.582
Hs2st1	2.1727	1.46611	5.088	Sema6d	0.801	1.52859	14.076
Hspa2	3.468	3.1557	2.052	Sema7a	2.1731	2.6124	2.749
Hsp	1.3657	0.0486	20.753	Sema7b	1.9114	2.31539	2.535
Ide	2.7442	2.3867	2.277	Serpinh1	0.4083	1.97889	37.204
Ier3	1.6477	0.68031	9.276	Sic16a11	1.1232	1.9172	6.223
Igfb1	0.7363	-0.2881	10.577	Sic2a9	3.0317	3.4192	2.44
Igfb4d	0.7538	-0.2397	9.851	Sic2a	1.6841	2.16889	3.053
Incnp	3.2422	2.6757	3.685	Sic6a19	0.3529	1.58389	17.021
Ing5	2.3892	1.98711	2.524	Sit12	2.2474	2.5918	2.21
Itk	1.3419	0.18711	14.282	Snitg2	0.5445	1.8303	19.31

Kcnab1	1.7051	0.44131	18.356	Spag16	-0.4003	0.9194	20.878
Kif11	3.4955	2.79191	5.053	Spint2	2.9097	3.2137	2.013
Kif14	2.1248	1.3885	5.448	Spsl1	2.5223	2.89909	2.381
Kif18a	2.181	1.2186	9.17	Spp2	0.356	1.4024	11.127
Kif20a	3.4219	3.0378	2.421	Sulf2	1.7635	2.1962	2.708
Kif22	3.4752	2.8245	4.474	Synpo2l	2.204	2.50909	2.018
Kif23	3.352	2.80281	3.541	Tcf7l2	2.1519	2.4436	2.049
Kif24	2.433	2.17111	2.3	Tcfp4	0.1707	1.5037	21.527
Kif2c	2.3245	1.6223	5.037	Tctc	2.0515	2.4157	2.313
Kif4	3.0498	2.46401	3.852	Tgfb14	3.2096	3.583	2.362
Kif5b	2.9501	2.5511	2.506	Tgfb3	2.2268	2.7117	3.054
Knat7	2.8827	2.36661	3.281	Thbs2	0.6687	1.63209	9.191
Kntc1	2.5985	2.19981	2.504	Tmc5	0.8434	2.229	24.299
Kpna2	3.5553	3.06881	3.065	Tmc7	2.1061	2.4542	2.228
Lcor1	2.9754	2.5518	2.652	Tmem181a	2.6119	2.9942	2.411
Lig1	3.5403	3.1652	2.371	Tnfr1b	2.6427	2.9759	2.137
Limk1	1.9497	1.1923	5.72	Tnfrsf22	1.6916	2.20239	3.241
Litaf	2.4372	1.97471	2.9	Tnfrsf13	1.0985	1.9293	6.773
Lmnb1	3.2653	2.83491	2.693	Trpm3	0.9099	1.0627	9.371
LOC239447	1.5487	0.53391	10.346	Usp30	2.1221	2.4797	2.278
LOC433671	2.7287	2.42341	2.019	Uty	-0.0658	2.0739	137.943
Lpl	1.8562	0.89221	9.204	Vlrb8	0.2311	1.181	8.91
Lrr1	2.5883	1.8924	4.964	Vll	2.1231	2.4506	2.125
Mad2l1	3.3738	2.9652	2.562	Xp9300	0.303	1.3133	10.24
Maneal	1.3698	0.3469	10.541	Xlr // 3830403N18Rik	2.4381	2.76909	2.142
Mastl	2.3094	1.7933	3.281	Ypel4	0.8999	1.90149	10.036
Mbnl3	2.9509	2.5801	2.348	Zfx4	0.2018	1.32549	13.295
Mec	2.9313	2.5262	2.541	Zfp93	0.5036	1.5318	10.617
Mcm10	3.037	2.518	3.303	Zic2	0.1393	1.1567	10.408
Mcm2	3.0814	2.73951	2.197	0610042C05Rik	3.0439	3.3942	2.24
Mcm3	3.7182	3.384	2.158	1110012N22Rik	0.7994	1.915	13.049
Mcm5	3.361	2.98441	2.38	1110033O09Rik	2.4434	2.9138	2.953
Mcp4b	1.9904	1.18251	6.425	1110051K18Rik	2.8658	3.2221	2.271
Megf9	2.7981	2.48461	2.058	1500005K14Rik	2.3716	2.76109	2.451
Meik	2.7504	2.1738	3.772	1700016F23Rik	2.2446	2.55369	2.037
MGC65590	3.0869	2.7222	2.315	1700025E21Rik	0.8017	1.7602	9.088
Mie1	3.0375	2.4245	4.102	1700034I23Rik	2.1922	2.5229	2.192
Mja1l	1.597	0.436	14.487	1700041C02Rik	1.6451	2.14139	3.135
Mkks	2.2883	1.7327	3.594	1700048O20Rik	3.5887	3.92859	2.187
Mmp1a	0.9849	0.0261	9.094	1700067C01Rik	0.4422	1.4994	11.405
Mmp8	2.4904	2.1811	2.038	1700094D03Rik	2.2281	2.5358	2.013
Mphosph1	3.4846	3.06651	2.618	1700095F04Rik	-0.8378	0.3301	14.719
Mthfd1	2.6309	2.2199	2.576	1700110K17Rik	1.8204	2.3393	3.302
Mthfd2	2.6436	2.2847	2.285	1810019A08Rik	2.7296	3.1107	2.404
Mxd3	2.7053	1.8176	7.721	2010001J22Rik	2.0822	2.4567	2.368
Myb1	2.8287	2.0463	6.058	2010109A12Rik	1.8108	2.213	2.524
Myh11	2.1954	1.72941	2.924	2010309G21Rik	3.36	3.748	2.443
Nasp	2.032	1.3339	4.989	2310010117Rik	2.1379	2.51679	2.392
Nbs4	2.4876	0.4882	9.986	2310047D07Rik	0.853	1.7939	8.727
Nek2	2.9098	2.39701	3.256	2410018M08Rik	1.2071	2.08919	7.622
Net1	2.6033	2.195	2.56	2610024A01Rik	2.7906	3.1675	2.381
Ngp	3.4884	3.154	2.159	2610042O14Rik	1.9418	2.3304	2.446
Nnyc1	2.142	1.55081	3.901	2810055G20Rik	1.5441	2.177	4.284
Nr4a2	1.0927	0.1473	8.838	2810422M04Rik	2.4349	2.8327	2.499
Nrm	3.2654	2.90181	2.309	2810457G06Rik	1.1496	1.8812	5.39
Nucks1	3.0376	2.61921	2.62	2900056M20Rik	2.4832	2.8799	2.492
Nudt4	2.9671	2.65261	2.062	2900075B16Rik	2.2857	2.6359	2.239
Nup54	1.82	0.7251	12.442	3110005L21Rik	1.4307	2.2143	6.075
Nusap1	3.5751	2.89741	4.76	3110007P09Rik	0.9475	1.83749	7.762
Ogn	2.268	1.61291	4.519	3222402N08Rik	0.2746	1.6964	26.411
Paln	2.3611	1.79781	3.658	4632415K11Rik	1.2557	2.01779	5.782
Pawr	1.0861	-0.0892	41.972	4731417B20Rik	1.6342	2.1294	3.127
Paxip1	2.9997	2.68581	2.06	4921525L17Rik	0.8214	1.8465	10.594
Pbk	3.4521	2.84251	4.069	4921525O09Rik	2.156	2.61289	2.863
Pcna	2.1764	1.5316	4.413	4921529O18Rik	1.7186	2.208	3.086
Pdp1	2.457	2.02151	2.725	4930447C04Rik	1.9267	2.7569	6.763
Pglyrp1	2.5886	2.2716	2.074	4930447F04Rik	-0.0992	1.0198	13.152
Pgr	2.3055	1.6527	4.495	4930525K21Rik	2.9696	3.35299	2.417
Phka1	2.5444	2.2255	2.084	4930539E08Rik	2.7335	3.17049	2.735
Pknox1	3.2413	2.92871	2.053	4933426S08Rik	2.0939	2.64599	3.565
Pkp4	2.9041	2.4627	2.763	4933437K13Rik	2.3088	2.63119	2.1
Plekhh1	2.4727	1.6377	6.839	5730510P18Rik	-0.1617	0.97209	13.607
Pik1	2.5884	2.2186	2.343	5830405M20Rik	1.9454	2.3237	2.389
Pik4	3.0425	2.5143	3.374	5830428M24Rik	2.6059	2.93489	2.132
Pola1	1.8161	0.4813	21.617	5830431A10Rik	2.6889	3.0807	2.464
Pold2	2.7766	2.4005	2.377	5930405F01Rik	2.4204	2.7456	2.114
Pole2	2.4676	2.1393	2.129	6330512M04Rik	1.1449	2.0874	8.759
Poiq	2.5519	2.18231	2.342	7530414M10Rik	0.79	1.9321	13.81
Ppi5	2.959	2.2473	5.148	9130020L07Rik	0.3315	1.3218	9.779
Prc1	3.169	2.5074	4.587	9230111I22Rik	2.4635	2.7885	2.113
Prim1	3.518	3.14951	2.336	9430032J07Rik	3.0873	3.47299	2.43
Prkcn	2.5991	2.27431	2.112	9930013L23Rik	0.2301	1.5055	18.853
Pvph	3.1186	2.81481	2.012				
Pvrl3	1.9028	1.0075	7.857				
Racgap1	2.9483	2.1556	6.204				
Rad21	3.4011	3.05981	2.194				
Rad52b	2.7174	2.30021	2.613				
Rad54b	2.9613	2.57981	2.407				
Rad54l	2.9569	2.5739	2.415				
Rasl11b	2.087	1.2063	7.598				
Rassf2	2.1519	1.63511	3.286				
Rbl1	3.1743	2.8073	2.328				
Rbm14	2.7773	2.4103	2.328				
Rbm16	3.0491	2.7349	2.061				
Rbp1	2.236	1.81871	2.613				
Recq4	2.3868	2.0099	2.381				
Retnla	2.6936	2.3434	2.239				
Rfc4	3.2865	2.9146	2.354				
Rim2	1.2985	0.2429	11.365				
Ris2	3.3834	3.0728	2.044				
Rnase2	0.8519	-0.0891	8.729				
Rnf127	2.1566	0.6502	32.092				

Rnf144	1.9121	1.1183	6.22
Rnf2	1.6768	0.7681	8.104
Rnf26	3.1615	2.8083	2.255
Rrm2	3.5728	3.04971	3.334
S100a1	2.3923	2.0499	2.199
Scgn	2.2374	1.83341	2.535
Scm2	1.7253	0.6628	11.547
Scm3	2.5741	2.26861	2.02
Sema3d	0.7309	-0.3612	12.362
Serping1	1.8054	0.7137	12.35
Sf3a1	2.5923	2.27961	2.054
Sfmbt1	2.4781	2.0557	2.644
Sgol1	2.4342	1.8544	3.8
Sgol2	3.0961	2.5519	3.501
Shcbp1	3.2911	2.737	3.581
Siah2	2.3246	1.9846	2.187
Siat7c	2.4866	1.0982	24.456
Sik3	2.2268	1.78491	2.766
Skp2	3.1145	2.782	2.15
Slc16a8	2.0589	1.9981	4.592
Slc19a2	2.6016	2.19791	2.533
Slc1a1	1.3846	0.2515	13.586
Slc6a4	1.3612	0.34031	10.492
Slc9a5	2.1898	1.1637	10.619
Slc04a1	2.6361	2.32811	2.032
Sifn3 /// Sifn4	2.5594	2.15921	2.512
Smc2l1	3.3777	2.8968	3.026
Smurf1	2.3062	1.8276	3.01
Soat	3.5502	3.1963	2.258
Spag5	2.7648	1.8732	7.791
Spire1	1.2678	0.2803	9.716
Spp1	2.4399	1.8672	3.738
Stag1	2.4317	2.0225	2.507
Stk6	2.9251	2.3021	4.197
Stxbp5	3.0308	2.7204	2.043
Suv39h1	3.1462	2.7318	2.596
Syme2	2.3245	1.784	3.471
Syt7	2.5926	2.0742	3.299
Tacc3	2.7444	1.78651	9.075
Tceb3bp1	2.2654	1.6446	4.176
Tcf19	3.3134	2.8439	2.947
Tfb1m	2.6221	2.2456	2.379
Timeless	3.1899	2.8854	2.016
Tjp2	1.999	0.8694	13.477
Tmpo	3.3967	2.91041	3.064
Tnfrsf6	0.7763	-0.2591	10.849
Tnfrsf8	2.751	2.36531	2.43
Tnfrsf6	1.8611	0.62151	17.361
Top2a	3.743	3.12501	4.149
Tpbp	0.8035	-0.3506	14.259
Tpx2	3.4338	2.8049	4.255
Traf1	2.19	1.5791	4.082
Tnn5b	3.5676	3.1879	2.397
Trip13	3.1544	2.72791	2.669
Troap	2.3179	1.26961	11.176
Ttf2	3.1412	2.78141	2.289
Ttk	2.9799	2.26331	5.207
Tubb6	3.9782	3.6498	2.13
Tubb5	3.8086	3.4957	2.055
Tyms	2.4736	1.883	3.895
Tyms-ps	2.7901	2.30111	3.083
Ubp1	3.4283	3.0094	2.623
Ubp2l	1.7445	0.7339	10.247
Ube2c	3.6947	3.1254	3.709
Utp14b	2.6558	2.2493	2.549
Uts1	2.4337	2.11411	2.087
V1rc4	1.2405	0.1095	13.52
Vars2	2.4444	2.10461	2.186
Wdh1	3.2759	2.8975	2.29
Wee1	3.1019	2.7744	2.125
Whsc1	2.9117	2.4921	2.627
Zfp367	2.5147	2.0296	3.055
Zfp41	2.5434	2.0438	3.159
Zhu3	2.4431	2.02071	2.644
Zranb3	2.4224	2.022	2.514
1110001A07Rik	3.1678	2.8426	2.114
1110002E23Rik	2.3931	1.9897	2.531
1110025F24Rik	2.8402	2.53601	2.014
1110030H18Rik	1.6196	0.5154	12.711
1190002N15Rik	2.626	2.0214	4.023
1200008D12Rik	2.9836	2.25851	5.309
1600002H07Rik	1.9547	1.2768	4.763
1700017B05Rik	2.4451	2.06301	2.41
1700019E19Rik	2.4688	1.5086	9.124
1700022C02Rik	2.9648	2.41191	3.571
1700025G04Rik	2.2383	1.5501	4.877
1700054N08Rik	3.1019	2.5334	2.3971
1700108L22Rik	2.6594	2.29421	2.318
1810022O10Rik	2.1731	1.48591	4.866
2010317E24Rik	3.1035	2.5189	3.842
231001016Rik /// 2010012P02Rik	1.1281	0.1036	10.58
2310022K01Rik	2.5413	2.2113	2.137
2310031L18Rik	3.105	2.64041	2.914
2310034L04Rik	2.8083	2.42451	2.419
2310038K02Rik	2.092	1.4404	4.483
2310043D08Rik	3.1102	2.59471	3.277
2310061C15Rik	2.7421	2.26061	3.03
2310061N23Rik	3.5018	3.079	2.647
2410030K01Rik	3.5296	3.02241	3.215
2410078J06Rik	3.0901	2.7588	2.144
2510015F01Rik	3.0874	2.6022	3.056
2600001117Rik	2.6902	2.1327	3.609

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**TABLE S2****Powers et al. 2012**

Primers used in the study.

<b>Quantitative PCR</b>	
Cyclin D2-Fw	5'-AGC TGT CCC TGA TCC GCA AG-3'
Cyclin D2-Rev	5'-GCA GCT CTG TCA GGG CAT CA-3'
Cyclin D3-Fw	5'-CGC TGC GAG GAG GAT GTC TT-3'
Cyclin D3-Rev	5'-CAA CTG CCA TGG AGC CAC AG-3'
Cyclin E1-Fw	5'-TGG ATT GGC TAA TGG AGG TGT G-3'
Cyclin E1-Rev	5'-AAG GCT GAA ATC CCA ATA AGC TGT-3'
Cyclin E-Fw	5'-CCC CAG GAC TGC ATT TCA GC-3'
Cyclin E-Rev	5'-TGA CGC TGC AGA AAG TGC TCA-3'
Cyclin A2-Fw	5'-GCT TGT AGG CAC GGC TGC TA-3'
Cyclin A2-Rev	5'-CTG TTG GTG CAG CCA AGT CA-3'
Igkv1-117-Fw	5'-GCC TGT TAG GCT GTT GGT GCT-3'
Igkv1-117-Rev	5'-GCT TTG GAG ACT GGC CTG GT-3'
Igh-VJ558-Fw	5'-TGA GGA GCT GTC CCC AGA AA-3'
Igh-VJ558-Rev	5'-TAC CCG ACA GAC GGT CGA TG-3'
Iglv1-Fw	5'-TCT CAG CTC AGG GGC CAT TT-3'
Iglv1-Rev	5'-CAC CTG GAG CTC GGT TGT TG-3'
Igk Germline-Fw	5'-GAG GGG GTT AAG CTT TCG CCT ACC CAC-3'
Igk Germline-Rev	5'-GTT ATG TCG TTC ATA CTC GTC CTT GGT CAA-3'
cdkn1b-Fw	5'-GGC AGC TTG CCC GAG TTC TA-3'
cdkn1b-Rev	5'-TCG CTT CCT CAT CCC TGG AC-3'
B-2Microglobulin-Fw	5'-AGA CTG ATA CAT ACG CCT GCA-3'
B-2Microglobulin-Rev	5'-GCA GGT TCA AAT GAA TCT TCA-3'
degVk	5'-GGC TGC AGS TTC AGT GGC AGT GGR TCW GGR AC-3'
k-J1-R	5'-AGC ATG GTC TGA GCA CCG AGT AAA GG-3'
Q-iEnhL	5'-AGA AGT GAA GTC TGC CAG TT-3'
Q-iEnhR	5'-GTA ACC ACA TGG GAC AAT TT-3'
V <sub>H</sub> J558-Fw	5'-CGA GCT CTC CAR CAC AGC CTW CAT GCA RCT CAR C-3'
V <sub>H</sub> 7183-Fw	5'-CGG TAC CAA GAA SAM CCT GTW CCT GCA AAT GAS C-3'
V <sub>H</sub> Q52-Fw	5'-CGG TAC CAG ACT GAR CAT CAS CAA GGA CAA YTC C-3'
V <sub>H</sub> Gam3.8-Fw	5'-CAA GGG ACG GTT TGC CTT CTC TTT GGA A-3'

V <sub>H</sub> 3609-Fw	5'-KCY YTG AAG AGC CRR CTC ACA ATC TCC-3'
J <sub>H</sub> 3-Rev	5'-GTC TAG ATT CTC ACA AGA GTC CGA TAG ACC CTG G-3'
Igkv2-137-Fw	5'-CTG AGT TCC TGG GGC TGC TT-3'
Igkv2-137-Rev	5'-TGG CCT CTG CAG GAA CCA AT-3'
Igkv9-120-Fw	5'-TGA GGG CTC CTG CAC AGA TT-3'
Igkv9-120-Rev	5'-ATG TCC TGA CTT GCC CGA CA-3'
Igkv13-85-Fw	5'-TTC TGC TCT TCC TGC TGT TCA GA-3'
Igkv13-85-Rev	5'-GGA GCA TTT CCT GGT TTC TGC-3'
Igkv4-70-Fw	5'-TGC AGA TTT TCA GCT TCC TGC T-3'
Igkv4-70-Rev	5'-CTC CCC TGG AGA TGC AGA CA-3'
Igkv12-41-Fw	5'-ACT CAG GTC CTG GCG TTG CT-3'
Igkv12-41-Rev	5'-TTG CTC GAC ATG TGA TGG TGA-3'
Igkv3-5-Fw	5'-GCT GCT CTG GGT TCC AGG TT-3'
Igkv3-5-Rev	5'-GGA GTT TGG GTG GCT GTC CT-3'
Igkv3-1-Fw	5'-CTG CTA TGG GTG CTG CTG CT-3'
Igkv3-1-Rev	5'-TGC AGG AGA TGG TGG CTC TC-3'
N chimera-Fw	5'-CCA GCG TGT CCT GCA GAG TT-3'
N chimera-Rev	5'-TCA CAC ACC TCC AGC ATC CA-3'
C chimera-Fw	5'-GCC TAG GCG CCT GCT CTA TG-3'
C chimera-Rev	5'-CAG CTT CCC TGA GGC TCT CC-3'