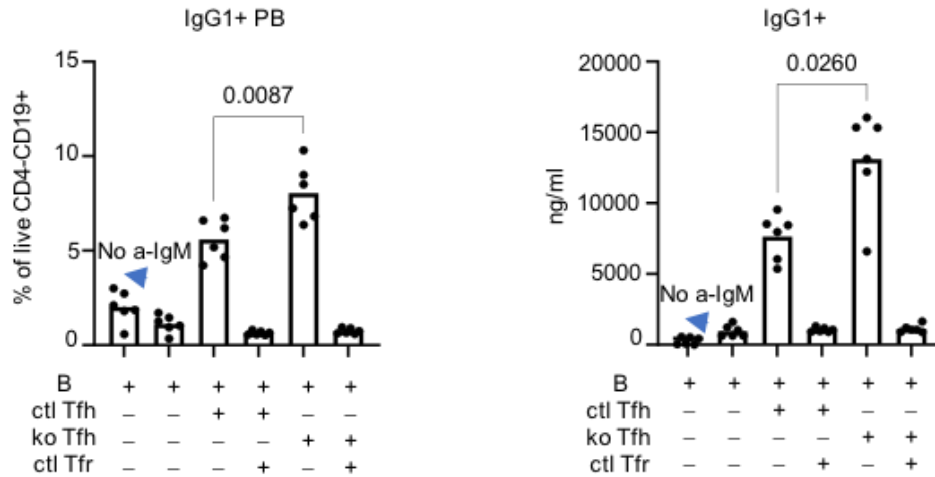
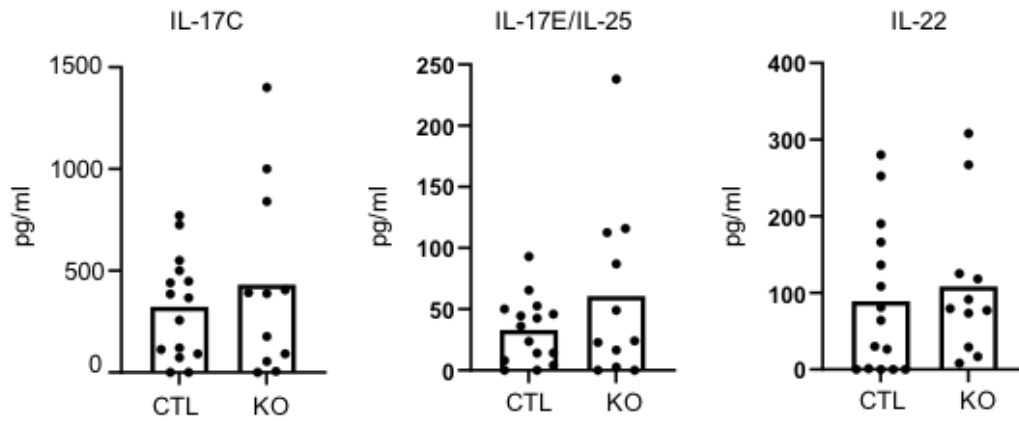


Supplemental figure 1. Frequency and number of Treg and Tfr cells in *Prdm1* CKO mice.

(A) 6-8 weeks old female FOXP3-GFP *Prdm1* CKO mice and gender/ age-matched littermate control mice were used to investigate FOXP3+ CD4+ Treg cells in the spleens. Percent and number of Treg cells were calculated and plotted. **(B)** To induce Tfr cells, 6-8 weeks old female FOXP3-GFP *Prdm1* CKO mice and gender and age-matched littermate control mice were immunized with NP-CGG (100 µg) in CFA i.p. Unimmunized group (D0) and immunized group (D7) of mice were sacrificed and Tfr cells were identified by flow cytometry analysis. Each dot represents an individual mouse, and the bar graph indicates mean (n=3).



Supplemental figure 2. Increased IgG1+ PB differentiation by Tfh cells from *Prdm1* CKO mice. 6-8 weeks old female FOXP3-GFP; *Prdm1* CKO or FOXP3-GFP; control mice were immunized with NP-CGG s.c. and B cells (CD19+), Tfh (TCR β +CD4+CXCR5+PD1+FOXP3-) and Tfr (TCR β +CD4+CXCR5+PD1+FOXP3+) cells were isolated from draining lymph nodes by cell sorter. Isolated B cells were cultured alone, with Tfh or with Tfh and Tfr in the presence of anti-IgM+ anti-CD3 as indicated in the figure except the B alone with blue arrow (no anti-IgM or anti-CD3 was added). After 7 days of culture, PB was identified by staining of GL7, IgG1 and IgM and calculated **(A)**. **(B)** Secreted IgG1 in the supernatant was measured by ELISA. Each dot represents an individual mouse, and the bar represents the mean (n=3).



Supplemental figure 3. IL-17 family cytokines secreted from Tfh cells. Spleens were collected from day 7 post NP-immunized *Prdm1* CKO or littermate CTL mice. Tfh cells were isolated and cultured overnight. Next day, the supernatant was collected and measured by MSD. The bar represents the mean, and each dot represents an individual mouse (n=5).

Supplemental table 1. Increased expression in Tfh of Prdm1 CKO mice compared to CTL mice.

Gene	baseMean	log2FC	lfcSE	stat	pvalue	padj
<i>Ighv5-9-1</i>	115.758005	5.05964362	0.7882195	6.41907948	1.371E-10	2.0524E-06
<i>Igkv5-48</i>	31.1802716	6.28135853	1.22329998	5.1347655	2.825E-07	0.00211448
<i>Gm35028</i>	17.2944547	7.30166045	1.5344246	4.75856583	1.9497E-06	0.00972917
<i>Ighv5-9</i>	38.6841584	8.46425119	1.81052278	4.67503159	2.9391E-06	0.01050597
<i>Igkv1-122</i>	15.5135705	7.14806754	1.54521361	4.62594137	3.729E-06	0.01050597
<i>Ighv1-50</i>	19.2635452	7.46457817	1.62248878	4.60069632	4.2108E-06	0.01050597
<i>Ighv7-1</i>	403.119884	1.74536412	0.41308999	4.22514265	2.3879E-05	0.05106683
<i>Ighv1-58</i>	42.8386354	7.61053888	1.85143341	4.11061983	3.946E-05	0.07383923
<i>Hpse</i>	416.852034	0.85180787	0.21636537	3.9368956	8.2542E-05	0.09560757
<i>Ighv2-9-1</i>	13.2748078	6.92661365	1.76003691	3.9354934	8.3026E-05	0.09560757
<i>Fgfbp3</i>	9.30270864	6.40663165	1.75290563	3.65486399	0.00025732	0.20597341
<i>Igkv12-41</i>	43.3441099	6.48747473	1.79914505	3.60586531	0.00031111	0.22178018
<i>Fem1c</i>	621.096862	0.67300462	0.1886287	3.56788023	0.00035988	0.24488261
<i>Iglc1</i>	950.444704	1.63597395	0.46791961	3.49627139	0.00047181	0.30708584
<i>4930452B06Rik</i>	14.8607292	4.1798241	1.28155958	3.26151367	0.00110819	0.47391982
<i>Hace1</i>	268.673208	1.11046392	0.34053897	3.26090114	0.00111059	0.47391982
<i>Bub1b</i>	934.463895	0.74642355	0.22909257	3.25817446	0.00112131	0.47391982
<i>Stbd1</i>	18.0200486	4.25815237	1.31132691	3.24720886	0.00116543	0.47391982
<i>Iglv1</i>	1159.43301	1.57104796	0.48585903	3.23354687	0.00122263	0.47391982
<i>Snx18</i>	215.112881	0.90511847	0.28120874	3.21867123	0.00128786	0.47391982
<i>Col24a1</i>	7.04318563	6.01202903	1.9059871	3.15428632	0.00160891	0.5207021

<i>Cdk16</i>	467.852867	1.04983606	0.33492293	3.13456014	0.00172112	0.52581962
<i>Adam12</i>	6.94341166	5.98327377	1.9485796	3.07058216	0.00213642	0.59226281
<i>Igkv4-80</i>	14.5410609	7.05227447	2.30865564	3.05471044	0.00225278	0.5935101
<i>Neil2</i>	6.69484445	5.93696788	1.95121093	3.04270942	0.00234459	0.5935101
<i>Igkv3-2</i>	49.0763616	4.32226868	1.42156303	3.04050443	0.00236182	0.5935101
<i>Cep131</i>	42.8916214	2.18725563	0.72977364	2.99716995	0.00272499	0.62758558
<i>Il17re</i>	13.1467253	4.77024533	1.59642683	2.9880764	0.00280739	0.62908205
<i>Gm10382</i>	23.4335887	2.13176734	0.72253524	2.95039912	0.00317364	0.68601506
<i>Isg20l2</i>	403.113017	0.70012452	0.23852288	2.93525098	0.00333278	0.69644044
<i>Hbb-bs</i>	144.751611	1.86589952	0.63602533	2.93368744	0.00334961	0.69644044
<i>Slc30a5</i>	548.631923	0.92615417	0.32383924	2.85991953	0.00423749	0.82383315
<i>Rcbtb1</i>	709.85942	0.68006515	0.2399054	2.83472211	0.00458656	0.88026599
<i>Ighv1-19</i>	42.2040267	3.37154751	1.20592944	2.79580827	0.00517701	0.93763336
<i>Ube2l6</i>	441.784416	0.625549	0.22530469	2.77645797	0.00549547	0.93763336
<i>Msl2</i>	372.78232	0.65703013	0.23668744	2.77594006	0.00550424	0.93763336
<i>Igkv9-129</i>	9.55917563	6.44174704	2.32100922	2.77540778	0.00551325	0.93763336
<i>Il23r</i>	7.12371747	5.04952772	1.82647132	2.76463564	0.00569864	0.93763336
<i>Ighv2-7</i>	11.739064	6.74689776	2.44342131	2.76125028	0.00575805	0.93763336
<i>Timm29</i>	545.723275	1.15199913	0.41777328	2.75747444	0.00582498	0.93763336
<i>Ighv14-2</i>	28.7867807	3.99944957	1.46090767	2.73764705	0.00618804	0.93841299
<i>Dnph1</i>	160.202193	0.98242732	0.3594173	2.73338905	0.00626862	0.93841299
<i>Trim62</i>	35.637321	1.59722168	0.58576522	2.72672671	0.0063966	0.94241503
<i>Lmo1</i>	9.95426607	4.35599128	1.60190393	2.71925876	0.00654284	0.95093513
<i>Cd5l</i>	214.766826	0.91614302	0.34101333	2.68653141	0.00721982	0.99622089

<i>Cd109</i>	24.0937774	3.39263399	1.26926208	2.6729184	0.00751945	0.99704377
<i>Sirpa</i>	2001.55681	0.90870081	0.34120267	2.6632289	0.00773947	0.99704377
<i>Gramd1a</i>	2934.17401	0.42663084	0.16027426	2.66187994	0.00777056	0.99704377
<i>Pif1</i>	262.073531	0.9102622	0.34230092	2.65924556	0.00783159	0.99704377
<i>Ighv1-15</i>	47.546926	4.07535745	1.54143602	2.64387065	0.0081964	0.99840724
<i>Sass6</i>	131.183055	1.03913122	0.39487515	2.63154375	0.00849979	0.99840724
<i>Fam105a</i>	2534.60298	0.67042297	0.25492123	2.62992205	0.00854044	0.99840724
<i>Gns</i>	797.181134	0.61008363	0.23228385	2.62645736	0.00862788	0.99840724
<i>Igkv1-88</i>	6.94410409	5.979015	2.28504831	2.61658144	0.00888152	0.99840724
<i>Igkv12-98</i>	9.87187214	6.49160951	2.48395146	2.61342044	0.0089641	0.99840724
<i>1700067K01Rik</i>	5.82088422	5.72623121	2.19471916	2.60909519	0.0090782	0.99840724
<i>C1qc</i>	304.553293	1.4758551	0.56821677	2.5973452	0.00939475	0.99840724
<i>Pls3</i>	28.8167884	2.31166559	0.9053465	2.55334901	0.01066925	0.99840724
<i>Ubqln1</i>	717.552015	0.67981081	0.26758131	2.54057663	0.01106698	0.99840724
<i>Slc26a2</i>	818.670112	0.41576057	0.163794	2.53831387	0.0111388	0.99840724
<i>Uhrf1</i>	1238.97269	0.40244998	0.15942303	2.52441554	0.01158908	0.99840724
<i>Gm4673</i>	21.2128369	2.26723342	0.8998692	2.51951441	0.01175168	0.99840724
<i>Cenpn</i>	178.944402	0.87533074	0.34788732	2.51613292	0.01186504	0.99840724
<i>Igkv6-13</i>	5.47853485	5.65289617	2.2607307	2.50047304	0.01240276	0.99840724
<i>Bex3</i>	477.126397	0.54627267	0.21878395	2.49685898	0.01252988	0.99840724
<i>Zfp622</i>	201.13735	1.15893476	0.46428567	2.49616742	0.01255433	0.99840724
<i>Gm10655</i>	7.51630682	4.46432982	1.79972051	2.4805684	0.01311731	0.99840724
<i>Iglv2</i>	761.261574	0.80156667	0.32420493	2.47240746	0.01342065	0.99840724
<i>Olr1</i>	16.1889427	2.90268294	1.17576646	2.46875807	0.01355829	0.99840724

<i>Abcb10</i>	58.4332462	1.24107849	0.50629378	2.4513011	0.01423408	0.99840724
<i>Spi1</i>	1402.58112	0.97334842	0.39714557	2.45086061	0.01425151	0.99840724
<i>Ccnb1</i>	679.984307	0.59352131	0.24492047	2.42332256	0.01537926	0.99840724
<i>Iglc2</i>	1011.7235	0.91460274	0.37849715	2.4164059	0.01567458	0.99840724
<i>Iglc3</i>	388.460495	1.39841705	0.58228438	2.40160495	0.01632333	0.99840724
<i>Rxrb</i>	259.021076	0.59948775	0.2497494	2.40035715	0.01637908	0.99840724
<i>Slc9a3r2</i>	8.60680537	3.74526048	1.56328531	2.39576259	0.01658583	0.99840724
<i>Zfyve9</i>	137.457905	0.71869258	0.30032598	2.39304167	0.01670934	0.99840724
<i>Ighd</i>	215.618784	0.86194283	0.36101778	2.3875357	0.01696176	0.99840724
<i>Ly6icdkll23</i>	276.0454	1.03068777	0.43171499	2.38742643	0.0169668	0.99840724
<i>Asf1b</i>	901.158175	0.37745533	0.15876183	2.37749428	0.01743071	0.99840724
<i>Khl14</i>	4.59859184	5.39855985	2.28388075	2.36376608	0.01809023	0.99840724
<i>Dnajb2</i>	142.752032	0.66044715	0.2795012	2.36294926	0.01813015	0.99840724
<i>Igkv6-14</i>	8.59672358	6.29040461	2.6764625	2.35026817	0.01875989	0.99840724
<i>Csgalnact2</i>	259.757089	1.17063523	0.49822558	2.34960887	0.01879315	0.99840724
<i>Khdc3</i>	8.63749607	4.17857836	1.7998523	2.32162292	0.02025325	0.99840724
<i>Gm16124</i>	27.9312404	1.77197398	0.76378008	2.32000549	0.02034058	0.99840724
<i>Zfp318</i>	73.4419718	1.3103986	0.5650822	2.31895219	0.02039763	0.99840724
<i>Oxsr1</i>	271.861136	0.72551405	0.31326338	2.31598747	0.02055895	0.99840724
<i>Ptafr</i>	298.52026	1.17195143	0.50847039	2.30485678	0.0211746	0.99840724
<i>4930579K19Rik</i>	8.14316684	3.66583902	1.59251736	2.30191463	0.02133999	0.99840724
<i>Gtf2h4</i>	347.643044	0.72599881	0.31546786	2.30133998	0.02137242	0.99840724
<i>Pgp</i>	322.351234	0.69510739	0.30214123	2.30060426	0.02141401	0.99840724
<i>Pacsin2</i>	783.969578	0.53673876	0.23346127	2.29904839	0.02150219	0.99840724

<i>Jchain</i>	4779.01869	0.6000044	0.26185118	2.29139463	0.0219406	0.99840724
<i>BC037032</i>	24.1921289	1.64461338	0.72084762	2.28149937	0.02251891	0.99840724
<i>Ccdc117</i>	396.988297	0.6508291	0.28545882	2.27994043	0.02261122	0.99840724
<i>Acsl3</i>	62.6690585	1.174448	0.51604554	2.27586115	0.02285432	0.99840724
<i>Ighv3-8</i>	11.9645062	3.46879706	1.52975296	2.26755376	0.02335642	0.99840724
<i>Rhbdf1</i>	9.6699625	3.00997089	1.32842797	2.26581415	0.02346276	0.99840724
<i>Tmco6</i>	308.724628	0.67998465	0.30189107	2.25241727	0.02429592	0.99840724
<i>Asic1</i>	8.10926985	3.66689109	1.63021907	2.24932412	0.02449188	0.99840724
<i>Gm4798</i>	6.13393905	4.17136515	1.85601571	2.24748375	0.02460913	0.99840724
<i>Mark4</i>	90.9806007	1.09842703	0.48885534	2.24693676	0.02464407	0.99840724
<i>Rab30</i>	18.4780576	2.41054811	1.07288869	2.24678303	0.0246539	0.99840724
<i>Uqcr11</i>	513.158441	0.56540996	0.2527246	2.23725731	0.02526953	0.99840724
<i>Gm11674</i>	4.88767781	5.47078701	2.44547302	2.2371079	0.02527929	0.99840724
<i>Igkv3-7</i>	21.5402372	3.30814892	1.4821369	2.23201306	0.0256141	0.99840724
<i>Igkv4-57</i>	32.0169405	2.46433127	1.10576289	2.22862542	0.02583884	0.99840724
<i>Xxylt1</i>	99.1291112	1.12058066	0.50306548	2.22750456	0.02591357	0.99840724
<i>Cenpi</i>	203.053088	0.61018133	0.27435039	2.22409498	0.02614205	0.99840724
<i>Tob1</i>	198.333556	0.68448056	0.30789968	2.22306353	0.02621152	0.99840724
<i>Ighv1-53</i>	54.8159648	1.44731648	0.65507929	2.20937602	0.0271485	0.99840724
<i>Hectd3</i>	770.61753	0.50806454	0.23145754	2.19506579	0.02815888	0.99840724
<i>Tusc2</i>	346.782066	0.84759279	0.38703617	2.18995757	0.02852731	0.99840724
<i>Sod2</i>	1043.06487	0.41535983	0.18984193	2.18792461	0.02867509	0.99840724
<i>Il13ra1</i>	510.735346	0.70061117	0.320571	2.18551015	0.02885146	0.99840724
<i>Sqle</i>	400.303623	0.63722476	0.29160064	2.18526534	0.0288694	0.99840724

<i>Atp13a2</i>	794.668218	0.57706128	0.26450314	2.1816803	0.02913314	0.99840724
<i>Ngp</i>	239.560588	1.09405741	0.50191109	2.17978329	0.02927353	0.99840724
<i>Iglj1</i>	80.8974019	1.25002606	0.57500194	2.17395104	0.02970881	0.99840724
<i>Siglecg</i>	185.612166	0.78868726	0.36344733	2.17001805	0.03000548	0.99840724
<i>Gch1</i>	266.691286	0.98429858	0.45510234	2.1628071	0.03055602	0.99840724
<i>Ankrd29</i>	25.3839643	1.76578688	0.82062154	2.15176765	0.03141566	0.99840724
<i>Cyp2d22</i>	29.0534434	1.58001033	0.73537457	2.14857898	0.03166779	0.99840724
<i>Gm31024</i>	28.7899092	1.33704748	0.62294721	2.14632552	0.03184702	0.99840724
<i>5830416l19Rik</i>	47.6477454	1.2495466	0.58255067	2.1449578	0.03195622	0.99840724
<i>Tmem177</i>	172.431342	0.72286647	0.33706306	2.14460305	0.0319846	0.99840724
<i>Arhgap39</i>	189.9317	0.64607865	0.30142622	2.14340558	0.03208055	0.99840724
<i>Wscd1</i>	4.43177877	5.33916135	2.49936349	2.13620843	0.03266243	0.99840724
<i>Thap11</i>	457.563662	0.82780343	0.38762722	2.13556578	0.03271482	0.99840724
<i>Prim2</i>	432.174206	0.49078297	0.22997907	2.13403319	0.03284006	0.99840724
<i>Igkv14-130</i>	11.3694214	6.69598472	3.13788488	2.13391663	0.03284961	0.99840724
<i>Ighv1-31</i>	11.3694214	6.69598472	3.13788488	2.13391663	0.03284961	0.99840724
<i>Gas2l3</i>	113.007969	0.96859157	0.45465058	2.13040873	0.03313788	0.99840724
<i>Rps4l</i>	32.9783915	2.48372444	1.16597018	2.13017835	0.03315689	0.99840724
<i>Wfs1</i>	90.1513817	0.91454242	0.42962948	2.12867709	0.03328099	0.99840724
<i>Pcdhga5</i>	5.84996507	4.10338542	1.93056225	2.12548724	0.03354598	0.99840724
<i>Ighg2b</i>	52.9495229	2.75255469	1.29603923	2.1238205	0.03368516	0.99840724
<i>Ndfip2</i>	413.388578	0.55980345	0.26408637	2.11977412	0.0340251	0.99840724
<i>Hba-a1</i>	48.9209582	1.28962948	0.6087473	2.11849725	0.03413298	0.99840724
<i>5031434O11Rik</i>	30.0714409	1.83980056	0.87137343	2.11138015	0.03473965	0.99840724

<i>Ighv9-1</i>	7.33653089	6.06838679	2.87567412	2.11024843	0.03483696	0.99840724
<i>IgIj3</i>	40.9515212	1.73605808	0.82370106	2.10763123	0.0350629	0.99840724
<i>Mcur1</i>	521.944156	0.78279843	0.37290331	2.09919947	0.03579932	0.99840724
<i>Ddx3x</i>	1946.20215	0.37718942	0.1798496	2.09724909	0.03597153	0.99840724
<i>B3galt6</i>	208.065103	0.65331219	0.31160924	2.09657515	0.0360312	0.99840724
<i>Slc30a9</i>	480.383583	0.66003166	0.31481476	2.09657153	0.03603152	0.99840724
<i>Derl3</i>	80.7332274	1.11412201	0.53147706	2.09627487	0.03605781	0.99840724
<i>Inpp1</i>	107.760983	1.01182072	0.48339086	2.09317303	0.03633371	0.99840724
<i>Ccr12</i>	182.723012	0.57835248	0.2770039	2.08788567	0.03680815	0.99840724
<i>Ttc12</i>	7.50241976	3.55565884	1.70548229	2.08484067	0.03708377	0.99840724
<i>Mycbp</i>	121.869869	0.87951484	0.42189499	2.08467712	0.03709862	0.99840724
<i>Cd300lf</i>	172.444852	0.89094967	0.42750721	2.08405764	0.03715492	0.99840724
<i>Dscc1</i>	112.266881	0.7232688	0.34747575	2.08149436	0.03738868	0.99840724
<i>Bex6</i>	28.499711	1.83412794	0.88194896	2.07963048	0.03755944	0.99840724
<i>Nphp1</i>	17.0900367	2.50986668	1.21446351	2.06664643	0.03876748	0.99840724
<i>Epha4</i>	20.6175206	2.44453547	1.18304237	2.06631269	0.03879896	0.99840724
<i>Wdr36</i>	857.697595	0.55730536	0.26982967	2.0653969	0.03888546	0.99840724
<i>Fbrs1</i>	196.892591	0.85658333	0.41586001	2.05978766	0.03941884	0.99840724
<i>Ighd1-1</i>	29.2147127	1.51149631	0.7344826	2.05790622	0.03959914	0.99840724
<i>E330021D16Rik</i>	5.23004074	3.94781123	1.9184458	2.05781745	0.03960766	0.99840724
<i>Gm30238</i>	3.68445147	5.07628378	2.46966835	2.0554516	0.03983541	0.99840724
<i>Phldb1</i>	33.5457992	1.26625573	0.61994306	2.04253555	0.04109844	0.99840724
<i>Gm43339</i>	20.311789	1.89426092	0.93045869	2.0358356	0.04176687	0.99840724
<i>Prr7</i>	5.8455944	5.73338592	2.82829208	2.02715482	0.04264658	0.99840724

<i>Slc37a2</i>	172.123502	0.7142661	0.35359563	2.02000829	0.04338253	0.99840724
<i>Car9</i>	21.9914294	2.48890279	1.23677301	2.0124168	0.04417602	0.99840724
<i>Lancl3</i>	84.5390048	0.89695868	0.44735033	2.00504751	0.04495797	0.99840724
<i>St8sia6</i>	359.393618	0.68368694	0.34118152	2.00388037	0.04508288	0.99840724
<i>Soat1</i>	1285.95687	0.50461065	0.25194318	2.00287484	0.04519072	0.99840724
<i>Igkv4-61</i>	24.7282299	7.81919125	3.90827243	2.00067713	0.0454272	0.99840724
<i>Slc27a4</i>	76.5821205	1.55057692	0.77829546	1.99227286	0.04634113	0.99840724
<i>Zfp934</i>	50.9128696	1.44419271	0.72523034	1.99135726	0.04644162	0.99840724
<i>Plcd1</i>	13.8194254	2.89718475	1.45542062	1.9906168	0.04652303	0.99840724
<i>Rps18-ps3</i>	58.7449418	0.88761114	0.4465017	1.98792332	0.04682017	0.99840724
<i>Sdc3</i>	365.921729	0.7267453	0.36629389	1.98404976	0.04725029	0.99840724
<i>Tspan9</i>	71.7787747	0.97272757	0.49070942	1.98228838	0.04744697	0.99840724
<i>Ppp4c</i>	2909.36726	0.58160806	0.29394686	1.97861632	0.04785922	0.99840724
<i>Tnfrsf13c</i>	66.8939873	1.08829091	0.55023255	1.97787446	0.04794287	0.99840724
<i>2610306M01Rik</i>	33.5468813	1.32894502	0.673086	1.97440598	0.0483356	0.99840724
<i>Sumf1</i>	391.121578	0.90279527	0.45875411	1.96792847	0.04907627	0.99840724
<i>Gm37593</i>	18.776116	2.42847455	1.23603982	1.96472194	0.04944643	0.99840724
<i>Gm37893</i>	15.8542124	1.80217252	0.91749988	1.96422098	0.04950447	0.99840724
<i>Hacd2</i>	191.811166	0.69890743	0.35598778	1.96329051	0.04961243	0.99840724
<i>F11r</i>	37.3696237	1.17969282	0.60089372	1.96323042	0.04961941	0.99840724

Supplemental table 2. Decreased expression in Tfh of Prdm1 CKO mice compared to CTL mice.

Gene	baseMean	log2FC	lfcSE	stat	pvalue	padj
<i>Igkv4-70</i>	16.9614287	-7.8190248	1.91522804	-4.0825555	4.4543E-05	0.07409013
<i>Prps111</i>	21.6000602	-3.7016003	0.92852404	-3.9865422	6.7043E-05	0.09560757
<i>Nbas</i>	308.369534	-0.8372288	0.21147732	-3.958953	7.5279E-05	0.09560757
<i>Tmem8b</i>	44.6664942	-2.695158	0.72022835	-3.7420882	0.0001825	0.19188449
<i>Kmt2d</i>	4888.60202	-0.6948023	0.18632584	-3.7289635	0.00019227	0.19188449
<i>Gm39321</i>	30.2113925	-5.8232136	1.57203733	-3.7042464	0.00021202	0.19837134
<i>Sorbs1</i>	215.275546	-0.9496841	0.25899745	-3.66677	0.00024563	0.20597341
<i>Ighv1-36</i>	37.9794054	-5.6344549	1.54871153	-3.6381565	0.0002746	0.20597341
<i>Slc5a3</i>	374.837993	-0.8829601	0.24273095	-3.6376082	0.00027518	0.20597341
<i>Gm45251</i>	20.0176274	-4.9630393	1.42723778	-3.4773738	0.00050635	0.31499559
<i>Ddc</i>	112.266318	-1.2305464	0.3550112	-3.4662186	0.00052783	0.31499559
<i>Ccl5</i>	784.048874	-0.8261983	0.23927264	-3.4529577	0.00055448	0.31499559
<i>Rgs11</i>	179.795405	-0.939038	0.27246998	-3.4463907	0.00056813	0.31499559
<i>Cyp1a1</i>	38.7732147	-2.6466584	0.78351622	-3.3779242	0.00073035	0.39047756
<i>Cldn10</i>	90.4423241	-1.2280507	0.36723833	-3.3440156	0.00082575	0.4262583
<i>Ahrr</i>	31.7030662	-4.4937373	1.35525985	-3.3157754	0.00091389	0.4527609
<i>Rbm44</i>	41.3346887	-1.7833891	0.53901352	-3.3086167	0.00093758	0.4527609
<i>Fcer1a</i>	76.1921106	-1.5742713	0.48262046	-3.261924	0.00110659	0.47391982
<i>Gm18290</i>	9.24790672	-6.9378229	2.15092324	-3.2255093	0.00125749	0.47391982
<i>Gm42636</i>	38.4841614	-3.198217	0.9930877	-3.2204779	0.00127977	0.47391982
<i>Gzma</i>	344.300529	-1.1542184	0.35945518	-3.2110217	0.00132264	0.47391982

<i>Mysm1</i>	1388.12833	-0.514869	0.16055411	-3.2068252	0.00134209	0.47391982
<i>Ulk2</i>	260.965349	-0.8499305	0.26585908	-3.1969212	0.00138903	0.47391982
<i>Cd200r3</i>	159.347172	-1.2480797	0.39049989	-3.1961078	0.00139295	0.47391982
<i>Gm26732</i>	213.02059	-0.8719369	0.27637847	-3.1548654	0.00160572	0.5207021
<i>A530041M06Rik</i>	176.976118	-1.4761406	0.4686719	-3.1496248	0.0016348	0.5207021
<i>Zfp407</i>	281.756477	-0.8667542	0.27616711	-3.1385133	0.00169807	0.52581962
<i>Gm16107</i>	10.1779264	-6.0967184	1.95657425	-3.1160169	0.00183312	0.54883548
<i>Gm37655</i>	29.6511863	-4.6382711	1.49282422	-3.1070444	0.00188968	0.55467677
<i>Gm38125</i>	11.325855	-4.5435037	1.47373626	-3.0829829	0.00204937	0.58276461
<i>Ap1s3</i>	33.2507639	-1.7717624	0.57506517	-3.0809767	0.00206323	0.58276461
<i>Rnf24</i>	69.7114449	-2.4523854	0.80169252	-3.05901	0.0022207	0.5935101
<i>Gm29112</i>	31.0923762	-3.77255	1.23799432	-3.047308	0.00230901	0.5935101
<i>Edaradd</i>	42.2314696	-1.8669919	0.61482521	-3.0366222	0.00239245	0.5935101
<i>Vps13c</i>	405.084437	-0.9948876	0.32806797	-3.0325655	0.00242484	0.5935101
<i>Siglec5</i>	27.0431463	-2.4132368	0.80407967	-3.0012409	0.00268882	0.62758558
<i>Mfsd4a</i>	262.571534	-1.3523637	0.45103481	-2.9983578	0.00271439	0.62758558
<i>Selp</i>	25.6194564	-3.7330591	1.24968849	-2.9871917	0.00281553	0.62908205
<i>Nlrc5</i>	2529.827	-0.4986532	0.1672505	-2.9814751	0.00286863	0.63152129
<i>Gm26947</i>	12.9861251	-6.4573535	2.19109629	-2.947088	0.00320782	0.68601506
<i>Utrn</i>	5638.09225	-0.6217013	0.21339186	-2.9134258	0.00357487	0.7330928
<i>Myopos</i>	336.309577	-0.8054994	0.27785585	-2.8989828	0.00374375	0.75735129
<i>Zc2hc1c</i>	23.3579764	-2.7855122	0.96592671	-2.8837718	0.00392943	0.78431496
<i>Ggt1</i>	74.4093776	-1.6358382	0.56993867	-2.8702005	0.00410212	0.80800902
<i>Gm43677</i>	13.4616607	-4.8366909	1.71309533	-2.8233635	0.00475227	0.90052419

<i>AC122035.2</i>	15.6369818	-3.08665	1.10417161	-2.7954441	0.00518285	0.93763336
<i>Gm9938</i>	17.5241823	-3.4428343	1.232487	-2.7934042	0.00521565	0.93763336
<i>Tmod1</i>	45.3311499	-2.2127888	0.79375795	-2.7877375	0.00530775	0.93763336
<i>Patl2</i>	22.1270942	-2.5178548	0.90467407	-2.7831623	0.00538319	0.93763336
<i>Stx3</i>	110.968299	-1.2026524	0.43407204	-2.7706285	0.00559482	0.93763336
<i>1700019J19Rik</i>	8.84220852	-5.1534757	1.86635517	-2.7612513	0.00575803	0.93763336
<i>Ogt</i>	4411.57091	-0.504779	0.18296391	-2.7588992	0.00579964	0.93763336
<i>Dip2c</i>	23.3604032	-2.5676871	0.93599848	-2.7432599	0.00608325	0.93841299
<i>Gm10801</i>	77.8882276	-2.7189016	0.99172166	-2.7415974	0.00611412	0.93841299
<i>Sdccag8</i>	513.651651	-0.6961144	0.25396092	-2.7410294	0.0061247	0.93841299
<i>Gm7967</i>	35.7804051	-3.1662995	1.15696862	-2.7367203	0.0062055	0.93841299
<i>Gramd1c</i>	94.4573564	-1.7435261	0.63714154	-2.7364815	0.00621001	0.93841299
<i>Slc20a1</i>	1333.81995	-0.553335	0.20302472	-2.7254564	0.00642126	0.94241503
<i>Igkv11-125</i>	8.27496562	-6.7901267	2.50253953	-2.7132945	0.00666179	0.95783036
<i>Gm36955</i>	32.4969766	-2.8430531	1.04922786	-2.7096622	0.00673518	0.95783036
<i>Ighv1-4</i>	8.46907317	-4.0087395	1.48068654	-2.7073519	0.00678223	0.95783036
<i>Psd3</i>	27.9038188	-2.0678032	0.76607039	-2.699234	0.00694993	0.97234065
<i>Gm37531</i>	128.838468	-1.3667123	0.50938332	-2.6830723	0.00729492	0.99622089
<i>Wdr60</i>	34.4265097	-2.0929179	0.7803826	-2.6819125	0.00732026	0.99622089
<i>Ipcef1</i>	1492.75196	-0.7944045	0.29718498	-2.6730976	0.00751544	0.99704377
<i>Kcnab1</i>	24.4718483	-2.5037515	0.93870094	-2.6672515	0.00764744	0.99704377
<i>Mtor</i>	407.386616	-0.4987246	0.18758872	-2.6586067	0.00784645	0.99704377
<i>Gm44661</i>	14.2559125	-3.5858989	1.34912593	-2.6579423	0.00786193	0.99704377
<i>Ahdcd1</i>	128.610736	-0.8846955	0.33319137	-2.6552174	0.00792573	0.99704377

<i>Ighv5-17</i>	238.888362	-1.5713886	0.59579735	-2.6374549	0.00835307	0.99840724
<i>Abcb7</i>	318.047276	-0.7084508	0.26922803	-2.6314154	0.008503	0.99840724
<i>Fxyd4</i>	34.1043789	-2.1013551	0.80112	-2.6230217	0.00871537	0.99840724
<i>Gm45407</i>	15.9276145	-2.9780482	1.13606716	-2.6213663	0.00875781	0.99840724
<i>Rsl1</i>	231.942078	-0.7193917	0.27531374	-2.6129886	0.00897543	0.99840724
<i>Strc</i>	6.28681625	-4.647832	1.78529631	-2.6033953	0.00923055	0.99840724
<i>Kif1b</i>	679.801641	-0.6731311	0.25966618	-2.5922941	0.00953382	0.99840724
<i>Ighv2-2</i>	104.901205	-1.4330906	0.55569927	-2.5788958	0.00991167	0.99840724
<i>Slc2a4rg-ps</i>	684.169281	-0.5353207	0.20935301	-2.5570239	0.0105572	0.99840724
<i>Gm48138</i>	25.7479376	-2.322956	0.91166716	-2.5480308	0.01083329	0.99840724
<i>Cd28</i>	4684.44757	-0.370443	0.14555128	-2.545103	0.01092455	0.99840724
<i>Epn2</i>	34.6532549	-2.3407623	0.9243763	-2.5322612	0.01133295	0.99840724
<i>A930024E05Rik</i>	84.0906746	-0.9375064	0.37036269	-2.5313199	0.01136342	0.99840724
<i>Tmem267</i>	19.6125133	-2.3856181	0.94378916	-2.5277024	0.01148116	0.99840724
<i>Secisbp2</i>	774.452536	-0.5372006	0.21280508	-2.5243785	0.0115903	0.99840724
<i>9430018G01Rik</i>	10.9378933	-5.4895039	2.17979397	-2.5183591	0.01179031	0.99840724
<i>Pibf1</i>	314.306454	-0.8999261	0.35736026	-2.5182601	0.01179362	0.99840724
<i>Ms4a2</i>	172.421249	-1.5998607	0.63667691	-2.5128298	0.01197671	0.99840724
<i>Dnajc16</i>	201.795012	-0.6927238	0.27584544	-2.5112752	0.01202959	0.99840724
<i>Josd1</i>	193.747549	-1.3537592	0.53991352	-2.5073631	0.01216357	0.99840724
<i>Gm43421</i>	17.4107253	-2.8441393	1.13682246	-2.5018324	0.01235524	0.99840724
<i>Ramp3</i>	93.306793	-1.1608502	0.46462809	-2.4984502	0.01247377	0.99840724
<i>Ranbp2</i>	874.411308	-0.7599332	0.30523224	-2.4896884	0.01278551	0.99840724
<i>Gm26551</i>	263.672586	-1.0948356	0.440152	-2.4874034	0.01286794	0.99840724

<i>Ccl4</i>	228.835877	-1.0816041	0.43595721	-2.4809869	0.01310192	0.99840724
<i>Agl</i>	140.972867	-1.0930985	0.44081223	-2.4797372	0.01314793	0.99840724
<i>Plod1</i>	250.51639	-0.7527149	0.30405288	-2.4756051	0.01330106	0.99840724
<i>Zfp738</i>	268.701592	-0.5987956	0.24285586	-2.4656419	0.0136768	0.99840724
<i>Inpp4b</i>	4210.99399	-0.5796571	0.23565681	-2.4597509	0.01390335	0.99840724
<i>Gm48855</i>	65.8593189	-1.4134949	0.57507183	-2.4579449	0.01397346	0.99840724
<i>Gm40309</i>	285.563814	-0.8340056	0.33952013	-2.4564246	0.01403272	0.99840724
<i>Gon4l</i>	195.343404	-0.8427945	0.34317552	-2.4558701	0.01405439	0.99840724
<i>9530085L11Rik</i>	21.2218235	-2.6526404	1.08221396	-2.4511239	0.01424109	0.99840724
<i>Mical2</i>	74.6749897	-1.4561454	0.59419521	-2.4506179	0.01426113	0.99840724
<i>Gm43336</i>	78.0822455	-1.4482645	0.59119014	-2.449744	0.01429578	0.99840724
<i>Gm37906</i>	98.5802799	-1.6270941	0.66439133	-2.4489997	0.01432536	0.99840724
<i>Adamts14</i>	53.7611846	-2.2269479	0.91089054	-2.444803	0.01449313	0.99840724
<i>Dock8</i>	1608.20557	-0.4408688	0.18060947	-2.441006	0.01464641	0.99840724
<i>Lypd6b</i>	164.131411	-0.9708797	0.39809938	-2.4387872	0.01473664	0.99840724
<i>Slmap</i>	337.56977	-0.8575688	0.35251671	-2.432704	0.01498655	0.99840724
<i>Syt12</i>	396.826593	-0.8264915	0.33980075	-2.4322827	0.01500399	0.99840724
<i>Gm10388</i>	18.3605513	-2.6658437	1.0968197	-2.4305214	0.01507712	0.99840724
<i>Jag2</i>	58.5207753	-2.1820143	0.90164452	-2.4200383	0.01551887	0.99840724
<i>Ankrd44</i>	2542.55626	-0.4863623	0.20116765	-2.4176965	0.0156191	0.99840724
<i>Gm43589</i>	7.38856567	-6.6189784	2.74574226	-2.4106336	0.01592484	0.99840724
<i>Zfp949</i>	322.481174	-0.563633	0.23405981	-2.4080725	0.016037	0.99840724
<i>Gm48314</i>	21.5772469	-2.1253709	0.88264175	-2.4079655	0.0160417	0.99840724
<i>Ice1</i>	505.371415	-0.9673703	0.40188667	-2.4070723	0.01608099	0.99840724

<i>Trbv29</i>	107.642108	-0.9008787	0.37452407	-2.4053959	0.01615495	0.99840724
<i>Pcdhgc4</i>	52.8562182	-1.9358218	0.80553824	-2.4031407	0.01625493	0.99840724
<i>Gm47585</i>	200.543166	-1.1046758	0.45970705	-2.4029995	0.01626121	0.99840724
<i>Nmt2</i>	926.307618	-0.611684	0.25487181	-2.3999674	0.01639653	0.99840724
<i>Gm45884</i>	38.6526984	-2.1355035	0.89069172	-2.3975787	0.01650383	0.99840724
<i>D130062J10Rik</i>	42.1992788	-2.0229221	0.84479935	-2.3945593	0.01664035	0.99840724
<i>Sla2</i>	896.496774	-0.4050759	0.16923514	-2.3935685	0.01668537	0.99840724
<i>Tmem185b</i>	648.914537	-0.5875923	0.2462023	-2.3866238	0.01700388	0.99840724
<i>Gm48624</i>	41.2013858	-2.2112087	0.92770101	-2.383536	0.01714721	0.99840724
<i>Gm5122</i>	11.4664655	-5.5714108	2.3400491	-2.3808948	0.01727064	0.99840724
<i>6030400A10Rik</i>	16.7260472	-2.3662575	0.99494452	-2.3782809	0.01739357	0.99840724
<i>Gm18646</i>	34.5873569	-2.2020397	0.93555453	-2.3537268	0.01858627	0.99840724
<i>Gm42989</i>	6.94255958	-6.5291258	2.77557044	-2.3523546	0.01865498	0.99840724
<i>AC154562.1</i>	5.36958915	-5.1607673	2.20098064	-2.3447582	0.01903942	0.99840724
<i>Smyd4</i>	349.620507	-0.6614441	0.28221916	-2.3437249	0.01909225	0.99840724
<i>Ranbp10</i>	439.11948	-0.6862196	0.29293286	-2.3425831	0.01915077	0.99840724
<i>Kif21b</i>	2162.84224	-0.3130098	0.1336638	-2.3417692	0.01919258	0.99840724
<i>Spg11</i>	333.334773	-0.7414733	0.317191	-2.3376241	0.01940676	0.99840724
<i>Tub</i>	24.4090193	-3.042626	1.30305464	-2.3349949	0.01954368	0.99840724
<i>Dennd1c</i>	2765.59536	-0.3594043	0.1539302	-2.3348527	0.01955112	0.99840724
<i>Dnd1</i>	38.8503001	-2.3846603	1.02594614	-2.3243523	0.02010662	0.99840724
<i>Gm13710</i>	16.553112	3.31175025	1.42589276	2.32258017	0.02020172	0.99840724
<i>E230034D01Rik</i>	31.7144779	-1.4694101	0.63292219	-2.3216283	0.02025296	0.99840724
<i>Slc7a8</i>	139.189507	-1.1640979	0.50218958	-2.3180446	0.0204469	0.99840724

<i>Mtg1</i>	359.972546	-0.5292611	0.22877284	-2.3134789	0.02069632	0.99840724
<i>Gm17195</i>	18.6517231	-2.0570916	0.89052845	-2.3099673	0.02088996	0.99840724
<i>Rasl10a</i>	7.23314026	-5.6028484	2.43682082	-2.2992451	0.02149102	0.99840724
<i>Gm37423</i>	124.351854	-1.1411537	0.49718652	-2.2952225	0.02172038	0.99840724
<i>Gm10614</i>	12.2687317	-3.6211576	1.57778113	-2.295095	0.02172768	0.99840724
<i>Gm38118</i>	169.75658	-1.3089128	0.57291636	-2.2846491	0.02233341	0.99840724
<i>Gm16845</i>	37.9174981	-1.4260662	0.62626543	-2.2770954	0.02278053	0.99840724
<i>Gm37598</i>	15.943482	-2.6966982	1.1852859	-2.2751458	0.02289718	0.99840724
<i>Pkd1</i>	701.443876	-0.5470703	0.24050692	-2.274655	0.02292663	0.99840724
<i>Gm44851</i>	10.3839324	-3.8670126	1.70101048	-2.273362	0.02300437	0.99840724
<i>Zfx</i>	420.65795	-0.5294226	0.23292176	-2.2729633	0.02302839	0.99840724
<i>Gm43672</i>	162.172168	-1.0791538	0.47546981	-2.2696579	0.02322835	0.99840724
<i>Hgf</i>	118.453407	-1.0082021	0.44452318	-2.268053	0.02332598	0.99840724
<i>4930444A19Rik</i>	45.3604243	-1.5636092	0.68964963	-2.2672516	0.02337486	0.99840724
<i>Ccdc97</i>	805.336588	-0.3934977	0.17358291	-2.2669149	0.02339543	0.99840724
<i>Rab11fip3</i>	97.6945342	-1.015992	0.44988966	-2.2583137	0.02392611	0.99840724
<i>Gucy1a1</i>	234.496577	-0.6321113	0.27996055	-2.2578583	0.02395449	0.99840724
<i>Gm38387</i>	17.5947728	-2.099311	0.93035805	-2.2564549	0.02404216	0.99840724
<i>Cd8a</i>	19.2562541	-2.050607	0.90908285	-2.2556877	0.02409019	0.99840724
<i>Nr3c1</i>	1097.3664	-0.5678488	0.25196152	-2.2537123	0.02421427	0.99840724
<i>Tpbp</i>	10.0351371	-7.0611036	3.13350956	-2.2534169	0.02423287	0.99840724
<i>Gm37166</i>	13.2350158	-2.9243744	1.30296981	-2.2443915	0.02480722	0.99840724
<i>A730011C13Rik</i>	79.5234695	-1.0157865	0.45376531	-2.2385724	0.02518375	0.99840724
<i>mt-Co1</i>	62897.317	-0.6392328	0.28557155	-2.238433	0.02519283	0.99840724

<i>Tbc1d2b</i>	623.220577	-0.4947272	0.22103089	-2.2382717	0.02520335	0.99840724
<i>Heatr5a</i>	362.479919	-0.9922809	0.44376177	-2.2360666	0.02534741	0.99840724
<i>Kdm3b</i>	628.296946	-0.5823616	0.26060505	-2.2346521	0.0254402	0.99840724
<i>Hsf1</i>	1025.84488	-0.3739532	0.16752962	-2.2321619	0.02560427	0.99840724
<i>Acvr1c</i>	7.96728154	-5.0328307	2.25840065	-2.2284933	0.02584764	0.99840724
<i>2810403D21Rik</i>	59.6123257	-1.2111725	0.54361871	-2.2279815	0.02588175	0.99840724
<i>Gm4759</i>	2028.59807	-0.6387364	0.28677556	-2.2273043	0.02592694	0.99840724
<i>Itga4</i>	4824.3197	-0.4793327	0.21543591	-2.2249433	0.02608505	0.99840724
<i>Zbtb24</i>	672.850602	-0.447973	0.20207517	-2.2168634	0.02663243	0.99840724
<i>Ndr3</i>	1691.60478	-0.4356026	0.1967554	-2.2139294	0.02683364	0.99840724
<i>Edem3</i>	156.0268	-1.1449727	0.5173461	-2.2131657	0.02688622	0.99840724
<i>Kat6a</i>	1118.07643	-0.5238516	0.23674518	-2.2127235	0.02691671	0.99840724
<i>Gm1966</i>	1991.96617	-0.3689311	0.1667716	-2.2121939	0.02695327	0.99840724
<i>Zbtb3</i>	40.6059493	-1.6003194	0.72350966	-2.211884	0.02697468	0.99840724
<i>Nisch</i>	3058.00664	-0.465888	0.21092498	-2.2087855	0.02718957	0.99840724
<i>Spin4</i>	18.8168323	-2.5400921	1.15026521	-2.2082665	0.0272257	0.99840724
<i>Tmem39b</i>	116.683668	-0.7575137	0.34338118	-2.2060433	0.02738097	0.99840724
<i>Rhoh</i>	4741.23711	-0.2860905	0.1299286	-2.2019058	0.02767197	0.99840724
<i>Macf1</i>	4246.36174	-0.6079467	0.27613585	-2.2016218	0.02769203	0.99840724
<i>Adamts17</i>	7.74427849	-4.9913503	2.26731693	-2.2014348	0.02770526	0.99840724
<i>Trdmt1</i>	235.999482	-0.9514486	0.43228822	-2.2009588	0.02773894	0.99840724
<i>Adamts6</i>	381.61669	-0.9394089	0.42725072	-2.1987298	0.02789714	0.99840724
<i>Zfp831</i>	538.318372	-0.8725576	0.39699363	-2.1979133	0.02795528	0.99840724
<i>Calcr1</i>	235.306806	-0.9717393	0.44255402	-2.195753	0.02810963	0.99840724

<i>Tex15</i>	90.8285743	-1.9524001	0.88952383	-2.1948822	0.02817205	0.99840724
<i>Gm46367</i>	15.825102	-2.4883611	1.13486041	-2.1926583	0.02833201	0.99840724
<i>Mylk2</i>	11.889765	-2.6453501	1.20910953	-2.1878499	0.02868054	0.99840724
<i>Mid2</i>	15.5641635	-3.2140314	1.47015618	-2.1861837	0.02880217	0.99840724
<i>Neb</i>	222.479105	-1.2324345	0.56378386	-2.1860052	0.02881522	0.99840724
<i>Gdpd3</i>	23.2694239	-1.7143538	0.78485697	-2.1842881	0.02894108	0.99840724
<i>Gm45358</i>	7.80812353	-4.0322299	1.84954216	-2.1801232	0.02924833	0.99840724
<i>Gm45191</i>	140.018557	-1.2347258	0.56756447	-2.1754812	0.02959408	0.99840724
<i>Msh3</i>	492.619535	-0.4638092	0.21339463	-2.1734812	0.02974412	0.99840724
<i>Gprin3</i>	874.062188	-0.6395844	0.29432597	-2.173048	0.02977671	0.99840724
<i>Chst2</i>	379.921135	-0.6453494	0.29753809	-2.1689641	0.03008541	0.99840724
<i>Chd7</i>	791.168899	-0.6006034	0.27697102	-2.1684702	0.03012293	0.99840724
<i>Gm13357</i>	13.4457366	-2.3239293	1.0727706	-2.1662872	0.03028924	0.99840724
<i>Cep192</i>	709.782663	-0.4421659	0.20431825	-2.1641038	0.03045638	0.99840724
<i>Ctns</i>	326.458623	-0.526676	0.24344034	-2.1634707	0.030505	0.99840724
<i>Polr2a</i>	1553.50152	-0.4637125	0.21469514	-2.159865	0.03078312	0.99840724
<i>4732491K20Rik</i>	16.7766711	-2.8581495	1.32414966	-2.1584792	0.03089059	0.99840724
<i>lft172</i>	141.037791	-0.7953097	0.36848686	-2.1583123	0.03090356	0.99840724
<i>Krba1</i>	664.911017	-0.7822439	0.36252143	-2.1577867	0.03094442	0.99840724
<i>Strbp</i>	255.632087	-0.6245917	0.28959388	-2.1567847	0.03102244	0.99840724
<i>2700046G09Rik</i>	6.89316205	-3.3892446	1.57179966	-2.1562828	0.03106159	0.99840724
<i>Ghrl</i>	15.914267	-4.5197677	2.09838453	-2.1539273	0.03124587	0.99840724
<i>Kcnc2</i>	31.3501635	-2.5366811	1.17939241	-2.1508372	0.03148905	0.99840724
<i>Gm45597</i>	10.3420909	-3.2081232	1.49220114	-2.1499268	0.031561	0.99840724

<i>Gm37019</i>	66.7046315	-1.432464	0.66680926	-2.1482365	0.03169497	0.99840724
<i>Suco</i>	537.36573	-0.5785691	0.26942709	-2.1474051	0.03176104	0.99840724
<i>Rabgap1</i>	561.806728	-0.6272519	0.29239368	-2.1452306	0.03193442	0.99840724
<i>Snx29</i>	191.878555	-0.7639418	0.35636703	-2.1436938	0.03205743	0.99840724
<i>Uros</i>	514.075406	-0.5015981	0.23439222	-2.1399947	0.0323552	0.99840724
<i>Fam220a</i>	129.285856	-1.2673634	0.59330701	-2.1361005	0.03267122	0.99840724
<i>mt-Cytb</i>	33162.6723	-0.6034689	0.2826556	-2.1349971	0.03276125	0.99840724
<i>Kiz</i>	395.946704	-0.8715631	0.40863942	-2.1328416	0.03293773	0.99840724
<i>Pipox</i>	24.9695933	-1.5492708	0.72676104	-2.1317472	0.03302763	0.99840724
<i>Gm37510</i>	71.0694511	-1.2444871	0.58401203	-2.1309271	0.03309515	0.99840724
<i>Adk</i>	1447.43721	-0.285097	0.13386532	-2.1297305	0.03319387	0.99840724
<i>Rasgef1a</i>	81.4104833	-0.8831768	0.41482649	-2.1290271	0.03325202	0.99840724
<i>Gm26740</i>	1080.8178	-0.484508	0.22793732	-2.1256196	0.03353495	0.99840724
<i>Fmr1nb</i>	5.45999925	-6.1809629	2.90914153	-2.124669	0.03361424	0.99840724
<i>Gm38244</i>	756.446391	-0.7264342	0.34196145	-2.1243161	0.03364372	0.99840724
<i>Gemin5</i>	539.152248	-0.6753111	0.31825067	-2.1219471	0.03384218	0.99840724
<i>Cd4</i>	10121.698	-0.2960374	0.13962731	-2.1201973	0.03398941	0.99840724
<i>Gm37931</i>	15.9600723	-3.3097486	1.5626712	-2.118007	0.03417447	0.99840724
<i>Nav2</i>	383.88428	-0.7326012	0.34595315	-2.1176313	0.0342063	0.99840724
<i>Slc22a23</i>	23.0090428	-2.9882429	1.41237519	-2.1157571	0.03436547	0.99840724
<i>Zfp282</i>	270.775343	-0.4716006	0.22315346	-2.1133467	0.0345711	0.99840724
<i>Gm17130</i>	28.1245297	-2.0178191	0.95487428	-2.1131777	0.03458556	0.99840724
<i>Esco1</i>	1178.67548	-0.5057314	0.23934218	-2.1130057	0.03460028	0.99840724
<i>lqsec1</i>	302.442504	-0.6978878	0.330491	-2.1116696	0.0347148	0.99840724

<i>Gm11926</i>	5.70131025	-6.2446807	2.95826845	-2.1109243	0.03477882	0.99840724
<i>Tmem186</i>	461.781234	-0.6631592	0.31417901	-2.1107685	0.03479221	0.99840724
<i>Mturn</i>	200.563783	-1.1071536	0.52562832	-2.1063432	0.03517455	0.99840724
<i>Gm13213</i>	16.7977888	-2.2021409	1.04549796	-2.1063081	0.03517759	0.99840724
<i>Pou2af1</i>	518.324618	-0.599401	0.28459649	-2.1061434	0.0351919	0.99840724
<i>Gm47358</i>	8.47411575	-6.8170763	3.23997277	-2.1040536	0.03537377	0.99840724
<i>Ak8</i>	20.2872668	-2.1223686	1.00964753	-2.1020886	0.03554552	0.99840724
<i>Inpp4a</i>	1399.67693	-0.4040271	0.19239562	-2.0999805	0.03573055	0.99840724
<i>Gm37485</i>	7.14257316	-4.873362	2.32076425	-2.0998953	0.03573805	0.99840724
<i>Gm6566</i>	19.0333811	-2.2761217	1.08456661	-2.0986463	0.03584809	0.99840724
<i>Cradd</i>	156.016256	-0.6958656	0.33165941	-2.0981331	0.03589339	0.99840724
<i>Gm27042</i>	40.2008896	-1.9574557	0.93371447	-2.0964178	0.03604514	0.99840724
<i>Gm2986</i>	10.1475881	-3.3260108	1.58711545	-2.0956326	0.0361148	0.99840724
<i>Etohd2</i>	85.3414263	-1.0429724	0.49829607	-2.0930777	0.03634222	0.99840724
<i>Man2a2</i>	438.028322	-0.7155377	0.34186663	-2.0930317	0.03634632	0.99840724
<i>Numa1</i>	2555.57233	-0.4677172	0.22348063	-2.092876	0.03636023	0.99840724
<i>Hba-ps4</i>	5.06176626	-6.0735693	2.90360249	-2.0917358	0.03646215	0.99840724
<i>Nxn</i>	48.6318311	-1.457382	0.69879238	-2.0855723	0.03701739	0.99840724
<i>Adcy10</i>	14.1431539	-4.7149531	2.2619584	-2.0844561	0.0371187	0.99840724
<i>Rccd1</i>	213.153348	-0.7392988	0.35492311	-2.0829829	0.03725278	0.99840724
<i>C530050E15Rik</i>	260.273416	-1.1525187	0.55342377	-2.0825248	0.03729456	0.99840724
<i>Gm10033</i>	187.257659	-0.7449673	0.35774669	-2.0823877	0.03730707	0.99840724
<i>Gm48207</i>	8.25111271	-6.7785862	3.25782873	-2.0807067	0.03746076	0.99840724
<i>Plp1</i>	39.9654944	-2.0199578	0.97202757	-2.078087	0.03770135	0.99840724

<i>Gm43162</i>	48.0608702	-1.2399327	0.59734688	-2.0757331	0.03791865	0.99840724
<i>Gm31834</i>	12.6861814	-3.7585122	1.81160955	-2.0746811	0.0380161	0.99840724
<i>Slc4a11</i>	14.4174773	-3.7832316	1.82428921	-2.0738113	0.03809684	0.99840724
<i>Hpn</i>	87.9799022	-1.1022556	0.53182939	-2.0725738	0.03821197	0.99840724
<i>Gm15859</i>	24.0778445	-2.1810827	1.05287553	-2.0715484	0.03830757	0.99840724
<i>Lin52</i>	206.23745	-0.5884592	0.28412865	-2.0711014	0.03834932	0.99840724
<i>Ppic</i>	209.642862	-1.2130318	0.58845401	-2.0613876	0.03926608	0.99840724
<i>Zfp791</i>	17.2932937	-4.0054813	1.94528061	-2.0590763	0.03948693	0.99840724
<i>Glt28d2</i>	38.682685	-1.2211645	0.59313151	-2.0588427	0.03950931	0.99840724
<i>Kcna2</i>	77.008628	-1.2943918	0.63069689	-2.0523199	0.04013858	0.99840724
<i>Tshz1</i>	288.986226	-0.7772137	0.37878903	-2.0518379	0.04018542	0.99840724
<i>D130043K22Rik</i>	25.5965698	-2.0255924	0.9881391	-2.0499062	0.04037359	0.99840724
<i>Trip11</i>	1077.63484	-0.5266711	0.25704422	-2.0489514	0.04046687	0.99840724
<i>Zfp595</i>	218.31319	-0.9666901	0.47200866	-2.0480346	0.04055661	0.99840724
<i>Tet3</i>	1354.69031	-0.5124171	0.25042154	-2.046218	0.04073492	0.99840724
<i>St8sia4</i>	1127.58349	-0.7227001	0.35320703	-2.046109	0.04074564	0.99840724
<i>Gm43024</i>	32.6518232	-2.7287375	1.33549538	-2.04324	0.04102869	0.99840724
<i>Pogk</i>	216.663015	-0.7351137	0.35996819	-2.0421629	0.04113538	0.99840724
<i>Zfp862-ps</i>	228.024588	-0.9349232	0.45826661	-2.0401295	0.04133743	0.99840724
<i>Abca1</i>	160.473329	-0.7434567	0.3646636	-2.0387468	0.04147531	0.99840724
<i>Gm43328</i>	53.7552415	-1.4715312	0.72349637	-2.0339164	0.04196002	0.99840724
<i>Sbk1</i>	227.920392	-0.6004437	0.29523048	-2.0338134	0.04197041	0.99840724
<i>Ighv7-4</i>	8.69014321	-5.8684767	2.88653381	-2.0330532	0.04204715	0.99840724
<i>Acad11</i>	204.295017	-0.8344835	0.41048567	-2.0329175	0.04206086	0.99840724

<i>Mrgprb1</i>	7.80510662	-6.6983809	3.29598749	-2.0322835	0.04212497	0.99840724
<i>Gm29480</i>	7.80510662	-6.6983809	3.29598749	-2.0322835	0.04212497	0.99840724
<i>Gm17816</i>	49.1161193	-1.1099778	0.54692521	-2.0294873	0.04240868	0.99840724
<i>Kifc2</i>	170.680661	-0.7761121	0.3829216	-2.0268171	0.04268112	0.99840724
<i>Apc</i>	571.411415	-0.8023632	0.39627447	-2.0247663	0.04289137	0.99840724
<i>Gm19967</i>	19.1046379	-1.7964789	0.88732945	-2.0245907	0.04290941	0.99840724
<i>Gm42659</i>	203.28905	-0.6738463	0.3341183	-2.0167895	0.04371748	0.99840724
<i>Ptprk</i>	43.630238	-1.8595242	0.92234637	-2.0160801	0.0437916	0.99840724
<i>4833421G17Rik</i>	169.660502	-1.0499248	0.52178357	-2.0121845	0.04420049	0.99840724
<i>Pax9</i>	7.58210357	-6.6565428	3.31641539	-2.0071499	0.0447337	0.99840724
<i>4930563J15Rik</i>	7.58210357	-6.6565428	3.31641539	-2.0071499	0.0447337	0.99840724
<i>Tab1</i>	663.595576	-0.5326745	0.26557519	-2.0057389	0.04488412	0.99840724
<i>Papd7</i>	149.121718	-1.0243049	0.5111792	-2.0038078	0.04509065	0.99840724
<i>Klf12</i>	24.3335318	-2.0723456	1.03559296	-2.0011198	0.04537948	0.99840724
<i>Mpg</i>	243.214605	-0.5055133	0.25284027	-1.9993385	0.04557174	0.99840724
<i>Zfyve26</i>	524.658544	-0.5791666	0.28998781	-1.9972103	0.04580234	0.99840724
<i>BC043934</i>	223.870429	-0.7153476	0.35819105	-1.9971119	0.04581303	0.99840724
<i>AC163354.1</i>	36.2729504	-1.6590883	0.83123249	-1.9959377	0.0459407	0.99840724
<i>Gm37215</i>	52.758322	-1.6193867	0.8124306	-1.9932615	0.04623281	0.99840724
<i>Exp5</i>	54.5353593	-1.227522	0.61685975	-1.9899531	0.0465961	0.99840724
<i>Tnk2</i>	242.194511	-0.5316413	0.2671708	-1.9898928	0.04660275	0.99840724
<i>Trav17</i>	44.6907377	-1.0225061	0.51424373	-1.9883687	0.04677093	0.99840724
<i>Gm6855</i>	6.05936361	-4.5360418	2.28183696	-1.9878904	0.04682381	0.99840724
<i>Dnajc12</i>	56.4342	-1.3952967	0.70337884	-1.9837058	0.04728865	0.99840724

<i>Eme2</i>	204.46877	-0.7193952	0.36276221	-1.9831041	0.0473558	0.99840724
<i>Khdc1a</i>	11.62864	-3.9737212	2.00532531	-1.9815843	0.04752578	0.99840724
<i>A430078I02Rik</i>	11.1939951	-2.7905265	1.40938667	-1.9799581	0.04770824	0.99840724
<i>Sh3d19</i>	60.1898424	-1.1168044	0.5642235	-1.9793652	0.0477749	0.99840724
<i>Slc25a36</i>	779.03037	-0.6088301	0.30761453	-1.9791981	0.0477937	0.99840724
<i>Gm38228</i>	112.513279	-1.3124291	0.66332855	-1.9785506	0.04786663	0.99840724
<i>Tecta</i>	6.73440572	-4.7891268	2.4225142	-1.9769241	0.0480502	0.99840724
<i>Zfp597</i>	147.023233	-1.0816389	0.54803035	-1.9736843	0.04841765	0.99840724
<i>Xkr6</i>	15.0734578	2.58319894	1.30919915	1.97311382	0.0484826	0.99840724
<i>Phf3</i>	646.079503	-0.5954957	0.30181475	-1.9730502	0.04848984	0.99840724
<i>Trpm4</i>	181.864705	-0.8314135	0.4214671	-1.9726651	0.04853373	0.99840724
<i>Zfp78</i>	60.4723985	-0.9710055	0.49258886	-1.9712291	0.04869767	0.99840724
<i>2010007H06Rik</i>	41.9167909	-1.6222257	0.8244381	-1.9676744	0.04910551	0.99840724
<i>4732496C06Rik</i>	55.7164958	-1.1515738	0.58534528	-1.9673411	0.0491439	0.99840724
<i>Ddx19b</i>	364.925468	-0.4996168	0.2541129	-1.9661214	0.04928459	0.99840724
<i>Usp36</i>	558.910318	-0.3778656	0.19221473	-1.9658514	0.04931578	0.99840724
<i>Gm17477</i>	22.4453728	-1.5290906	0.77801948	-1.9653628	0.04937226	0.99840724
<i>Wwox</i>	122.438918	-0.7247985	0.36889395	-1.9647884	0.04943873	0.99840724
<i>Atm</i>	428.245146	-0.828564	0.4224641	-1.9612648	0.04984814	0.99840724
<i>Gm38403</i>	12.5925973	-4.4644329	2.27714241	-1.9605418	0.0499325	0.99840724
<i>Gm29156</i>	5.66779756	-5.2247395	2.66515521	-1.9603885	0.0499504	0.99840724