

data supplements

TableS2. Differentially expressed genes included in each of the ten k-means clusters.

Cluster	NAME	CBL	MZL	PCT	p-value
1	Hoxd11	5.48536345	6.05323065	2.5419608	0.006502
1	Hlxb9	6.4175625	4.4289665	2.5701426	0.0241
1	Il10	4.85293685	4.46018505	1.9343466	0.001386
1	Rad52	3.93094725	3.51427665	1.3997398	0.03776
1	Ifng	4.95982835	4.12689375	-0.2231328	4.069E-07
1	Nos2	5.0332737	3.9542353	0.7853162	0.0003189
1	Irf1	5.2527784	4.896387	-0.3339774	1.556E-09
1	Hells	4.3545298	4.7655388	0.7707286	1.129E-06
1	Dvl2	4.2590999	2.7774085	2.6507136	0.07613
1	Ccl3	4.4973883	3.7919831	0.6828598	0.00002097
1	Cxcl9	5.9773802	5.1599964	0.4359844	0.00005598
1	Ptch2	5.54818055	3.68535195	1.4392312	0.002541
1	Tcl1	5.3034019	4.6712055	0.60962	0.008336
2	Hoxc13	0.9339892	0.4353324	2.2331632	0.003454
2	IgG2bm	-0.7641003	-0.3832887	2.3739466	0.02631
2	Hoxa11	0.4911512	0.3784624	1.5806672	0.04359
2	Pou2af1	-0.24216745	0.34171815	2.7984852	0.00005523
2	Myc	0.79172185	0.86485185	4.6317804	1.976E-07
2	Irf6	0.05884305	-1.38968475	3.0534492	0.0001895
2	Irf4	-1.17562515	-1.52861435	3.7533548	1.129E-06
2	Tnfsf13b	1.2736685	0.5963279	1.5275376	0.03476
2	Gadd45b	1.1242079	1.3846001	3.42749	0.0008154
2	Fosb	-0.09222635	-0.23059055	1.9060276	0.005866
2	Xbp1	-0.07782105	-0.61992605	4.1349766	9.874E-08
2	Fanca	0.1368664	0.0143178	1.6511434	0.01662
2	Bmi1	0.1299577	-0.9649441	2.2970456	0.02722
2	Socs2	0.047037	-0.0653982	2.087813	0.01156
2	Rfng	-0.3671242	-0.2121674	1.176299	0.002006
2	Mxi1	-0.15948155	-0.44567975	4.1223062	3.645E-06
2	Hes3	1.12555045	0.23809145	4.3411424	0.001121
2	Ccnd2	0.42423095	0.41031975	2.8554364	0.00007254
2	Btg3	0.77477325	0.65525045	2.1252912	0.002172
2	Akt1	0.33617845	-0.15243475	0.802117	0.0953
2	Ncstn	0.1736864	-0.1512246	0.9137512	0.02674
2	Mib1	0.02271885	0.04413505	2.0919544	0.00002332
2	Traf3	-0.8275665	-0.3976809	1.9876548	0.00001151
2	Chx10	0.8838227	0.7711339	1.884678	0.06322
2	Pik3cg	-0.9408994	-1.1395106	2.4571022	5.857E-06
2	Stat5a	0.2875113	-0.1872083	0.791862	0.05165
2	Fzd6	-0.04709205	-0.46078885	1.8030764	0.08339
2	Prdm1	0.1871619	-0.5478417	2.628476	0.001385
2	Dtx2	0.2141672	0.5136006	1.2474958	0.02822
2	Mbd1	0.49785725	0.50330365	1.0803228	0.07716
2	Psen2	-0.28273945	-0.58458025	3.2381606	6.582E-07
2	Prkcd	0.8838227	0.7711339	1.884678	0.06322
3	Zfhx1b	-0.0439246	-0.1635316	-0.9263248	0.04624
3	Tgfb1	-0.24099145	-0.28857345	-1.5280016	0.004552
3	Wnt5a	0.274831	0.5161158	-1.5195916	0.04191

3	Il18	-0.25764045	0.53412915	-1.0929896	0.0203
3	Il2	1.91116055	-0.32940245	-2.6959314	0.005403
3	Ltb	0.2543423	-0.3520793	-3.195522	0.02191
3	Nfatc1	-0.4177968	-0.7206598	-1.733431	0.002879
3	Maf	-0.18624495	-0.63895535	-1.3177862	0.09357
3	Tnfsf13	0.93132625	-0.69403635	-3.064629	0.06094
3	Lfng	0.01626175	-0.41992665	-1.4824608	0.07031
3	Igsf4a	0.46513175	-0.70227465	-0.826755	0.0151
3	Id2	0.45907015	-0.47490625	-2.531996	0.001975
3	Fgr	-0.0272798	0.0761306	-3.1060158	0.001613
3	Tnfrsf1a	0.5394722	-0.3162468	-1.8968058	0.0003819
3	Ccnd3	-0.44724495	-1.74341115	-2.2980598	0.01742
3	Ccnd1	-0.3699254	-0.5285372	-1.4470898	0.07516
3	Cd86	0.7387606	0.4573206	-3.3362456	0.000133
3	Lck	0.1962567	-0.8263779	-1.889098	0.01927
3	Nfkb1	-0.11611335	0.21599545	-1.6957852	0.03561
3	Jak2	-0.12719265	-0.74393465	-1.1762236	0.02194
3	Fzd1	-0.35827285	-0.28538725	-2.0845974	0.001091
3	Bcl2	-1.03281535	-0.78623695	-1.8313528	0.04041
3	Cxcr6	-0.2214528	-0.9190034	-2.3823094	0.003478
3	Cbx5	-0.01171605	0.23971195	-0.903325	0.0568
3	Nfkb2	0.15740645	-0.03714195	-1.6572508	0.01051
3	Cxcl13	0.1226884	0.7178662	-2.2419102	0.07877
3	Lrmp	-0.2578776	-0.5894856	-1.9406614	0.04041
3	Hhex	0.01813815	0.55332495	-2.6078094	0.0002204
4	IgA	-7.10143005	-6.82168305	-0.147373	0.01507
4	Tnfrsf17	-4.35646495	-3.52453675	1.8535108	0.002024
4	Numb	-4.38902985	-5.41136865	-0.83648	0.002135
5	Hoxd1	2.1340444	1.5327778	0.5282212	0.02796
5	Hoxa9	2.4347071	2.5942621	0.0183818	0.008942
5	IgE	3.5554553	2.0435929	1.8107666	0.07449
5	Ly6a	2.57425085	2.19879125	3.9961862	0.004626
5	Il21	3.39698335	3.45528455	0.4329828	0.02015
5	Il6	2.8977931	2.8697001	0.5205772	0.01522
5	Bcl3	3.07455465	2.86437805	0.2628002	0.0003955
5	Fgf4	1.3661133	4.1429671	0.8160818	0.06769
5	Tnf	2.57806	2.1660778	0.1438182	0.0001433
5	Socs3	2.51106195	2.41468135	0.7823294	0.01412
5	Vpreb1	2.10637155	2.40636215	0.1645174	0.01472
5	Vpreb2	2.1233458	1.933521	0.4430794	0.06028
5	Cdk4	2.7861122	3.35135	1.4549864	0.001363
5	Hmgb2	1.9155241	1.7183709	0.3431506	0.02205
5	Ifna1	1.3717593	2.1503863	2.000783	0.05375
5	B2m	1.7650918	1.5802112	0.806119	0.04668
5	Gfi1	3.1703859	2.8691555	0.7138912	0.01447
5	Cebpb	2.37698085	2.20845365	1.3943316	0.0377
5	Rasgrf1	4.0680825	2.0878995	1.0433388	0.09873
5	C2ta	2.9993351	2.0595561	2.8731318	0.08273
5	Rag2	3.8377183	2.6506933	1.2793198	0.001176
6	Hoxa7	1.80024825	2.31807965	-2.1963912	0.002053
6	Hoxa1	2.26879255	3.08738115	-2.3958036	0.0002452
6	Wnt1	2.99807905	3.25152765	-0.6085458	0.057

6	Il1b	3.35037295	3.11277435	-0.9517902	0.0002473
6	Ptgs2	3.91638795	2.86240035	-0.8741146	0.001344
6	Id3	2.8094228	2.6534016	-1.142586	0.0001037
6	Socs1	2.98383655	2.34786115	-0.6598908	1.222E-06
6	Ifnb1	2.78834625	2.60704165	-1.0069996	0.01503
6	Six3	3.32542775	1.94575615	-1.1707306	0.04498
6	Cdx4	2.3236221	1.7936139	-2.3954786	0.005182
6	Lmo2	3.957649	3.7716234	-1.8492074	5.713E-06
6	S100a8	4.02596165	2.62762085	-3.1418272	0.002224
7	Rb1	-0.99856845	-2.32374205	0.969996	0.0004577
7	Rarg	-0.9896513	-2.1413347	-0.7222852	0.005693
7	Pten	-0.8466606	-1.2091432	0.0785908	0.003281
7	Wnt4	-2.9454622	-2.7075852	0.2791556	0.0508
7	Il6st	-1.380591	-1.2117182	0.9085584	0.0001104
7	Notch4	-0.89922495	-0.12950515	0.3587474	0.0359
7	Notch3	-1.5756364	-1.313375	-0.4456622	0.08244
7	Xrcc3	-1.1436185	-0.8204735	1.3678438	0.0004456
7	Gsk3b	-0.7270276	-0.78102	-0.1045336	0.04337
7	Zfp36	-0.61812655	-1.32580195	1.2969386	2.583E-06
7	Tert	-0.95849285	-0.16596605	0.4627904	0.06977
7	Tep1	-1.0137165	-1.8701665	-0.987819	0.003729
7	Pml	-0.96070965	-0.69337305	-0.1168054	0.05843
7	Cdkn1c	-2.06660595	-0.90159175	0.9168436	0.004449
7	Max	-0.3940799	-0.4189109	0.6133168	0.03153
7	Apc	-1.1593524	-0.9062108	0.5383054	0.00322
7	Traf4	-1.1784996	-1.4069022	0.2552124	0.08112
7	Stat6	-1.25080095	-1.56832835	-0.9156916	0.01818
7	Dicer1	-0.97590075	-0.51104735	0.3879222	0.005155
7	Dkk4	-1.99568165	-0.93118705	2.2583074	0.01529
7	Igf1r	-0.4398453	-1.1998625	-0.1874828	0.0817
7	Dvl3	-1.1553736	-0.9313792	0.2011486	0.003259
7	Dvl1	-0.5208056	-0.1452468	0.5453832	0.01565
7	Bcl6	-2.1082866	-2.5649356	-1.4040596	0.05029
7	Bad	-0.653452	-0.7030074	0.0980892	0.04939
7	Ptch1	-0.5259275	-0.5990417	0.553181	0.02175
7	Gli2	-2.77471415	-2.38386615	-0.536099	0.007206
8	Il21r	0.7823456	0.4342028	-1.268503	0.04003
8	Sox4	-1.20127145	1.38421835	-0.089755	0.0716
8	Wnt3a	1.1116647	1.9829287	0.0989794	0.09146
8	Il1r2	1.61376245	1.17599285	-1.5520358	0.071
8	Il15	1.8501637	0.6886689	-1.2174988	0.0007813
8	Il2ra	2.3423041	1.1945189	-1.1589212	0.002706
8	Nbn	0.6500706	0.4710476	-0.2875232	0.05387
8	Mapk3	0.22629485	0.34750525	-0.6075144	0.07417
8	Mafk	0.78276755	0.72247215	-0.792769	0.01416
8	H2afx	0.8215694	0.9757436	-0.6161474	0.02976
8	Tnfrsf13c	0.479915	1.690428	-0.1125582	0.009974
8	Mfng	1.3973891	0.4297775	0.4134382	0.07037
8	Hdac1	0.70239735	1.00547175	-0.4780454	0.002125
8	Chek1	1.4158585	1.6024183	0.2974238	0.02817
8	Snai1	0.34286385	0.71391485	-0.8307238	0.06752
8	Mafb	0.63204725	0.31666005	-0.7435252	0.01411

8	Cdk2	0.15856255	0.32846955	-0.6398266	0.08225
8	Ccnb1	1.2736051	1.0976887	-0.2078662	0.08176
8	Sfpi1	1.5568154	1.1365882	-0.5417842	0.0006198
8	Cd80	1.5647602	1.5976082	-0.9200046	0.01525
8	Cd38	1.10521005	0.88840085	-1.1771166	0.00006097
8	Smad7	0.50712165	0.23904265	-1.0836988	0.03961
8	Fasl	1.4812686	0.7571388	-1.6888218	0.01071
8	Fas	1.21667155	1.19863435	-1.1277544	0.03707
8	Lyn	0.4623285	0.5655743	-1.1866576	0.001559
8	Spn	1.7262523	0.3331791	0.8010454	0.01371
8	Psen1	1.3303141	0.8903741	0.0250078	0.03675
8	Itgam	0.6030697	0.3716883	-0.932719	0.01516
8	Gnas	0.6494145	0.1647909	-0.5380152	0.07553
8	Ccnb2	1.8412814	1.0566476	0.2589306	0.004379
8	Stat1	1.5286382	0.8560786	-0.290204	0.003423
8	Icam1	1.1242215	1.4368593	-0.3884604	0.001111
8	Fancg	0.7583034	0.9173778	0.0070254	0.01768
8	Tyrobp	1.1390373	1.0405715	-1.6226216	0.00005697
8	Nfkbia	0.9878221	0.8779153	-1.1262338	0.000189
8	Lmo1	2.27880155	0.60940335	0.4000834	0.01721
8	Nfkbib	0.97132565	1.04229085	-0.862174	0.04588
9	Hoxa4	-1.73667165	-0.09346885	-3.1995008	0.001973
9	Zfpn1a3	-1.8619092	-1.6554508	-2.8167112	0.06153
9	Rel	-1.3648222	-1.2296698	-2.559244	0.01161
9	Wnt2	-2.0183063	-1.2255593	-4.0332118	0.00406
9	Pax5	-2.57545885	-1.81651785	-4.994062	0.01417
9	Gata1	-0.64388445	-1.32474625	-6.1582238	0.0006697
9	Mmp13	-0.72082935	-0.30095475	-3.9197762	0.06762
9	Tnfrsf5	-0.78574635	-0.07605515	-3.0217674	0.001855
9	Tal1	0.29194715	-0.24959705	-5.5101238	0.0006699
9	Cd79a	-0.53908215	-0.49565355	-3.4658082	0.003762
9	Hmgb3	-1.3009905	-0.9095497	-3.1051004	0.04352
9	Icsbp1	0.3959857	0.5386517	-4.4088322	0.03182
9	Cd19	-0.74119085	-0.54106685	-4.9356634	0.009428
9	Bcl11a	-1.71806295	-1.50925255	-3.156354	0.0006263
9	Tlx1	-0.6002306	-1.4831968	-5.3831128	0.001594
9	Blr1	-1.8035287	-2.2095243	-4.5115382	0.05806
9	Spib	0.39237145	1.26006825	-3.8398322	0.000302
9	Bapx1	-0.6671938	-1.1024492	-3.932143	0.001543
9	S100a9	0.2580347	0.2097421	-4.082066	0.0424
10	IgG1s	-4.0002707	-4.3713493	7.925225	0.00002104
10	IgG2a	-0.1403201	0.7740221	8.8045582	2.282E-06
10	DI13	2.4564327	2.6195079	11.0715142	5.698E-08
10	Cd44	1.42893535	1.40723895	6.0962548	0.00002204

The number of each k-means cluster is shown in the left column along with the associated names of individual genes in the cluster. Numbers indicated fold change relative to normal spleen in log2 scale for each of the tumore types. P values are listed in the right column. Genes that are involved in the NTOCH signaling pathway or are NOTCH target genes are indicated in bold.