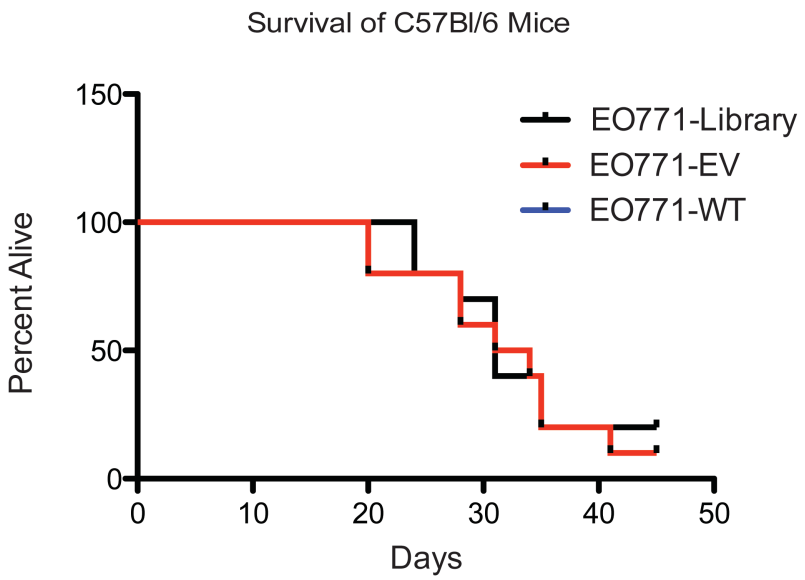
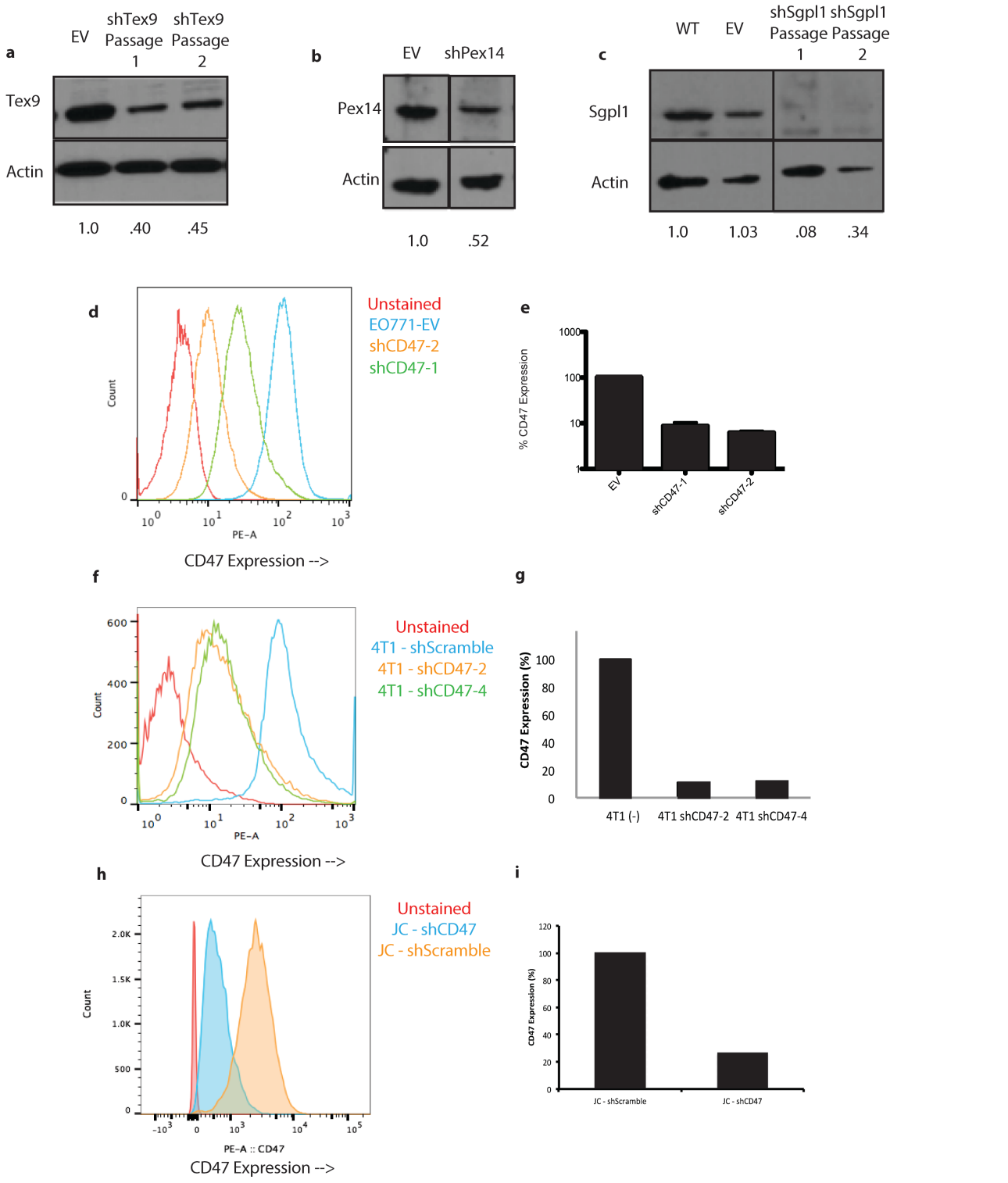
Shuptrine et al. Supplemental Figure 1



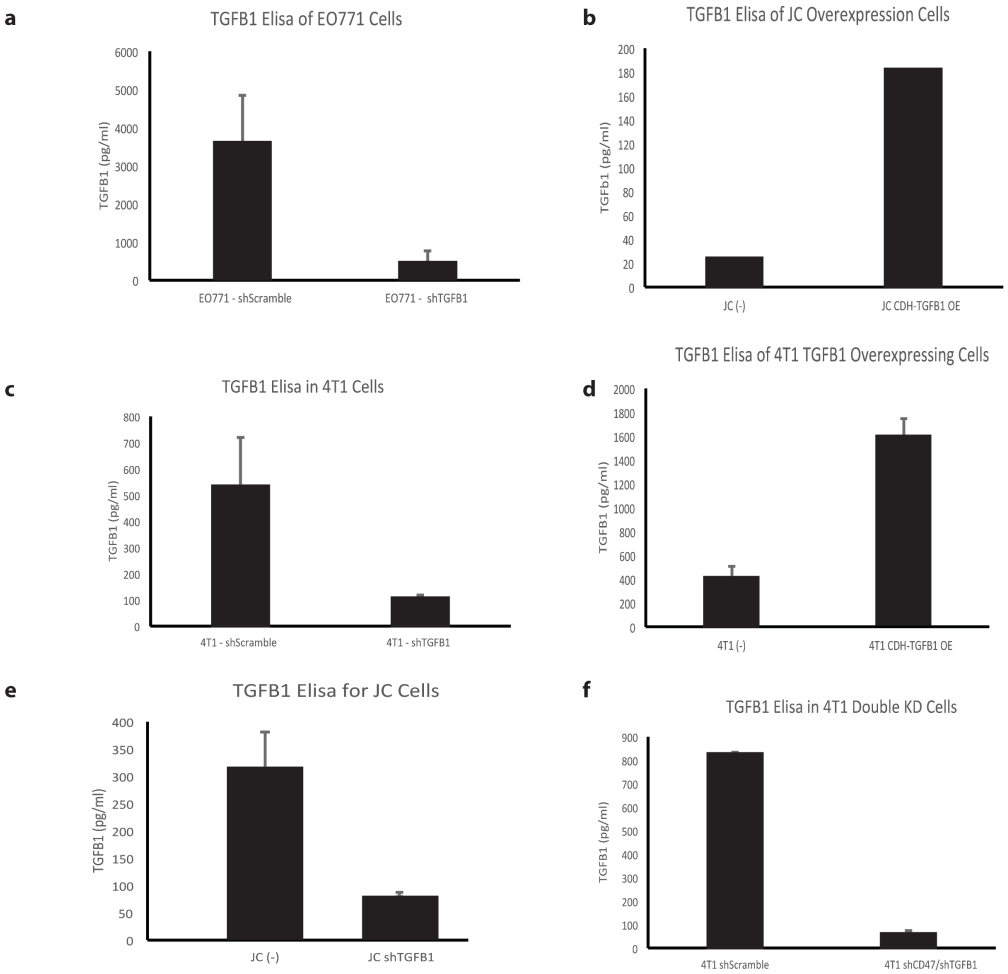
Supplemental Figure 1: Virus infection of EO771 cells does not influence survival of engrafted mice. Survival of C57Bl/6 mice bearing EO771 tumor cells infected with empty vector (red line), library (black line), and WT cells (blue line). N= 10 mice per group. Survival differences were considered significant when the Mantel-Cox test resulted in a $p < 0.05$.

Shuptrine et al. Supplemental Figure 2



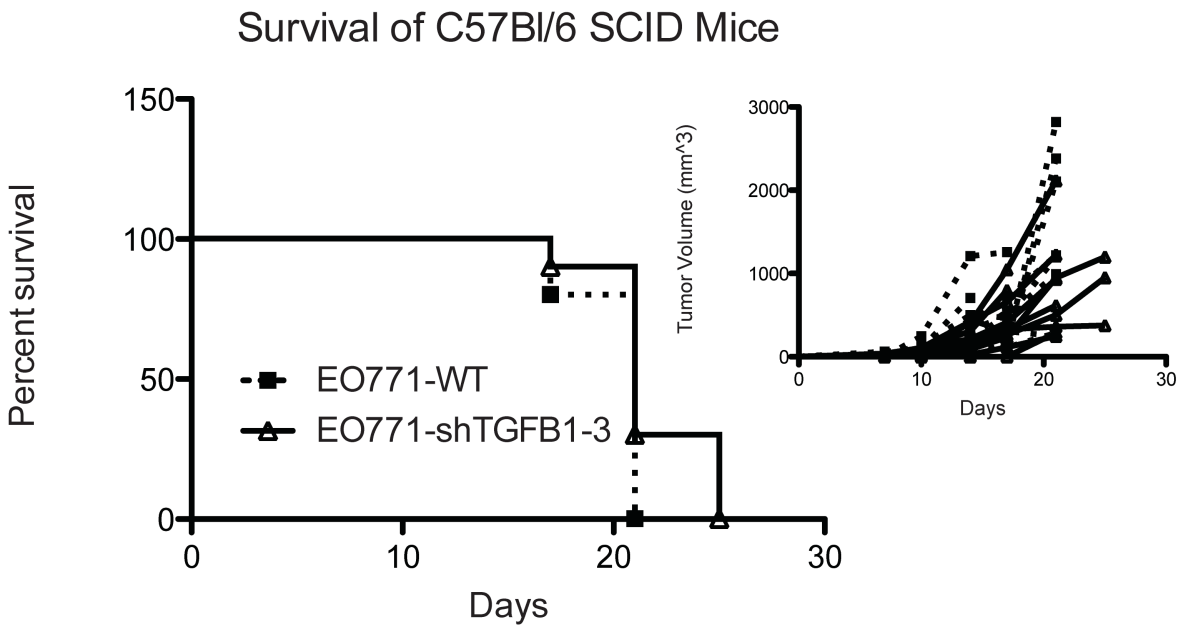
Supplemental Figure 2: Validation of protein KD for Tex9 (**a**), Pex14 (**b**), Sgpl1 (**c**), and CD47 (**d**-**i**), in EO771 (**a**-**d**), 4T1 (**f**-**g**), and JC (**h**-**i**) cells. Western blot analysis (a,b,c) of protein expression in EO771 cells. Quantification of protein expression was performed using ImageJ. Histogram analysis of CD47 expression was performed using FlowJo Version X. Panels **e**, **g**, and **i** are quantitative analyses of CD47 expression (geometric mean of RFI) compared to control cells.

Shuptrine et al. Supplemental Figure 3



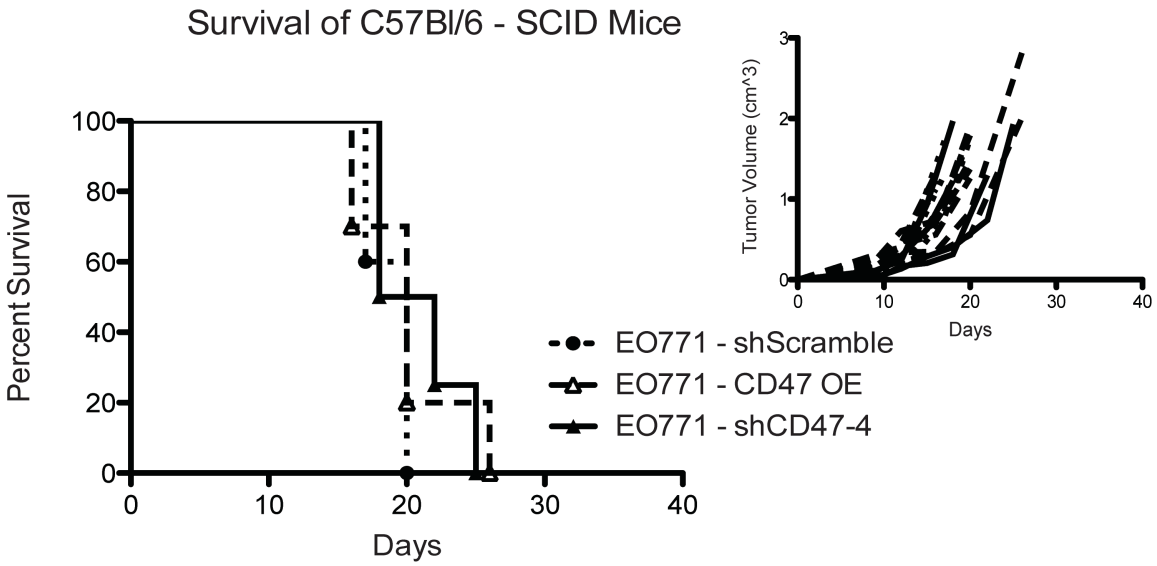
Supplemental Figure 3: Validation of protein KD and Overexpression of TGFB1 in EO771 (**a**), 4T1 (**c,d,f**), and JC (**b,e**) cells. Elisa analysis of TGFβ1 expression was performed on supernatant exposed to the indicated cells for 48 hrs (**b, d**) or 72 hrs (**a, c, e, f**).

Shuptrine et al. Supplemental Figure 4



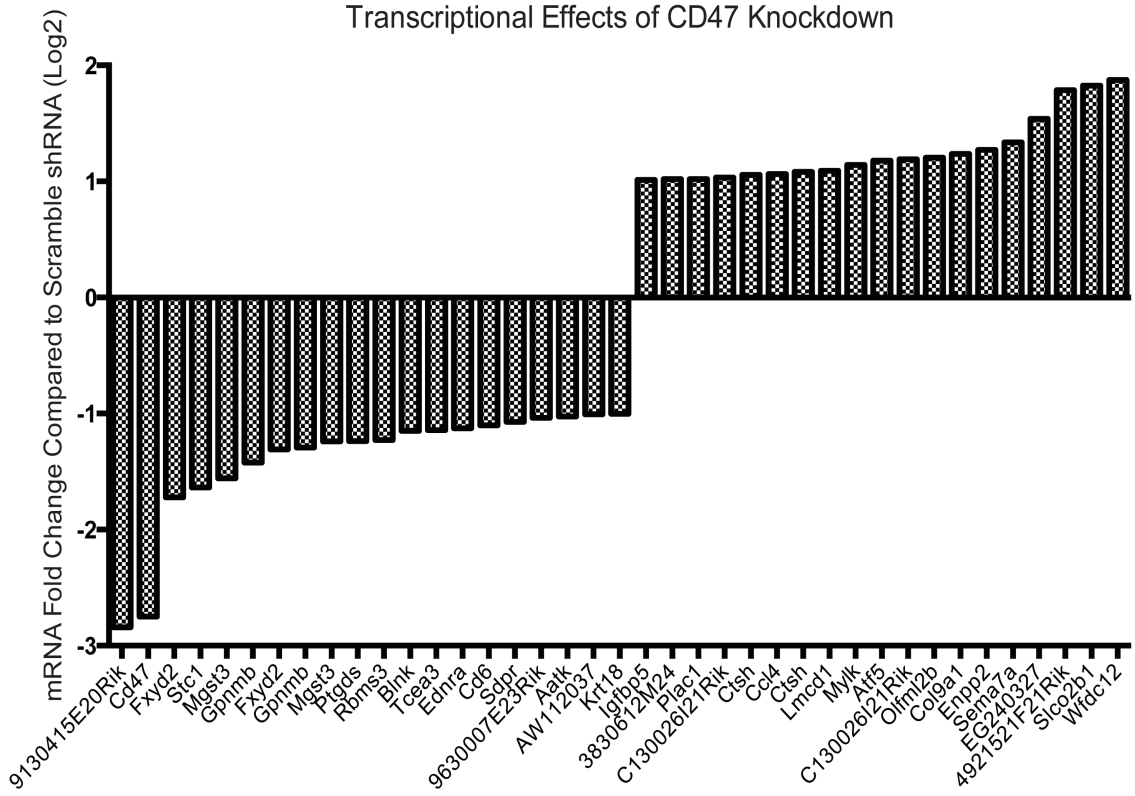
Supplemental Figure 4: TGFβ1 Knockdown is not Sufficient to Influence Growth or Survival in an Immune Incompetent Murine Setting. In vivo analysis of C57Bl/6-SCID mice engrafted with 2*106 EO771-shTGFβ1 cells. N = 10 mice per group. The panel is a representative survival and growth kinetics analysis (panel insert) from one animal study and was repeated twice with equivalent results. The dotted lines and circle markers indicate mice engrafted with WT cells, solid lines and square markers represent those mice engrafted with cells with TGFβ1 shRNA knockdown. Survival was considered significant when the Mantel-Cox test resulted in a $p < 0.05$.

Shuptrine et al. Supplemental Figure 5



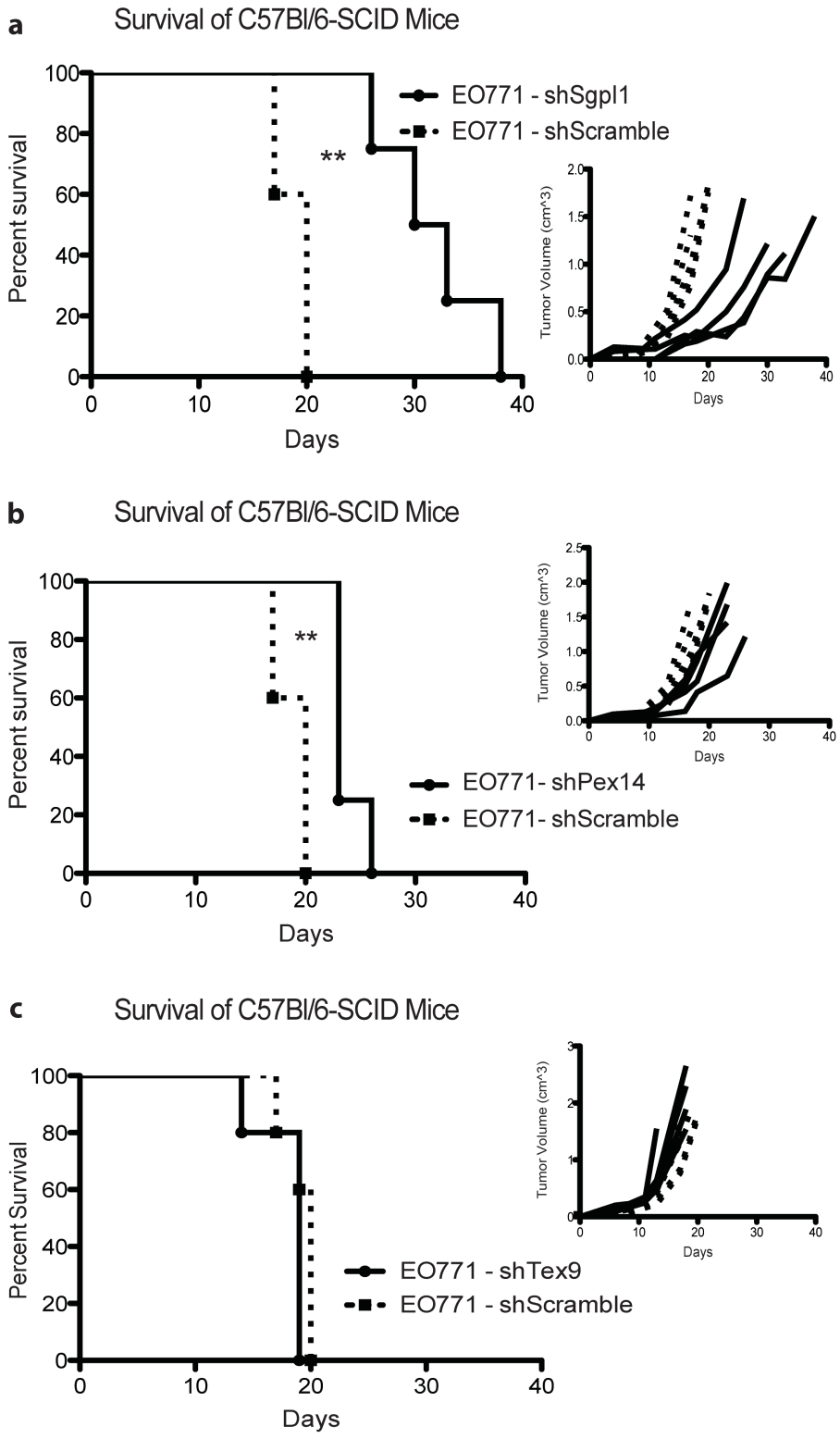
Supplemental Figure 5: CD47 Manipulation is not Sufficient to Influence Growth or Survival in an Immune Incompetent Murine Setting. In vivo analysis of C57Bl/6-SCID mice engrafted with 2*106 EO771-shCD47 or EO771-CD47 overexpressing cells. N = 5 mice per group. The panel is a representative survival and growth kinetics analysis (panel insert) from one animal study and was repeated twice with equivalent results. The dotted lines and circle markers indicate mice engrafted with WT cells, solid lines and square markers represent those mice engrafted with cells with CD47 shRNA knockdown, dashed lines and triangle markers indicate mice engrafted with cells with CD47 overexpression. Survival was considered significant when the Mantel-Cox test resulted in a $p < 0.05$.

Shuptrine et al. Supplemental Figure 6



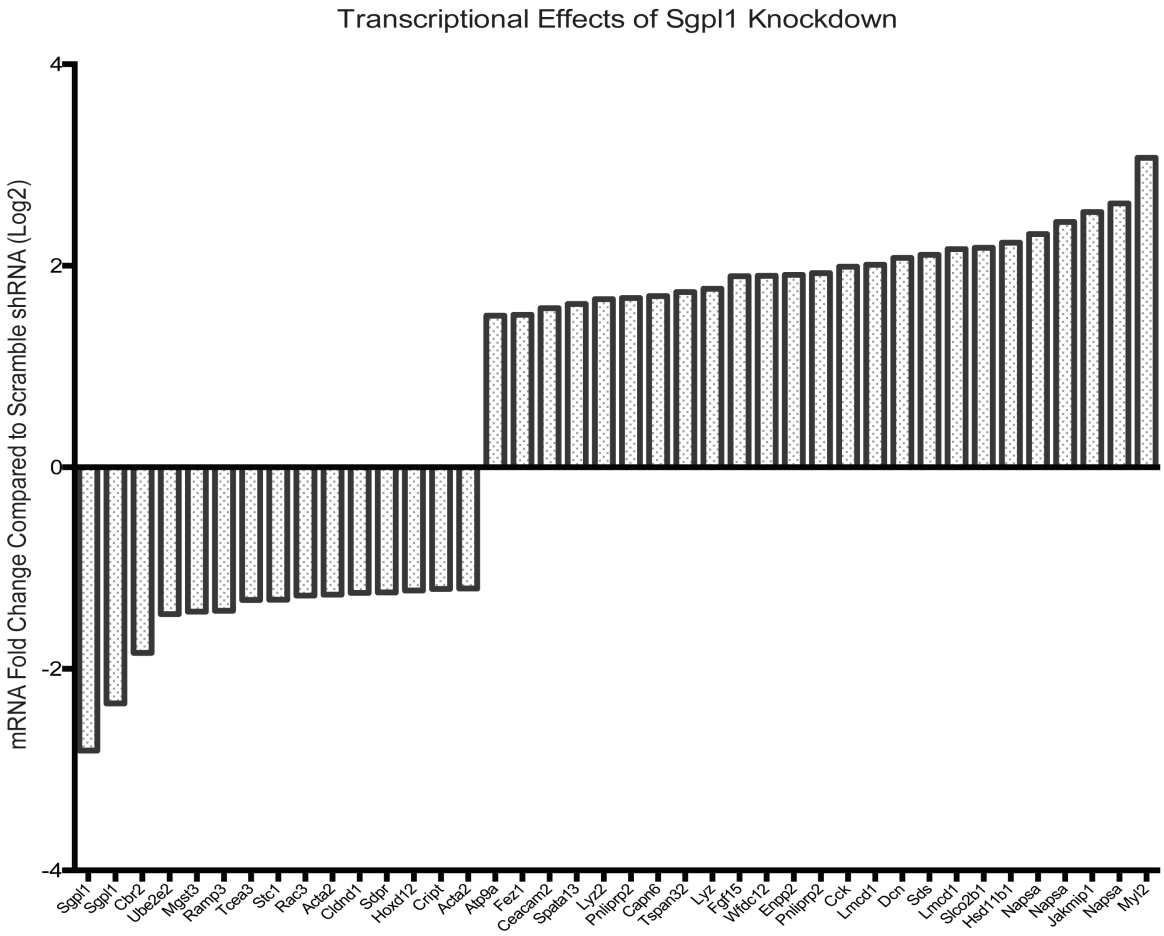
Supplemental Figure 6: Global Transcriptional Analysis of CD47 shRNA mediated knockdown in EO771 cells. Illumina expression analysis of cultured EO771 shCD47 cells compared to shScramble cells. Differentially regulated candidates were considered significant if differential analysis indicated an adjusted p value (q value) < 0.05. N=3 illumina arrays per group. Illumina MouseWG-6 v2.0 Expression BeadChips were utilized.

Shuptrine et al. Supplemental Figure 7



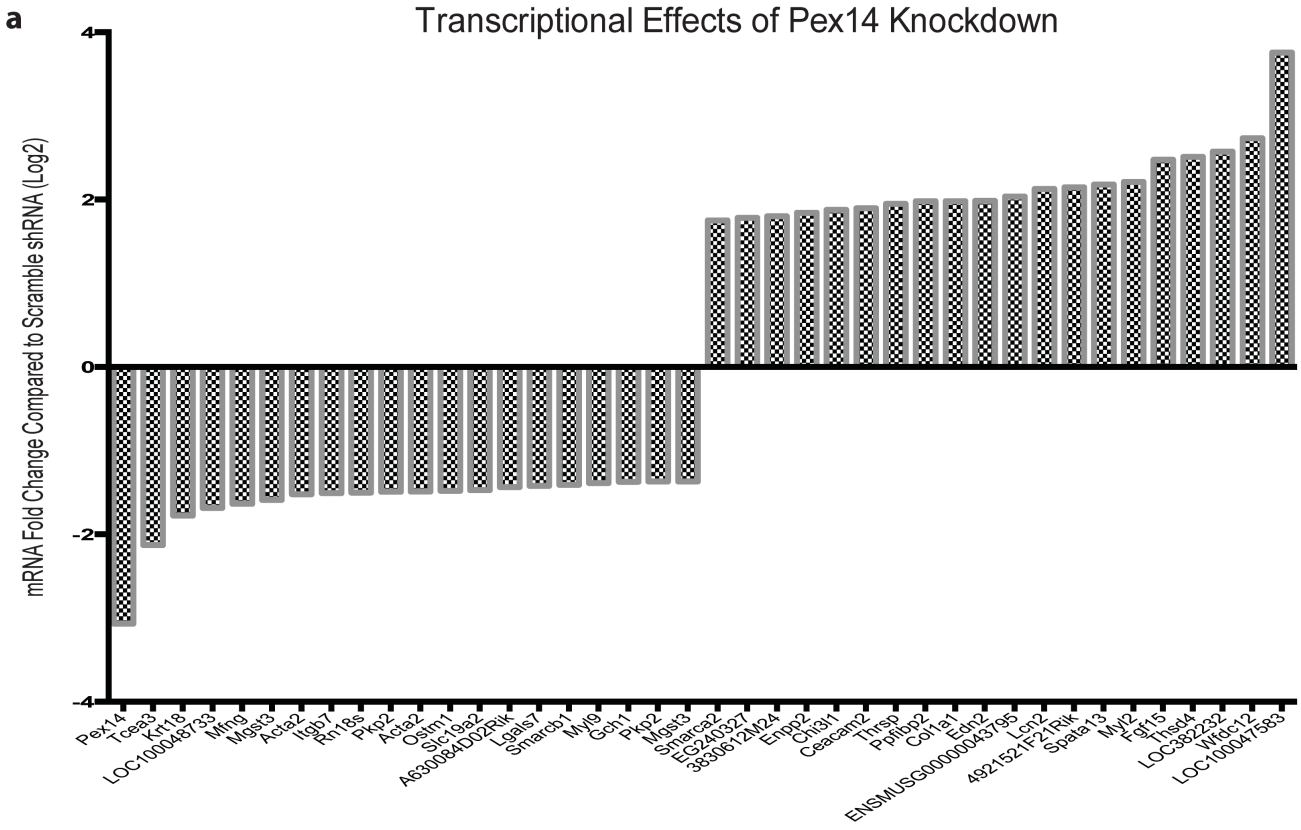
Supplemental Figure 7: Knockdown of the novel gene targets Sgpl1, Pex14, and Tex9 have modest effects on the in vivo growth and survival kinetics of EO771 tumors in immune incompetent mice. In vivo analysis of C57Bl/6-SCID mice engrafted with 2*10^6 EO771-shScramble and shSgpl1 (**a**), shPex14 (**b**), or Tex9 (**c**) cells. N=5 mice per group. The panel is a representative survival and growth kinetics analysis (panel insert) from one animal study and was repeated once with equivalent results. The dotted lines and circle markers indicate mice engrafted with shScramble cells, solid lines and square markers represent those mice engrafted with cells with target gene shRNA knockdown.

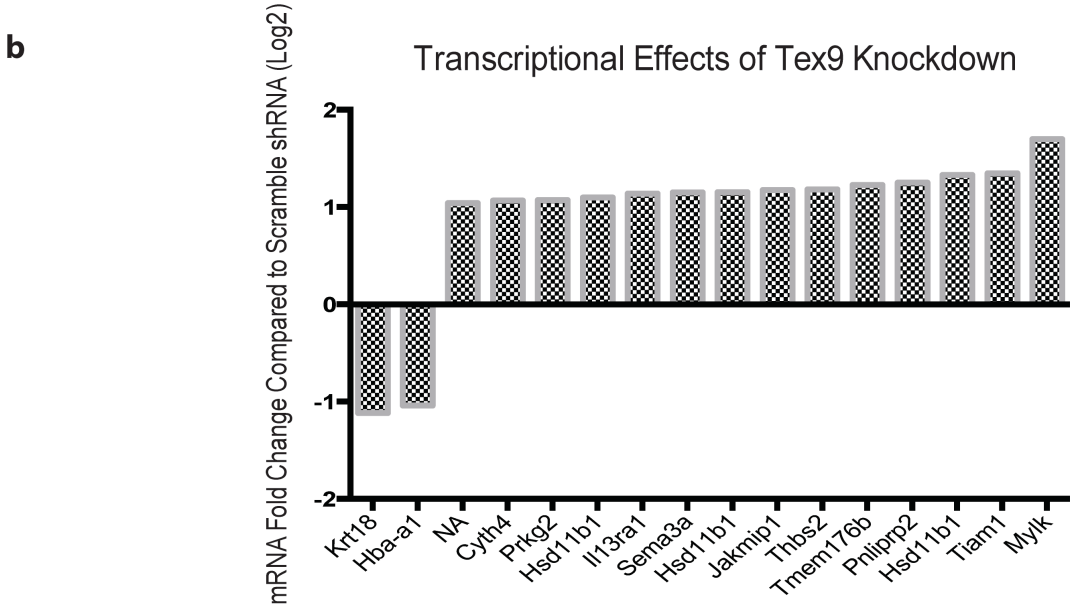
Shuptrine et al. Supplemental Figure 8



Supplemental Figure 8: Global Transcriptional Analysis of Sgpl1 shRNA mediated knockdown in EO771 cells. Illumina expression analysis of cultured EO771 shSgpl1 cells compared to shScramble cells. Differentially regulated candidates were considered significant if differential analysis indicated an adjusted p value (q value) < 0.05. N=3 illumina arrays per group. Illumina MouseWG-6 v2.0 Expression BeadChips were utilized.

Shuptrine et al. Supplemental Figure 9





Supplemental Figure 9 Global Transcriptional Analysis of Pex14 and Tex9 shRNA mediated knockdown in EO771 cells. Illumina expression analysis of cultured EO771 shPex14 (**a**) and shTex9 (**b**) cells compared to shScramble cells. Differentially regulated candidates were considered significant if differential analysis indicated an adjusted p value (q value) < 0.05. N=3 illumina arrays per group. Illumina MouseWG-6 v2.0 Expression BeadChips were utilized.

Supplementary Table 1: Results from In Vivo Screen 1

GeneBank	shRNA Sequence	Bl6 vs NSG Log2 FC	Bl6 vs NSG q Value	Bl6 vs SCID Log 2 FC	Bl6 vs SCID q Value
AI882525	ACTGAATGTTTCCATGTGCCTCTCGTA	-5.51	0.00526	-3.72	0.139
NM_053074	GTGAATCCAGCGCTCCCTTGCAAGCTT	-5.25	0.0612	2.03	0.787
BE950866	ATACTTGCACACACGTGCTCGTATATG	-5.24	0.0167	0.354	0.902
NM_008304	TAACACTTGAAACAGTGCTGTGTCTGA	-5.02	0.0308	0.773	0.82
BC027637	ATTTCCAAGCTCTGCGGACATTTGTCC	-4.91	0.0165	0.728	0.814
BC027183	TAACCTGCTTGAAATCCTTATTGCTTA	-4.78	0.0098	-0.142	0.955
AK014574	ATTGTACGTCAGCAATCTGCCTTTCCA	-4.64	0.0182	1.23	0.787
BB471576	TAGAATCCCAACTGCTCTATATTTCTT	-4.58	0.0187	-0.358	0.888
NM_010406	TAAAGCACAAGCTGATGAGTTACGACT	-4.55	0.0098	-0.183	0.939
NM_025358	CTTACCCTTTGCCACTATTTGTGTATA	-4.54	0.0161	0.362	0.882
AF011423	TTTCTTACAAGCTTCTTCTGATCGTTG	-4.49	0.000367	1.08	0.726
L35261	TTTCTTGCCATTACAGCTAACATAGTA	-4.49	0.00658	0.158	0.943
NM_019781	TTCCAAAGTCCTGGCTGACAGATGCTG	-4.4	0.00658	-3.78	0.0549
BB540053	TTAACACTATCTGGCCGGTCTCAAAGA	-4.4	0.00526	1.09	0.787
AF011423	TACAAGCTTCTTCTGATCGTTGTGGGT	-4.38	0.00389	1.81	0.615
AF011423	TCTTACAAGCTTCTTCTGATCGTTGTG	-4.37	0.00329	1.89	0.534
M32308	TAATCCAGAGACTGACTGCCTTTAGCC	-4.33	0.0199	0.617	0.82
BC011476	TAATACTCTTCTCATATGCTACTCTCT	-4.17	0.0167	-4.3	0.0549
AW213665	ACATCCTGGCTGCAATGTGGACATTGG	-4.17	0.00525	-3.92	0.0337
BB094901	GATGACGTATTACTCTACACCTGATGT	-4.16	0.0155	-0.282	0.899
AV319507	TAAAGGCCAACATATCAAATAGGGACA	-4.16	0.00263	-0.402	0.821
BB818797	TATAGCTTAACTGGCAGACTACTTGCC	-4.16	0.0213	1.34	0.787
AV321315	GAAGACAGACATCCTGGCAGTGAAGAC	-4.13	0.00219	-3.68	0.0171
AF484555	AGATGCAACCCACTGTAAGCTTTGTGA	-4.1	0.0576	2.01	0.776
BG083329	CACATGCATGCACTCACAGGTATATAA	-4.08	0.0315	2.96	0.418
NM_009951	GAAGATCCGAGACATCCTGGCTCAAGT	-4.07	0.00526	-3.14	0.0697
BB241408	TTAACTGATTTGACATCCTGTTCTAAT	-4.07	0.00525	-3.53	0.0466
BG072196	GTAACATGCTGACATCCTACTTTCATA	-4.02	0.00609	-3.45	0.0549
NM_134086	TGATCAGCATCCCTCTGGTCATCTACG	-3.97	0.0161	2.5	0.418
NM_033354	TCACATTCTGACATCTGGCTATCAAGT	-3.97	0.000367	-3.64	0.00364
BE989942	TCAGACCTGCTTTATATCTCAGAATAT	-3.9	0.0444	0.0842	0.977
AK005965	GATACCTGGCTGACAGTGAACCGCATG	-3.84	0.0315	-3.42	0.17
BC010204	GTGTTGTCACTTACCCATTTATGTATG	-3.83	0.0179	-0.118	0.959
BB197262	TTACCAAAGAGCACTCTGCATGAGTTA	-3.77	0.0163	0.242	0.906
AK008551	TACATTTGACATCGGACCAGTGGAGAT	-3.76	0.000708	-3.74	0.00364
AK003436	CTTCTTCATTGACATCCTGCTGGATAC	-3.73	0.0165	-3.13	0.139
AF011423	ACAAGCTTCTTCTGATCGTTGTGGGTT	-3.73	0.00389	0.642	0.796
BB144871	TAATACATACTTGTAACGTTCAAACAC	-3.7	0.0308	-3.36	0.147
AV094519	GTGCTGACATCTGAGGATCTCTGTTTG	-3.68	0.0142	-3.56	0.0593
BM207451	AAGAAATAAATCCATCCTACTGTAACA	-3.67	0.00526	1.13	0.772
AK016855	ATAATGACATCTGGCTTACTTCCGCCT	-3.65	0.0114	-3.26	0.064
NM_009163	ACAATTTGACATCTGGACTGGCTCCGT	-3.58	0.000708	-3.39	0.00418
BM237177	TTAGATAAAGTCTCTCCTCGTCACTCA	-3.54	0.0626	1.4	0.787
BB021753	TTGCATGTAAATACCATATGCTGTTTG	-3.54	0.00166	-0.025	0.987
BB114693	TTGGCATCTTGTTTCTTTAATATGATA	-3.54	0.000267	0.0305	0.977
NM_018812	GGGCTGACATCCAAGGTTTAGATTTAT	-3.52	0.0136	-3.29	0.064
AY074806	ACATCCACAAATCGCTGATCGGGAAGA	-3.51	0.185	2.82	0.742
NM_053266	TCATCCACGCTGTCCTGTTTCAAATAA	-3.51	0.0171	-0.00941	0.998
NM_007799	GAATTTAAATGTCTCACCCTCTCATAA	-3.5	0.0397	0.311	0.891
BQ030867	TGTACAGTCTGGGCATTTACATGTATT	-3.49	0.0275	-2.13	0.608
BB114693	TGGCATCTTGTTTCTTTAATATGATAA	-3.49	0.000267	0.371	0.79
BC019126	GTGATTTGCTTATATGCCTGAGAATAT	-3.47	0.0444	-0.255	0.912
NM_029331	TTTGCAAGCTGACCTGGCTGACATCAC	-3.45	0.0097	-2.51	0.147
BC007193	TCTCTCTCTTTGTGTATCTGAACTTTG	-3.44	0.0245	-0.265	0.895
BB390252	GAACCACGACATCTGGCTGAAGTTTAG	-3.44	0.00731	-3.02	0.0549

Supplementary Table 1: Results from In Vivo Screen 1

GeneBank	shRNA Sequence	Bl6 vs NSG Log2 FC	Bl6 vs NSG q Value	Bl6 vs SCID Log 2 FC	Bl6 vs SCID q Value
AK016924	TCTACATTGATTGCCATGCTACTGTAA	-3.43	0.0486	2.97	0.296
BC016523	TCAGTGCTCAGCACTGCCATAAATAAA	-3.41	0.00537	0.526	0.801
AK002762	ACATCACTGACGCTGCTCATTTGCATA	-3.41	0.0315	1.92	0.699
BF141076	ATAATAAGCTCACTACTTGGCTATTGT	-3.4	0.0779	1.23	0.787
BE952060	ATGTACTGTGACATCCCTGGCTTCTGT	-3.4	0.00515	-2.65	0.064
BB119196	TTGCATGTAAATACCATATGCTGTTTG	-3.4	0.000935	0.187	0.868
NM_011837	CCAGGAGTCCAGACATCCTGGCAGGAA	-3.39	0.0101	-2.54	0.142
BB448377	CCTGCTCCTTGAACATTACCAAAGAGA	-3.38	0.00166	0.77	0.787
NM_021504	TTAAATGCTAACTTCTGCCTGTGATTA	-3.37	0.121	2.25	0.749
AK006106	GAGACTCAAAGCTGCTCGGAAACTTCT	-3.33	0.00658	-4.09	0.00924
BB426699	TAAACACCTCTATAGCCACTGAGCTAA	-3.3	0.0218	1.12	0.787
AV297525	GTACAATACTCTGACATCCTACCAGTA	-3.28	0.0195	-2.85	0.139
AV127111	TCTCATCCTGGCTGAACTGGTTGACTA	-3.28	0.0158	-2.76	0.139
AK004342	ACATCACTGACGCTGCTCATTTGCATA	-3.26	0.0438	1.93	0.715
BC021322	TTACATCCTGACATCTGAAATCTAGAA	-3.25	0.0469	-2.62	0.392
BB114693	GTTGGCATCTTGTTTCTTTAATATGAT	-3.23	0.000702	0.0556	0.96
AV334508	CACCTTCTCTTGCTCGTTATTTATTTG	-3.19	0.00537	-3.61	0.012
NM_009979	GAGGCTTCAGCTGCGTAGAACCATATG	-3.17	0.0483	-1.03	0.787
BB166245	TAATGACATCTGGCAACTATCCACACT	-3.17	0.0097	-3.06	0.0489
BB375259	TCAGATAAGGTTTCCCAGTATGTTCCA	-3.14	0.0394	-0.354	0.862
BB436898	TTCTTGGACATCTGGCATTTCATATAT	-3.14	0.0241	-2.61	0.175
BI695763	CAAATGACATACTGGCTGCTTACCTGT	-3.11	0.0145	-2.56	0.139
AV038578	TTTGGTGTTCCCGCAGCCATATTGTAT	-3.09	0.0421	1.67	0.749
BM249286	AAATATCTGTGTAACTTATTGAGCATT	-3.08	0.00637	2.08	0.147
NM_019712	TTTGGTGTTCCCGCAGCCATATTGTAT	-3.07	0.0315	1.11	0.787
BE853428	CAATGACTCCTGTATTCTTATGAATAA	-3.06	0.0483	1.01	0.787
BE553944	ATGATGAGACATCTGGCTACTACTATG	-3.03	0.0141	-2.44	0.139
BB448377	GCTCCTTGAACATTACCAAAGAGAATG	-3.01	0.00166	0.687	0.787
BC021897	TATTTGTTAAACTTGGCTAATGTTAAA	-2.97	0.00219	0.356	0.806
BC002077	GTAATCCTTGTTGCTTTCCTGATACCA	-2.96	0.00839	-0.129	0.93
BB357650	TATTTGTCACTGGATTCATAATTTGAA	-2.96	0.00839	1.29	0.688
AK010892	TGGCTGACATCATCAACCAGACTCATA	-2.95	0.0353	-2.77	0.147
BB448377	CTGCTCCTTGAACATTACCAAAGAGAA	-2.95	0.00334	1.57	0.274
BB357650	TTTGTCACTGGATTCATAATTTGAAAG	-2.92	0.00703	1.33	0.626
AV274103	CAATCATTCTGACCCATGGCTGACACT	-2.88	0.0289	-2.32	0.265
NM_019712	TTGGTGTTCCCGCAGCCATATTGTATT	-2.87	0.0334	1.39	0.757
AI788958	TTCCTTGCTCTTCCTCGACTGGTATGA	-2.87	0.261	3.63	0.546
BC027270	CAAATCCTTGGCTGACTTGACGGCAGT	-2.85	0.0161	-2.4	0.139
BE951633	AGAAACTACATCCTGGCATCTTGGCTC	-2.81	0.0151	-2.02	0.236
AK018207	TAAACGACTGTATCGGGCTTCAGCTGC	-2.8	0.0315	-1.74	0.615
BI659732	TGTCCTTTGACATCTGCCTTTAAGACT	-2.8	0.0259	-2.5	0.144
AK016822	TACTGCTGGGCGACTGTGGCTACTAGC	-2.79	0.06	0.6	0.809
BB436898	GACTTTCTTGGACATCTGGCATTTCAT	-2.77	0.0315	-1.97	0.438
NM_026662	GACATTTCGATGATCCTGGCTGAAGCC	-2.75	0.0259	-1.82	0.496
AK003436	TTGACATCCTGCTGGATACCATCAGGG	-2.75	0.0469	-2.69	0.154
AV292586	TGTTCAACATGTCCCAATTTCTTCCTG	-2.74	0.0126	-0.205	0.883
BB478680	TGACTGGCTTCTTTCTTATGTTAATCT	-2.74	0.000267	-0.263	0.799
BM293485	ATAATCTGCCATATCTTTACATATTTG	-2.73	0.0319	-3.26	0.0549
AW555571	CTATACACCTTCTTCTACTCTGTTAAT	-2.73	0.0291	0.11	0.951
AW548944	TCTTGTTCAGCCTTGTTGCATACCAAC	-2.72	0.0259	3.3	0.0453
BC026782	GTATAAGTAATCTCTGCATGCCAGACA	-2.72	0.0394	1.62	0.686
BQ174980	TTTAACGTTTCGTTTGTACGGATGTAT	-2.72	0.00263	-2.6	0.0144
AK017426	CTGGGCACTGTGTCCTATAACTGTAAA	-2.69	0.0255	1.23	0.757
BB556862	AGTGTCGGCGAGAGGGCTTCAGCCAGA	-2.68	0.0444	-1.02	0.787
BC020138	AGGTGACATCACTGGCTGCAGCTGAAG	-2.65	0.0097	-2	0.139

Supplementary Table 1: Results from In Vivo Screen 1

GeneBank	shRNA Sequence	Bl6 vs NSG Log2 FC	Bl6 vs NSG q Value	Bl6 vs SCID Log 2 FC	Bl6 vs SCID q Value
AK016844	ATCACAGTGAACATCCTGGCTATGTTA	-2.63	0.0315	-1.84	0.487
BE691677	CAAATCGAACAAGCATATCTCCTATTA	-2.63	0.00217	0.835	0.742
BG069303	CTAATAGTTATCCTTAAATCTGTGTTA	-2.62	0.0238	0.188	0.902
BQ175324	GAGTTAGACCCTCACATCCTGGCTGTG	-2.61	0.0255	-1.49	0.638
NM_008716	ATGCATTCCACTTCTAATTGTAAATAC	-2.6	0.00263	0.0975	0.925
BC026950	TAATTCCTATACCTTCTCTATCTTTAT	-2.58	0.0141	-0.0809	0.956
NM_011704	ATACATCTTACTCAGTTATGCTTAGAA	-2.57	0.0517	1.01	0.787
NM_138651	GGATTCTGACATCTGCCTTGGAAGATG	-2.57	0.0486	-2.48	0.176
NM_009610	TGTGACATTGACATCCGCAAAGATTTG	-2.57	0.0213	-2.32	0.136
AV327200	AGTACAGGTTTGCTTGTCTTTAACTGA	-2.56	0.0122	-0.58	0.792
BC015259	TTATCACATCCTGGGCTGCATCTTAGC	-2.53	0.0141	-1.84	0.205
BM243546	TCTAACATACTTTCCATCAACAACCAT	-2.52	0.00779	-0.267	0.831
AK008551	ATTTGACATCGGACCAGTGGAGATCTC	-2.5	0.0329	-2.26	0.17
AF037046	CAAACTTGCCGACATCTGCTCTGGGAA	-2.48	0.0288	-2.25	0.144
BG070811	CTCAGCTCGTGGATTGTCTCTTTCTAA	-2.47	0.183	2.72	0.397
BE996326	ACTTAACTCATTAACACATCTCTCATT	-2.45	0.117	1.36	0.776
BC007193	TCTTTGTGTATCTGAACTTTGCCTTTG	-2.44	0.00731	-0.413	0.801
NM_021890	AGAAGTCTGGCGACATCTGGCTGGATG	-2.43	0.0275	-1.76	0.392
BM211445	TTGACATCCTAGTGCATCTGACAAGGA	-2.43	0.0381	-1.98	0.305
AW557946	TGCACATCATCCCAGAAATGAACTCTT	-2.41	0.0151	-1.45	0.466
NM_011487	TGACATCCTGCGAGACTACAAGGTTAT	-2.4	0.0315	-2.08	0.204
AY043275	GTTTCTGACTGTCCTGGTCATCATTTG	-2.38	0.0465	-1.07	0.783
C85600	GAAATCATTGTGTCATTGTCTACTATG	-2.38	0.0315	-1.57	0.546
BB794936	TCTTTCACCTGCCAATCAGCTGTTAAT	-2.27	0.000367	-0.0141	0.985
NM_027722	ATATGTTTATGTTCTGACTGTCACTGA	-2.26	0.023	-1.06	0.749
NM_020503	ACAAGACATCCTGCTCAGAAGCCTGTA	-2.25	0.0255	-1.82	0.219
BB253461	GTATGCTCACTATGCTAAATATTTAAA	-2.24	0.0259	-2	0.144
BC023062	CAACATCTGACATTTCCAGGCTTCTGA	-2.21	0.0195	-1.93	0.139
BC003255	CAACAGTACCCTGACATCCCTGTGTGT	-2.2	0.0491	-1.65	0.496
BF320852	CAAACACTAATGCATTTCCCTAACCTA	-2.2	0.279	3.57	0.346
AI481778	TGTGGACATCTGACAGCCTCTTCTGAC	-2.19	0.0444	-2	0.217
AK013582	TTGGACGTGATGTCTGCTCATTTGCAT	-2.16	0.0129	-0.165	0.881
BB534766	AGGACATGCCTGGCTGGACATTTACTT	-2.15	0.0315	-1.87	0.196
BB480659	TTGACTCCTGGCTGCTCCGAGAATGGG	-2.1	0.0421	-1.78	0.284
BC009096	TAAAGAATTTATTACACCTCAGGAGCA	-2.08	0.0192	-0.446	0.799
BG071064	AAGACCATTTGACATCAGTCATGGAGA	-2.08	0.0255	-1.49	0.389
BB328920	TATTTCTCTCTTACAATTGGCTCCTTC	-2.08	0.025	-0.111	0.93
AK004139	AAGAATTTGACAACCGCGGCTGGCTGC	-2.07	0.0315	-1.7	0.274
NM_013626	TTAGTTACTTCATTTGGCTCCGTTGGC	-2.06	0.00119	-0.0237	0.976
BB516678	CAAGGCCATGATCCTGGCTGACCATAT	-2.03	0.0353	-1.56	0.389
NM_024206	ATCACAGCCAACATCCTGGCTGTGTCA	-2.02	0.0491	-1.24	0.694
NM_016760	CTTCAACTGTGTTCTCCCTGGCATTCA	-1.99	0.0476	0.0213	0.99
BI790311	TAACTTTGACATCACAGGTCCCTTCCA	-1.98	0.0255	-1.71	0.154
AK017008	CATCCTGGTGACTCTGTTGTCAGACAC	-1.97	0.0141	-1.87	0.064
AF078667	AGAGGATCACGCTGCTCCGACAGGTGG	-1.94	0.00329	-0.583	0.764
AK006136	TCCCTCACAGACATCCTGGTGTGGTCA	-1.94	0.00389	-1.29	0.128
BB153779	AGCTTCTTGACATGGCTGACAACAAAT	-1.94	0.0182	-1.43	0.254
BI151889	TCTTACGAGAGACATCCTGGAGGTGTG	-1.92	0.0275	-0.949	0.749
BB354528	TATTGTTACACATCAAGCAATCAATAA	-1.89	0.0329	-0.111	0.927
BB453395	CCAACATCCAGGCTGACTACCTGTACC	-1.88	0.0199	-1.52	0.171
AK006136	AGACATCCTGGTGTGGTCAGACACAGC	-1.79	0.0383	-1.59	0.212
AW557946	ATCATCCCAGAAATGAACTCTTGTAGA	-1.78	0.023	-0.793	0.757
AK015837	GAATGACATCATGGCTAGCTCAAGTAA	-1.69	0.0291	-1.24	0.389
AW107953	CAATCAAAGCTGCTTCCCAGAATATGA	-1.69	0.0337	-2.15	0.0466
NM_010643	GAATGATGACATCCCGCAACCTAAGGA	-1.66	0.0483	-1.26	0.477

Supplementary Table 1: Results from In Vivo Screen 1

GeneBank	shRNA Sequence	Bl6 vs NSG Log2 FC	Bl6 vs NSG q Value	Bl6 vs SCID Log 2 FC	Bl6 vs SCID q Value
BC019425	CTGACATGCCTGGTGCGAGCTTTCAAC	-1.66	0.0483	-1.42	0.3
BB560492	TAACTCATCTGACTTAATATGCATTTA	-1.65	0.268	2.12	0.565
BM211317	TATCTGTATAACTCAGTAGCCACTGAA	-1.62	0.0431	-1.39	0.282
BB560492	TAACTCATCTGACTTAATATGCATTTA	-1.62	0.231	2.33	0.24
BF470301	TGGGATGACATCCTGCAGCTCTCTGCA	-1.6	0.0289	-0.914	0.686
NM_007808	ATCTCCACGGTCTGTTCGGGCGGAAGA	-1.53	0.0458	-0.526	0.787
BG069498	TGGACGAATGCAGGGATGAGCACAAAG	-1.53	0.0337	-1.59	0.0988
NM_010916	TCTTTGTCTGGTTGCATTCCTAATTTC	-1.52	0.346	3.16	0.418
BC020106	ATTTCCCTTGGCTGACACCCAGGTACT	-1.5	0.0386	-1.01	0.565
C78652	GGTTTCATTGGCACCATCCACACGCCT	-1.49	0.0165	-0.649	0.749
NM_138581	ATCCTGGCTGAGATCTCCCAGAAACTA	-1.49	0.0255	-1.26	0.17
NM_010581	AGAATGCTTCTGGACTTGGCCTCATTG	-1.49	0.0328	-0.66	0.772
AK008922	ATGCAGTCATGGACACCCTGGCTGAAG	-1.49	0.0151	-1.21	0.139
NM_007922	ATTATTCCTGGCTGTATCTGAGTCCAG	-1.48	0.0483	-1.06	0.546
BB620492	TAATATGGTTCTGATCTGTCATCTCAT	-1.48	0.0195	-0.355	0.795
L29457	TGGACGACTCCTGGCTGCAGGTGCAGA	-1.41	0.0429	-1.2	0.284
BB105833	CAGCATGTGGCTGGCTGACATTCTGTG	-1.4	0.00389	-0.854	0.147
AK013228	GCCACTGTTCTTGCATTTCTTCATAAA	-1.39	0.0308	0.0365	0.971
NM_010643	GATGACATCCCGCAACCTAAGGACAAG	-1.38	0.0315	-1.45	0.0839
NM_021408	CATGAGACTCCCTGGCAACATCTGAGT	-1.37	0.0296	-0.765	0.686
NM_133816	TGGACATCCTGAGGGCAGCTGCCTTCA	-1.36	0.0218	-0.913	0.411
AV317245	AAGTAGTTCTGTAGTTAGACTTCATAA	-1.34	0.315	2.4	0.444
BG067040	AAACTACGCTGACCTTTGGACCAGTGA	-1.33	0.0181	-0.401	0.787
AV062214	CATGCTGGACATCCGGGCGAGCTTTAA	-1.32	0.0115	-0.838	0.311
AF302138	AGAGCATCCCGGACTTGGCAGCTGAGC	-1.25	0.0305	-0.916	0.396
AA175822	TATGGTCATCATTCAGACGCTGGAGGT	-1.13	0.0269	-0.304	0.792
NM_025338	CTTGCTGCTTCTGACCCACTATAATAA	-1.1	0.0255	-0.0905	0.89
BG076284	AGGCTAAGGGCGTTCAGTCTGCTGCAA	-1.08	0.0141	-0.219	0.799
NM_008225	GCAAGGACCTGGCTGAACATCATGAGA	-1.04	0.0444	-0.902	0.282
AJ131395	TGAGGAAACTACCTCCTACTTGTTTAA	-1.02	0.0434	-0.176	0.817
BB457749	TGAGAAATGGCAATACCTTCATGGTAT	0.315	0.357	-0.807	0.229
AK014712	GTTCTATCACACACCAGGTTCTGTTGA	1.19	0.0315	0.885	0.396
NM_009994	ATGTTCCTCAGAGTATCTACTTCAGAT	1.27	0.0386	1.21	0.147
AW536361	TTAGTACTGTAAACTGCTTCTGAGCAA	2.36	0.0467	2.62	0.0966
BB195657	AAACATTCTGTTTAGCTATCAATATAA	2.99	0.0145	3.54	0.0253
NM_010945	AATGTGTGGTTTCAACTTCCTAAATCA	3.99	0.0315	2	0.749
BB131956	TGACCTTCCACCTGGTCCGGTGATCCC	4.04	0.0308	4.18	0.0893
AF083876	GAGAGAGGTTCGTCCTGACGTCCATCA	4.14	0.00901	2.98	0.147
NM_009359	GGTTCTTCACTCAGCATCAAGAGAGAT	4.22	0.0206	5.07	0.0337
BC011117	TGACCTTCCACCTGGTCCGGTGATCCC	4.22	0.0205	4.15	0.0739
NM_009359	ATCCTGGTTCTTCACTCAGCATCAAGA	4.65	0.033	5.49	0.0549
BB451412	TAACAAACCTCAACTAAGCCCACATCT	5.13	0.00731	5.09	0.0337
AW492190	TAGATTTCCTGTTGACCTACACGATCT	5.38	0.0145	0.643	0.829
NM_139059	AGTCAACGTCTCCTCATCTGATCTCAC	6.58	0.0403	4.77	0.491
BG070374	AGGTTCATGGCTACTTACTCGATTCCT	6.7	0.000367	-0.466	0.823

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BM230211	ACTTATGCCAAATCAGTTGTGTTTCAG	-6.18	0.0014
BC019509	ATCGGTGTTCGGTCAGTAATGCTTAAG	-5.81	0.015
AU015121	AGATGCTGCATACTTGTTCTTGACAGT	-5.8	0.00871
BC019407	CAACCCAGTACCTGACTACGAGCTTAA	-5.76	0.000408
BI156474	GTAAAGCAACTATACCTTCAGTTTAAA	-5.74	0.000142
BB813490	GTTATCTGACCCTGGCTACAGATTGAC	-5.7	0.000149
AI507538	CGTGGTGGATATGTGAACTTCTGTGTA	-5.5	4.29E-05
BG916808	TTGAACTGCCAACGTCCAGACAACTCA	-5.4	0.0154
AF477481	GTTTCTTTCATCAGTACACGACGCACT	-5.15	0.0243
AK009774	AGGACCACATCATCACGAGCTGATTCA	-5.05	0.0187
NM_009849	GAGTGGAGCCTCTGTTCTGATTGATCT	-5.04	0.014
NM_138648	ATGTTATCACTGTCTGTACAATTTCTG	-4.83	0.00712
NM_009420	TAGTGACATGTCACATCCCAAATGACA	-4.8	0.0306
AV167877	TTACACCAGCATGTGCTTGGAAATCAG	-4.8	0.0168
NM_023323	AGGCAGGTACCACCATATACAGCATAT	-4.71	0.0493
AA267016	TGGTCTGTGCTCATGAGAGCGATGCTT	-4.68	0.0407
AV326297	TAATAACCCAAAGTCCACATACTGCAC	-4.64	0.04
BB637556	GAACCTCTGTTACACTCATGCAGTAAA	-4.62	0.0312
BB259151	GTTAACTTCCTCACTGATTATCAATGT	-4.49	0.0453
BB128997	TCATTACCCACATTCTGCAACTTTGTC	-4.46	0.015
AK005395	TAGACCTCCAGACTACCTGTATGACAC	-4.44	0.0256
BB369191	GGTATTGTGCATTTGTGGCATTATGTA	-4.43	0.0152
AV326297	TTTAATAACCCAAAGTCCACATACTGC	-4.42	0.0436
BQ175524	ATTTCAGAAGCACTAGCAGCACTTTAA	-4.38	0.0152
BQ175524	GAAATCATTGTGTCATTGTCTACTATG	-4.37	0.032
NM_019447	CATGACCTTGTCTTGATCCGGCTAAAG	-4.34	0.0388
AJ300674	GATTGGAACTTGTGGATCTCCTTTCAA	-4.31	0.00531
AK016773	ATTACCTCCATGTCATGTCTCTGTACA	-4.28	0.00867
BQ175905	AGCATGCAGACTGCTCTGTTCTCACCA	-4.23	0.0196
BB032062	GTTCATACATGTCAATCTACCTCGTGT	-4.22	0.000793
BC008538	GAAACCTTTGGTCATGCGCCTGTGTGA	-4.22	0.0198
AF136449	ACACTACTGTTTGTTTCCTAGCTAGTC	-4.2	0.0447
AV265433	GTACTCCTCGCATCTCGAAAGTTATAA	-4.17	0.015
BG068961	GAAGCTACTTCTCCAAATGCATTGCAA	-4.15	0.0115
BM935724	TTTATTGCGTACTCTACCTGTGTAAAT	-4.13	0.0164
AW543416	GAATGTCCATAGCATTATAATCGCTTA	-4.07	0.0191
AK006106	GAGACTCAAAGCTGCTCGGAAACTTCT	-4.07	0.0353
AV167877	ACCATTACACCAGCATGTGCTTGGAAA	-4.06	0.0264
NM_007514	TAAATCATCCATTACTTTCAGAACACA	-4.02	0.0462
AW552018	ATCCTGGGCAACTGATATCTGTACAAA	-4.02	0.0492

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BB369191	GAAACGGTATTGTGCATTTGTGGCATT	-4.01	0.013
AK017027	ACAAGACTTGCATCGATCCCTGGCTTT	-4	0.0211
AK008551	TACATTTGACATCGGACCAGTGGAGAT	-3.91	0.0171
AV167877	GAACCATTACACCAGCATGTGCTTGGA	-3.91	0.0499
NM_007823	CATTCCTTCACTCCACAAATATTTGCT	-3.9	0.00639
BB253461	GTATGCTCACTATGCTAAATATTTAAA	-3.89	0.0166
NM_013827	CAAACGAAACTACCTCGGCTAGCATTT	-3.87	0.0164
BC008538	TTGGTCATGCGCCTGTGTGATTCTATT	-3.86	0.0264
AK003744	TCTACTACTTCCGAGACACCAAAGTCA	-3.85	0.0282
C85600	GTCATTGTCTACTATGTCTTCTAGAAA	-3.85	0.0208
NM_008825	GAAGGAACAGCTTTACGCCTCTGTCCA	-3.82	0.017
BG071917	ATTGGATCAGTCCATAGCTACCCACAT	-3.8	0.0234
AK004834	GAATTACTGGTCCTGTTTCCTTCATCT	-3.75	0.0117
NM_053143	TCATGCTTATAGTTCCCAGGACAATAG	-3.73	0.0141
BB424644	CATGAAGGACTGTTTAAACTTATTTCT	-3.73	0.0212
AY065557	GACATATGATCTCCATGATCCTAAGAA	-3.64	0.0375
BB126973	TAAATGTTCCTGTAATGTACCCTGGTA	-3.58	0.0262
NM_021892	GCTTCTTAACATCAAACACCTTCTGTA	-3.57	0.000112
NM_011339	AAGCCTCTATATCTTTCATTTGGGAGA	-3.51	0.0236
NM_010062	GTGTAACAACATCACATACTTCTGAAA	-3.5	0.0337
AW492270	CTATTCACAGGAGCCAATGTCCATACT	-3.46	0.0191
NM_016710	ATGCCTAACATGACACCTTTATACATT	-3.44	0.0305
AK012122	CTAAATACTGTCTGTACTAAACTGTAT	-3.44	0.0164
AV293314	ATACCTCATGCCTTCCACAGACATTCC	-3.43	0.0353
NM_023773	AGCTCAAATGTTCCTACCTAGTTGTAA	-3.41	0.046
NM_013519	ATGTGATCTCAGTGTTGTATTTACCTT	-3.4	0.0105
AV139714	ATATGACATCAGCTTTCTCATCACCAA	-3.39	0.000337
NM_024244	CTCTCTGTATTCACCTGCTGTTTATGA	-3.36	0.0374
BE553782	TAATTCTTATCTGCATGTATTAGTTAA	-3.34	0.015
NM_026160	GTAAGGATTCCTGTAATACTGCTTTAA	-3.32	0.037
NM_031251	TTGCACACAAAGATACCACAGTACCTT	-3.32	0.0285
NM_019781	TTCCAAAGTCCTGGCTGACAGATGCTG	-3.31	0.0228
BE291900	CAAGTGCTATGCCGTGAAGATATTTCA	-3.28	0.0341
BG069355	TAACTTATACTTGAACCTACCTGCTAA	-3.2	0.0312
NM_011890	ACCAGCAATGCTACCAGTGACTTAAAC	-3.17	0.0184
AW492270	TTCACAGGAGCCAATGTCCATACTGAC	-3.17	0.033
BB314393	ATGATTCTAATCTCCGGAGGGTGCTAG	-3.16	0.0136
BB465277	CCTTTGTTTCTCATGCTATACTTTGAA	-3.15	0.0115
AV321315	GAAGACAGACATCCTGGCAGTGAAGAC	-3.14	0.0259
BB465277	CCTTTGTTTCTCATGCTATACTTTGAA	-3.12	0.0312

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BC020141	TAACAACATTATGTAAGTCCATATGTA	-3.11	0.0337
AF004858	GTTTACAGTGTCATCATCCACACGCTG	-3.11	0.0224
NM_009163	ACAATTTGACATCTGGACTGGCTCCGT	-3.08	0.0234
NM_033354	TCACATTCTGACATCTGGCTATCAAGT	-3.08	0.0153
BM233292	TTTACTATCCACACCTAATGCTGAAGC	-3.06	0.0357
NM_011866	GAAGCTCTCACTTCAAACCATGTCAAA	-2.99	0.0353
AV281802	TAAATGACCTGAAGGGTTACCATCACA	-2.98	0.0402
AK012122	TAAATACTGTCTGTACTAAACTGTATA	-2.97	0.0204
AV378604	GTTATCTGTAACTGTCATTGTCATAAG	-2.95	0.00598
AF004858	TTTACAGTGTCATCATCCACACGCTGC	-2.94	0.0173
BB309956	AGATCTAGATTACCCTAAGAATGTTAA	-2.93	0.0103
AK017426	CTGGGCACTGTGTCCTATAACTGTAAA	-2.89	0.0122
AF004858	TTACAGTGTCATCATCCACACGCTGCT	-2.87	0.0238
AF037046	CAAACTTGCCGACATCTGCTCTGGGAA	-2.84	0.0144
AF004858	TACAGTGTCATCATCCACACGCTGCTC	-2.82	0.0321
BC023403	TTTAGTCCCTCTTTGAGGACTTTGTGA	-2.76	0.0376
BG093687	GAGTAAATAATATCTTACCAGACTTAA	-2.76	0.000568
NM_020586	AAATATGCTGGAAATTGCTCCCTGTAA	-2.74	0.0188
BM238998	TAAGGTTCCTTATCTCTTCTTACTAAA	-2.74	0.036
BE136101	TAGACATCTGGAATAAGAATCTGTATT	-2.73	0.0264
BB231137	TTTATGGCCTCTCTTTGTGCGAACATG	-2.73	0.0308
BC011476	TAATACTCTTCTCATATGCTACTCTCT	-2.72	0.0462
AK013740	TTTCTTATATCTTCTAGGGTGTGTTTG	-2.72	0.0251
NM_008634	CAGTCTACTTAATGCTGTGAATCACAT	-2.68	0.014
NM_017393	CTACGACACAATGCAGTACATCCTGAA	-2.66	0.0392
BG070419	TTTCCTATTGCATGTCACTTCCCAAAT	-2.65	0.0431
BE986833	AAGTGAACTTATTCTGTTACTAGAGAT	-2.63	0.0378
BC006680	TAAGCTGTTAACAAGTTTCATTGCACT	-2.61	0.0474
BQ176814	ATTAAATAAAGTACACTGTGGTCATTT	-2.61	0.0423
BB828144	TTCAGGCTCTAGTAGGTTCCAATTAAT	-2.61	0.0475
BG072054	TACCACATCATCACAGAGCCAACTTAT	-2.6	0.0464
NM_010062	ACAACATCACATACTTCTGAAATAGGA	-2.59	0.015
NM_010788	TCATGTGGACAGTTCTACCTGTAGTGA	-2.58	0.0254
AK005965	GATACCTGGCTGACAGTGAACCGCATG	-2.55	0.0427
NM_021468	ACATTGTCCACAATGCGCCAGTCAACA	-2.52	0.0307
AF004858	TGAGCAGCGTGTGGATGATGACACTGT	-2.52	0.0498
NM_010062	GTAACAACATCACATACTTCTGAAATA	-2.48	0.0153
AI594675	GTAACTAAACTCACAATATCTACTGAA	-2.47	0.0211
BE853428	CAATGACTCCTGTATTCTTATGAATAA	-2.44	0.0436
BC007159	TGCTTCCCTGTAGGTGCAACAACATTA	-2.43	0.0201

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BB465277	TAAATCCTTTGTTTCTCATGCTATACT	-2.43	0.0173
BC007159	TCTGCTTCCCTGTAGGTGCAACAACAT	-2.42	0.0311
BC007159	TCTGCTTCCCTGTAGGTGCAACAACAT	-2.42	0.027
BM118719	AGGCTGGCAATCACGGCCGACATAAAT	-2.41	0.0122
AV094519	GTGCTGACATCTGAGGATCTCTGTTTG	-2.41	0.0253
BG069418	TAAACAGTTATACCTCTTCCTTCTTTA	-2.39	0.0117
BB125490	CACTGTTGGCATTTACTATATTCACAA	-2.34	0.0253
BE197115	ACTTCCTGACTTCCATATTCTTATCTA	-2.33	0.0308
NM_009627	GGCTCATGCCAGAAACCGAGACTTACA	-2.3	0.0262
BC007159	TCTGCTTCCCTGTAGGTGCAACAACAT	-2.29	0.0297
BB465277	TAAATCCTTTGTTTCTCATGCTATACT	-2.27	0.0402
BC020138	AGGTGACATCACTGGCTGCAGCTGAAG	-2.26	0.023
AK005123	CAACACCTGCCTTTCATACTATAATTG	-2.26	0.0141
AV109882	TGGTAACTTACGTGCCTGTTACCACAT	-2.23	0.037
BC007159	TGCTTCCCTGTAGGTGCAACAACATTA	-2.21	0.0281
BC007159	TGCTTCCCTGTAGGTGCAACAACATTA	-2.2	0.0227
BC021528	TTGAATTATGTCCTGCTTCCAACCAGA	-2.19	0.00986
BB224338	ATTGAATTGAGATCTCTAGAACCCATA	-2.17	0.0496
BG069704	TTAAGCCAGCTTGTCCTATAAATAGGC	-2.16	0.00821
BG067040	AAACTACGCTGACCTTTGGACCAGTGA	-2.13	0.000112
BG798172	TAAGTCATTAATACCTAACTAGAATGT	-2.12	0.0425
BC019366	CAAACATTAATATCCATGCCATATCAT	-2.09	0.0495
BG067575	AGATGCCTTGTCTCCATGCTGACAGCT	-2.05	0.0166
AK016319	AGAACGAACCCTCTTCAGACAGAAATC	-2.02	0.00792
BB667930	GTTGTTACCTCCACATAAATGTCTTAA	-2.01	0.0065
AK003436	CTTCTTCATTGACATCCTGCTGGATAC	-2	0.0152
L40172	GAGTGGTGTTGTACGAGCTCTTCACCT	-2	0.00159
NM_031176	GAAAGGAAGCCGTGTTCGCCCAGTATG	-2	0.0292
BB400852	CCAGCTTTCTGAGCACGGAACCATTGT	-1.99	0.014
BB245565	TGCCTTGGTTCTCTCAAGACTTGGAGT	-1.99	0.027
BC010709	TGAATGCAACCAACATCGAGCTAGCCA	-1.94	0.0359
NM_018812	GGGCTGACATCCAAGGTTTAGATTTAT	-1.93	0.0417
AI464159	ATGTCAGCTTATAAGGTGCATCATTAT	-1.93	0.0456
AW550677	ATGGGCCTGCCTTCACCTCCAAGTACT	-1.93	0.0433
AF288378	TAATAATTCCCACTACTGTATTTGTGG	-1.91	0.0464
BB228135	AGAACTTCACTTGCTTCCTACAGATAA	-1.91	0.0311
BC021528	GAATTATGTCCTGCTTCCAACCAGAAC	-1.89	0.00892
BB015570	CATGTAACCGGAACCCATCTGAGTTAT	-1.86	0.0158
BC027174	TTCCCAGGACGACAGATGAGCAGGAGA	-1.83	0.0264
BB465134	GATTTGTTTCTGTTATTGACTTGAGAT	-1.83	4.29E-05

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
AV336439	TAAACTTAACTTCTGGATTTAGTATAG	-1.83	0.0409
AV113441	TATTCCCTCATCTCTATAACTCTAGAA	-1.82	0.0305
BB390252	GAACCACGACATCTGGCTGAAGTTTAG	-1.81	0.0299
BB344763	ATGTATTATTGTTGTTGACCCACCTCT	-1.8	0.00892
BG068932	CCCAAATTCTTGGACGGTGTATTGTGA	-1.8	0.0208
BI153474	AATTACTTGAAGAATTTGCCTGCTTTA	-1.79	0.046
AK015602	TGAAATTTGCACAGACCCGGCCGAGGG	-1.79	0.0436
BB740802	CTCAGCTCAGGTCTGCAAGACACATAC	-1.79	0.0462
AK006835	AGTTGACATTTGATCCTGGTACAGTAG	-1.75	0.00358
BG069523	ATTTACGGTTAGTTGCAGGATGACAGG	-1.74	0.00523
BG069135	TCATTGAAGCATTCGACATCCCTACAC	-1.74	0.0131
NM_009610	TGTGACATTGACATCCGCAAAGATTTG	-1.72	0.0219
BG143499	ATTTAAGCACTTGACAGTATTCCCATA	-1.7	0.00479
NM_010510	AGAAGAGTTACACTGCCTTTGCCATCC	-1.69	0.0359
AK013540	GTAAAGTACCCTGACTTTGGCTTCAGT	-1.64	0.00531
BB198104	TGGAATAAGCTACACTGAACCCTAAAT	-1.64	0.00354
BB363968	TTTAGGTTATTGTTTAGTTGCTGAATA	-1.64	0.0281
BQ176868	TACATGTTCTGCTGGTATTGTTGTAAT	-1.61	0.0115
BM239725	TGTTATATCTCAGGAACCATCTGTCCT	-1.61	0.0489
BG069130	ATGTACCTAATAGGATTGTGTTGATAT	-1.61	0.000701
AV066542	TGAGTTTCTTTGATTGTTGACTATGCT	-1.6	0.0115
AK018446	TAGTATACAGGACCCATCTGAAAGCAT	-1.59	0.0403
BQ174086	TAAAGAGTGTTGTTCTTCTGACCTTGG	-1.59	0.000261
BB166245	TAATGACATCTGGCAACTATCCACACT	-1.59	0.0315
BB822856	CTATTTGCCTCTACTTTGTATTGTTGA	-1.58	0.0122
AV208097	TATCCAAATGCAACCATATTTCATTAT	-1.57	0.0494
BG069498	TGGACGAATGCAGGGATGAGCACAAAG	-1.57	0.0485
AV002845	TAAGCAGATTACTTCCATCAGTATTGA	-1.57	0.00205
AK008551	ATTTGACATCGGACCAGTGGAGATCTC	-1.56	0.0437
AV377334	TCATGTCTCCACTGTTGATTCGTGTTT	-1.56	0.0168
BE948505	TGTTTCTCTAGTATTGTTCTTATGCAT	-1.56	0.0164
AK019580	TATGAGGATGCCACATCCATCTGACCT	-1.56	0.0431
BG066840	GTACTATCCCAGAAAGTGTTGACTAAC	-1.56	0.0359
BQ173880	AGGGTAGGATAGGTTATTGTCATTTAT	-1.55	0.0119
AW909375	GACATATTATTCTTACAGGTGTTTGTG	-1.55	0.00589
BC024836	ATATGCAACTGGTTAGTGTTGTTGACT	-1.55	0.00557
AK010380	TATAACCCTAGAAGCATCACGAGAGAA	-1.55	0.00557
BB042575	CTAATTAGGTTCTATAGTGTTTGACAG	-1.54	0.0152
NM_024435	AGCTAATTCTTGACCTGTGATTGTGAT	-1.53	0.00985
AK018289	GTGTATTATTTGTGTTGATTCTTTATA	-1.53	0.00358

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BF017629	TGGTCTTCTTAGGTGATTCCTGTGAAA	-1.53	0.0152
BB127935	ATGTTTCCTTCTAGGTTGGATTGTTGT	-1.52	0.00932
BG066541	GAATAAGTTGTTTGACTGTAACCCAAA	-1.51	0.0105
AW124687	AGAAATTCGGGTATTGATTTCAGGTAT	-1.5	0.00358
BC027174	TTGGACTCCAGCCACAGGAAGCATCCT	-1.49	0.0115
BG081701	TAGAAAGCCTTTGTGTATTGCCGGTTT	-1.49	0.00523
NM_008903	TCATTCAGGGAGCTGCTATGGCTATAC	-1.48	0.0224
NM_008319	TGGACGTATGTATTGTTCGCTCTCTAT	-1.47	0.0115
BB212031	GAAGTTTAGTGATTTGCCCAGTCATTC	-1.47	0.00479
BB520662	TCAGAGAACCATCTGCTAGACTTTAAT	-1.47	0.014
BB054332	GTTATTGACTCCAGATTGATCATTGGA	-1.47	0.00358
C77984	TTGTATTGCATCTTTGATATGTGTCTT	-1.46	0.00678
AK017626	ACTTTGTATATTGCTTGACATCCGTAT	-1.45	0.0431
BB667153	GTACTTAACTGTATTGACCCATGAATA	-1.44	0.00153
BG067064	AGATAGGACTTGTGTTAGGATTGTGAA	-1.44	0.0257
BB400432	GTTTCTGTGGTATTGTATTCTCTAAAT	-1.43	0.00479
BC027328	GAAGTCACGAAGCTGAACCAGGAGCTG	-1.42	0.0299
BB519063	TACAGTGATATTGTATGGTAGTATAAT	-1.42	0.00201
AF166486	ATTGTTGTTCAGGATGGAGTTACTCTG	-1.42	0.000112
AV267070	GAGATATTTGATTGTTTCCTGGAAATG	-1.41	0.0152
BC021517	CCTTCTGGCTCCATGGCTGTTAGCATA	-1.39	0.0119
BC005601	GAACCTTCTTGATATGACGCATTGTCT	-1.39	0.0355
AW489260	GATAACGTCCTTGGTGTGACATCTGGA	-1.38	0.0117
BB752129	AGGTATTTGACCATTCACTGGCTGAGC	-1.38	0.0192
AI317241	GTGATAACATTGACACCCGGACTGTCA	-1.38	0.023
BB539404	CATTGACTTAGATGTTAGCTGCATACA	-1.38	0.0158
C77798	ATTTCCATAAGTGACGGTGTGTTATAG	-1.37	0.00792
BG068694	TGACTAGGTAGTTTGCTTTCTTTCTGT	-1.37	0.0136
BB522094	GCAGATACGCCAGTATTGTTGTTAAGG	-1.37	0.024
BB125172	TCTATTGACCAGATGTGAGGTGCATAA	-1.37	0.000798
AF425084	GAAAGGTTGTTCTTGTCAGTATTTCAT	-1.37	0.0191
AU016382	GTTAGTGACACAACGGTGACAGGTAGC	-1.37	0.0227
NM_008182	AAATACAATTGTTGATTCTGGCTATTG	-1.36	0.0264
BM247146	GGACCTATCTGTTCCTGGTATTGTTGT	-1.36	0.0353
BB138185	AAGATAACTGGGTATTGTTTGATGTGA	-1.36	0.0141
AK010086	GAACCCTGTGTCTGGATGATTGTCACA	-1.36	0.0264
BM899023	ACAGACCTGAAGTATTGTTTGCAATAA	-1.35	0.00176
BB451404	ACAGATGATTAAGGATTTAGCCAAAGA	-1.35	0.00511
BG069462	GACATAGTGACCAGTATTGTTTGTTGT	-1.35	0.00441
BE957271	AGAGTATTTCTAGTTGTCGAAGTCAAT	-1.35	0.0102

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BB294794	GTCTGTTCTAAGGTATGTTGCTATAAT	-1.34	0.015
U58993	GTTTGTATTCGTGTTCATTGTGATTAA	-1.34	0.0141
BB268102	GATTGTTGCTAACTTCTGTTGTCCTAA	-1.34	0.00479
AU015158	CTTTAGAAGTGTTGCCTAGTTGAACAA	-1.34	0.0115
BG074849	GTCTATTGAAGTCTTGTTGATACCAGA	-1.34	0.00325
BM569571	TGAACCACTTGAGAGCTACACCTGTCA	-1.33	0.0087
BB005556	ACCTGCAGCTACCACGGACACCAGGAG	-1.33	0.0255
AV297525	GTACAATACTCTGACATCCTACCAGTA	-1.33	0.0458
BB022982	GGCTGAGTGCTAAGGATTGGTCTATGT	-1.33	0.00959
BG066267	ATCCAACTTCCCAGCTTGACAGGAGAA	-1.33	0.0497
BB257743	GAGTTGATTCTTTGTCCTATTATTGAC	-1.33	0.0324
BG068711	GAATATGTGTTTGACCTCTTACAAGAA	-1.32	0.015
BB396783	AGTATTGTTGGACTCTTTGCATTGTAT	-1.32	0.0422
NM_025318	AGAAGTTAGTTGTCTCTGCCAGAAGTG	-1.32	0.0147
L11065	TTATTTCTGTATTGCCTTGGGTTATAC	-1.32	0.014
NM_010404	CCTTTGTATTGATGTATGTGCCAATGT	-1.31	0.0431
NM_026602	CTATGTAAACTGTTGTATTGCTTCTGT	-1.31	0.00354
AW146284	TAAACAGATTTAGACGTAGACAGGAAC	-1.31	0.024
BB701723	TGTTGATGATATCCTGCCCTGTGGACC	-1.31	0.00441
AU022074	GTGTGATAGGTAGACTCTTAGTGTTAA	-1.31	0.00792
AK013216	ACTGTTATCCGTATTGCTTCATCTAAT	-1.31	0.0175
BQ176656	CATGTTTGTTGGTGATCTTTGTATTCT	-1.3	0.0115
BB490889	GCAGTGTTGACATGCCTGGCTTTCATG	-1.3	0.00792
BB829587	GATTAGAAGATAACACCCAGGAATTGT	-1.3	0.013
BM206269	ATGTATCTATATTCTGGTACTCAAAGG	-1.3	0.015
AF059567	GTATTGTATGAAGTTCCCGGGCCCTCT	-1.3	0.00892
AB008192	AGGTCTTTGCGGAGTGCCTCAGTGACA	-1.3	0.0402
NM_011345	ATTCCAGTATTGTTGTCACAGGCGTAA	-1.29	0.00892
BE457827	AGGAGTGTCCTGTATTGTTGAAAGAAA	-1.29	0.014
NM_023910	CAACTTCTCGGATTCAGGTTGTTGTTA	-1.29	0.0119
X63440	TAAGTCTTTGTGTATCTTACTTGTAAA	-1.28	0.0474
NM_009001	CCCAGCTCGGCCGTGGTGTATTGTGGT	-1.28	0.0159
AK004646	AAGCAGAAGTATATTGACTGTGCAAAT	-1.28	0.02
AV046786	AGTGAAGTTCTTATTGGTTGATGAAGT	-1.28	0.00531
BG070318	ATGTTGGTTGATTCTCTTTGGTGATGT	-1.28	0.0164
BG076340	GATGGTGACCCTCTTGACTTGAGAAGA	-1.27	0.00557
BB503481	GTATGTTGAATTTATTGTTGGCTGGTA	-1.27	0.0196
BB766106	GTAGACACCCGGAAGCAGGAACCATGG	-1.27	0.0225
BB272123	CCAGTTCTGCCTGTTGTAGGTGTTGGA	-1.27	0.0486
AK015177	TGAGTCTACACGATTCTTAGGTATTGT	-1.27	0.0152

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
NM_009707	ATATTGTGTGTATTGTAACGTATGTGT	-1.26	0.0332
NM_021438	CAAGGTTCTCGTGGCTGACAAGGACCT	-1.26	0.0437
AK017269	ATCCTGTAGTCTGATTGTTGCTTTAAT	-1.26	0.00531
BQ174030	TCCTCTTCCAGTTTGTCAGTATTGTGA	-1.26	0.0481
BB471557	TAAAGTAGATATTGTGCCTAGTGACAG	-1.26	0.0292
BB536138	GGTAATCGTATTTGGTCCTCTTTGATA	-1.26	0.00201
BB807032	GAATGTATTGTATCCAAGGCCTTTGCA	-1.26	0.013
BI134671	GAGAAACCTCGGAAGCAGCTAAGCTCT	-1.26	0.0228
AK019582	TGATTGATTACCTCGTCTGGCCCTGGT	-1.26	0.0368
BM241722	GATGAGAGTTGTATTCTGCTTTAATAT	-1.26	0.00663
BI076815	GAAGGTATTTCAGTAGAGTTGGAATTA	-1.25	0.0117
BB506495	GTCTCAGAGGAGTTGTATTGTTTCCAT	-1.25	0.00326
BB076251	ATTCCCTTGGTGTTGATTCTGTTAAGA	-1.25	0.0248
BE951146	GATAGTTACCAGCATTCTGTACAGGAG	-1.25	0.00173
X63440	TAAGTCTTTGTGTATCTTACTTGTAAA	-1.25	0.022
BB147418	TGTTGATACTGCTTGACTCCACTAGAC	-1.25	0.0103
BB434117	AGAATTGCTTTAAACTGAGTATTGATC	-1.25	0.00892
AW549928	TCATTGCATGTGATAAGGTGATCATGA	-1.24	0.00446
AK007234	CAACGTATTGTTCCCTGTCTTCAGATA	-1.24	0.0231
AK017091	CTACTCCCAGCTTGTCGATGGATAACA	-1.24	0.015
AV042259	TCCTACAGGGTAGTGTTGAGATTCTGT	-1.24	0.016
AW536798	TGTATTCTGACTTCCCATTGACAGGAT	-1.24	0.0115
BG076154	TCTGCATGTTGCGTAGTTGATTTAAAG	-1.24	0.0166
BM219223	ATACCCGTATTGATGAGTGACTAGGGC	-1.24	0.0164
BE861826	GGATTTGGCTACAGATGTATTGGTATA	-1.24	0.0192
BC003764	GATAACCCATTAGAAGCACAAGAATTA	-1.24	0.00384
AK004931	ACTGACCCAGCAATAGAAGTGTTGAGA	-1.24	0.0164
AK017822	GAGAAGAACCCGCATCAAAGCATAAGA	-1.24	0.0312
BM206565	ACTTCTGTTGGTAATGTATTAGTCTTA	-1.23	0.00441
AK008070	GATTTCCTCATTGTTGACCCTATTGAA	-1.23	0.0132
BB332988	CACTGAAGTGTTGTCCCTATATTGCAT	-1.23	0.0437
AI662452	AAACTCAGATTAGAAGACTAAGGTGCT	-1.23	0.0144
AV300114	TATTTAATAGTTGATGTGAGGGCTGGA	-1.23	0.0129
AK014951	GACGTGTTATTTGTTGGTTTGGAATAT	-1.23	0.0141
BB482300	TGAATTTGATTGTCCCTTCCTCCCTCC	-1.23	0.0115
AV145466	ATTCCCGACGATACTGGTGTTTGCGTA	-1.22	0.0117
BE198251	CTTAGGTATTGCTCTTTGGCTGTTTAA	-1.22	0.00399
BB507557	TTGTTATTGTTGAGAGGCAGCCAGATA	-1.22	0.023
BB408277	GTGTTTGCATATTTGATTGTTCTAATA	-1.22	0.0186
BB328265	TGTTGACTTCATATGCAGGTGACATAT	-1.22	0.00358

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BB431008	CTATACCTGTGGTTTATTGACGCTAAT	-1.22	0.00792
BB121616	GAATGATTGTATTGTCTCCTCCCATCT	-1.22	0.0141
BB032422	CATTTACACGGACCATCAGAAGATTTC	-1.22	0.0329
NM_053132	TGATGTGATTTCCTAAGTGTTGTACAA	-1.22	0.0159
BB322201	TATGTTGATTTAAGCGCGGCCCGGCTA	-1.22	0.0317
AU044383	TAAACATGATTGTGATTCTGGAAGGAA	-1.22	0.0262
AK005193	AGCTGACACGGAATGAACCCTGCAACA	-1.21	0.0485
AK020350	TTACAGATAGAACCCAGCTTGCCCTCT	-1.21	0.0255
BB833422	GAATTTAAGGTGTTTCTGCCAGTACTT	-1.21	0.00358
BB222737	ATGTAGGTTTGACTCCATATGAATATA	-1.21	0.0182
BM248709	ACAAGAAAGTGTTGTCTAATCCTAGTA	-1.21	0.00986
AI642973	GAAGCTAAGAGTGTTTGTGGTTGTAAT	-1.21	0.0187
BF137345	GTATTGACTGTATTTCTTCTGTGTTAT	-1.21	0.015
BC020532	GTCTCAGAGGAGTTGTATTGTTTCCAT	-1.2	0.00479
AK017889	AGAACCCAAGCTAGAGGAACCCTCACT	-1.2	0.017
BB550860	AGTATTATTTGATTGGAGCTGTTTAGG	-1.2	0.046
BB176386	GAAGCTTTCTGTTTGGTATTGACACTT	-1.2	0.0233
BF467171	GTATTTGCTGACATGGACCTGCTACAC	-1.2	3.00E-04
BB132288	ATTTGTATTGTTCTCATTGTCCTGATG	-1.2	0.03
BI499978	GTACTCTTCCTGTGATTGTTCTTTAAA	-1.2	0.0145
BB117756	CTATTCTTACTGAAGGTTTGATGTGGA	-1.2	0.0351
AV124281	TCCGGTTTGTCCAGTGATTGTTCTTTA	-1.2	0.0464
NM_053120	TAGACGACAAGGATTAGTTCTTTCTAT	-1.19	0.00792
BB019121	GTTGTAGAGATTTCAGCAAGAAGCAAG	-1.19	0.00999
BB465854	TAAATAAGTTGTGTCTGCCAGTGTTGA	-1.19	0.00531
BB054454	CGTAGATTGATAGCGCCCTCCAGTGGC	-1.19	0.0115
BI180598	GAAGTGTATTCATTGACCGCAGCTAAA	-1.19	0.0464
BF181187	AGCAAGTAGTTGGTGTTCATTCTCTAA	-1.19	0.00892
NM_011728	TTGTGAAGAAGAACCCACGCCATTCAC	-1.19	0.031
NM_007733	AAGCAACCATCTGAGTCCTATTCTGAC	-1.18	0.0351
BQ031311	ATGACTGTTTGATAGCGTTGTTTAAGA	-1.18	0.013
AV307561	GCTGACTGACATGCAGAGCTGCTTCAG	-1.18	0.0311
BB174749	CAAGCTTCCGTGTTGATAGTACAGTGT	-1.18	0.0332
BB542455	TGATGCCTGGACTTTGGTGTTGTTATT	-1.18	0.03
AV229522	AAACGTATTGATCTTTGGAGTGACCTA	-1.18	0.0111
AK020301	GAAACTTGACTTGGTGTTGCTACAGGA	-1.18	0.0402
AK013357	ATAGGTGTTTGCTTGGCACGCAGGAGG	-1.17	0.0178
AK018211	CAGTATTCAGATTGTGTGTCTTTCTGT	-1.17	0.0115
BB764011	GTACGACCCTCGAAGCAACAAGTGGGA	-1.17	0.0348
AW543723	ATGTTGATGCCTTCAGTCTGATGGACT	-1.17	0.0164

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BE944943	TAAAGTTGATTACCTCGCTCATTCTCG	-1.17	0.0171
AI593417	GAGTTCTTTGACAGTGAGGGTTGATAG	-1.17	0.0211
AK012130	GAGTGCTTCCTGTATTGTCTGTAAATC	-1.17	0.0395
AK012944	TAGTATTCTGTTGAGCGTTTCCTTAAA	-1.17	0.00663
AK009986	CTCAGGAAGCTGTGCTGGCCAAGGAAA	-1.17	0.0449
AK007675	GGTGTTGTCTCCAGGAAGCATCATGGA	-1.17	0.014
AI851177	GATACCTGTCAGAATTGGAGTTATTTC	-1.17	0.00792
BQ176684	CCTTATTGCAGTGGATTGATTTGATAG	-1.16	0.0171
AI447438	ATAGTTATCCCAGGAGGTTGACCCTGG	-1.16	0.0461
BG067266	AAAGTAATTTGATGCCTGGAAGTGTTT	-1.16	0.0219
BC027371	CATTGTTAGTATTTGTCTCTCCTTAAA	-1.16	0.015
NM_080462	TTGAGTTTCATTGGCTTACTGATAATA	-1.15	0.0427
M29881	CGAAGAGTATGTGACCTTGATTGTTAT	-1.15	0.046
NM_033077	ATTGGCCGTACAGGTCGTGTTGGAAAC	-1.15	0.0285
BB551848	GAATGTTTCGTTGTTCTGACCATGAAG	-1.15	0.0116
AW125035	ACTTACTGTTATTGACAGCTGTGTAGT	-1.15	0.0161
BE981615	AGTTGATACCATTGCCAGTCCCATGCT	-1.15	0.0212
BB488380	TTCTCAGGTTTGACGTGGGCTAGCCCT	-1.15	0.00892
BI739353	GAAGTTTGACTACGTGTTTGCTGAGAA	-1.14	0.0164
AV151862	CTAGGTAGGATTGTTGGGTCTCTCATA	-1.14	0.0215
AV233564	CACTTTCTTGACTGGTATTTCATAGAT	-1.14	0.012
BB125604	GATTGTTGCTCCATAGAGTCTGTTGTA	-1.14	0.0158
BE987325	GTGTATTGCCCAGTTTCTAGTGAATCA	-1.14	0.0458
BQ176837	GTAGTTCTGTATTGCTGAGTTCTTTGA	-1.14	0.0436
BG064069	CCTTAGCCAGGTAGTATTGTCATTCAT	-1.14	0.0152
BI076789	CATTGGTTGATATTGCATGGATATATG	-1.14	0.0132
NM_009266	TTGAGCAGCTTGTCCGACAGGAAAGGA	-1.14	0.0103
AK018651	AGTTAGTTGGTATTGTAATCATTTAAT	-1.13	0.00153
BB369299	AGGTGATTATTTCAGGAGTTTGGGATA	-1.13	0.00557
AI481875	GAGTTTAGTATTTGAGCCCAGGTTATG	-1.13	0.0225
AK012700	AGCAGTATTTAGAAGTCGAACTTTGTC	-1.13	0.00967
AV018484	CACTGACATTGGGACATCACCTGGAAT	-1.13	0.0117
BM938335	CTTTCATTTGATGTCTGTATTGCCAAT	-1.13	0.0141
NM_010552	GTTGATTTAAGGTTCTCTCCTCTGAAT	-1.12	0.0497
BC016533	ACATTCTGACATTCTCCTGACAAATGG	-1.12	0.0097
AV271892	TTACAGATACAGTAAGATTGGTTAGAA	-1.12	0.0438
BB457668	CCTCGTGTTGTATGTTTGCCCTTGTAT	-1.12	0.0193
BB523550	TGCAGCTGTTTAGGGATTGTTTGGTTT	-1.12	0.00663
BB331017	TCTTGAGGTTGTTTGATGCTTTAAATA	-1.12	0.00849
BB462437	GGTGCTATGGGTATTGTTTCATTTATA	-1.12	0.0315

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BB305810	GTGTATGACTCTTGATGACGGTCTTAA	-1.12	0.0328
BG063160	AAATGTTTAGTCTTGTTGATTTGGTTC	-1.12	0.0492
NM_013669	GTACCTTTGTGATAGGATTGAAACCAA	-1.11	0.0407
AK012795	CTTGGTTTGACTTCTCTATTTCAGGAT	-1.11	0.0338
BC017622	GTTGACCAGAAAGCTCCCGAATACATC	-1.11	0.0104
BB404315	ATCTTGACCAGTTATGTTGTTTGAATG	-1.11	0.024
AV274826	TCTGGACTTGAAATCTGTACTTTGAAA	-1.11	0.0153
AV312674	GAGTTGAATTGCTTGTAGGACCTTTGG	-1.11	0.0158
BB070287	TCTGAATTTGGGTGATGGGAAGCATGT	-1.11	0.0448
BB291827	GGTGATGTAATGATCCAAGTGAAGAAC	-1.11	0.0474
BB292231	TAAAGTATTGTTTAGCTCTGCTGAATT	-1.11	0.0143
BB303731	TGCGCTCGCTGGTTGATTTAACGTTCA	-1.11	0.0421
NM_011693	GGTTGACTTTCAGGTACTACTTTCTAA	-1.11	0.00523
BI465746	TCAGTTCTTTCTTTAGTGTGTATTGTC	-1.11	0.0153
AU019881	CCCAGAAGTTATTGAGCCTCCGGGTCA	-1.1	0.00548
AF332052	AGAAGATTACCACCTCCAAGAAGCCAA	-1.1	0.012
M64266	GATGCCAAGGACAGCACAGATCTTCTG	-1.1	0.0353
BF785056	AGAGTGTTGTCCAGTGACAGGAGTTTG	-1.1	0.032
BI734389	GAGAGTATTTGACCCGTTTCCTGCAGC	-1.1	0.0242
AV307358	TAGTGTTTGCTATTGTCTGTGCTACTT	-1.1	0.0152
BB318357	AGAAGAACCCTCACACCACACACATAA	-1.1	0.0274
BB710847	TAGGTATTGGAGTTATAGACTGTTGTG	-1.1	0.0166
BB291885	GTGACTGTTTGACTCTTGGTATTCAGA	-1.1	0.049
NM_007752	GATTGTTTGTCGGAAGTCTTATGTGAA	-1.1	0.0174
BM220651	TATATTGATTGTACTGCTCCCGCTGAA	-1.1	0.0281
AV336908	GTTTCATCGGTGTTGAGTCTGTTTCTA	-1.1	0.0115
AV224102	GAAGGCATTTGTTCCCAAGGTGTTGAA	-1.1	0.0167
BB488978	GTTTATTACGTATTTCTGGTTCTCAAT	-1.1	0.0324
NM_080795	GAATTTCTCCCTGATCTGTTAGTGTTG	-1.1	0.0188
BC027174	CCCAGGACGACAGATGAGCAGGAGAAA	-1.09	0.0429
BG070809	TTATACAGGTGTTGCTCTTAGGAGTAC	-1.09	0.0407
AK015733	GTTAACTTTGTCAGTGATTGCTAGTTA	-1.09	0.00892
AK015821	ACAAGACTTGTAGGATTGTCACCACAT	-1.09	0.0147
BG076151	TAATTCAGAAGTAAACCTTTCATAGGA	-1.09	0.047
BB251859	TGACATTGGTGAGTTCCTTTATTAAAT	-1.09	0.0105
BM238272	CAGGTTAGTATTGGCTCTGAGTCTCTG	-1.09	0.0103
BB555130	ATGGCATATATCTTGACATCTGATCTT	-1.09	0.0182
BB768208	GGTTAGTGTATTGTTGAGCAGGTCTAA	-1.09	0.00792
BB816770	TGACACTTATTGGATGTGATTCTAAGT	-1.09	0.0264
NM_008088	AGGTAGTTGCTACACAGGAAGCGAAGG	-1.08	0.000261

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BC025874	AGAACTCATCTGTGATTGTCAGGAGGA	-1.08	0.045
BB073296	CCAAGAACCTTGCTACGGATTGGAGAT	-1.08	0.0224
BB417279	TGGATTCTGTTCTGATTGTGTGATTGT	-1.08	0.0157
BE954335	AGTGTTGTAATGGTTGCTAGTCTTTAT	-1.08	0.0427
BB306111	TTAGTGGTAGAGTTATTGCCTGGCATA	-1.08	0.0485
AI158425	ATGTTGACCAGGTTGTCCTCGAACTCA	-1.08	0.00479
AK017541	TAAGGATTGTGCTACAGTTGCTAGTGG	-1.08	0.0498
BG075178	TTAAATTGTCAGAAGCCACCAGCTCCA	-1.08	0.0185
AK009111	ATTATTGACCAGTTTATCCCGGTGTGT	-1.07	0.0158
AK020681	AATGACGATAACCAGACCACCATTTAC	-1.07	0.0212
BB291766	AGACCCAAAGAATTGACTCCATTTAAA	-1.07	0.0183
BE945021	TCTGGTTCTGTGTATTGAGAATTTAAA	-1.07	0.017
BB318809	CTCTCCCTGTCTGGAGGTATTGTTATG	-1.07	0.0428
BG067460	TAATCCAACATGGAACCATCTCAGGAA	-1.07	0.045
BG069835	ATTTGTGACATTAAGCAGGAGAGTTTG	-1.07	0.0191
NM_010701	GACATTTGACCCTAGACTGGACCATGA	-1.07	0.0153
BC021525	CAGGGAAGCATCTGAGAGGCTAGCATA	-1.06	0.0458
BE865094	AGCAGATTGTAGTGACCCAGAGGTGAA	-1.06	0.014
BB074761	GTATTGTTCTTTGATATTTCTATGTAA	-1.06	0.0455
BB655693	ACTTTGTAGGTTTGTATTGCTTATACC	-1.06	0.0233
AI646720	TTAGATGTATTGAGCACTGTGTAACTA	-1.06	0.0178
BM240795	GTTGATATGTGTGCCTTGATTGTATAA	-1.06	0.00211
BB035768	GTATGTTGAGATTTGCCCAGGTGTGGG	-1.06	0.0171
BB216071	ATTGCCTGTTGGTAGTTGAAATATAAG	-1.06	0.0224
BE634837	GAACTCTCCTATTGACAGTATGCTTTC	-1.06	0.0485
BM293801	AGTATTGATCTATGTTCTGTTGTTAGA	-1.06	0.0133
AW548149	TAAAGGTATTGCTCTGGTTGTCTCCAT	-1.06	0.0267
BB256689	GGTAATTGTTGATGTACCCATTGTACT	-1.06	0.00289
BC024597	TGACCTTGATTGTAGTCCATTTAATAA	-1.06	0.00844
AV010392	GCTATTTCAGGATTGCCATGTGTGCAA	-1.06	0.0241
NM_013464	GTTTGTCTGTATTGCCAAGTGCCAAAT	-1.05	0.00792
D17919	GACATAGAAGTCAAAGGCCAAACATTT	-1.05	0.028
AY094172	ATGTTTGACATAATCCTGGACGAGAAC	-1.05	0.0379
BB424644	TTCTTGTTCTACAGGTTTGATTCTAAT	-1.05	0.0191
BG083246	CAAACGATATAGTTGCTGTCAGGATTA	-1.05	0.0306
AK019559	AAAGTGTTTGTCGTTCTGTCCATTCAG	-1.05	0.0215
BG070008	GTCTTTGTATGGTTGACAGCATGCAGT	-1.05	0.00358
BB394142	GGCTCCTTCGAGTGTTTGATTTGTAAA	-1.05	0.0166
BM117916	TGATAATGTGATAGGCAGGCTGGCCAA	-1.05	0.0162
BB733992	TCCTCTGACCGATGCTTGTGAATTGTG	-1.05	0.013

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BB463128	AGTTGTTTGATGACCCATGTCCGATAG	-1.05	0.0297
BQ129058	CTTTGACTGTTGTAATTGGTTAACTTG	-1.05	0.0166
BB487289	TGACAGCTCCGGTGTTGTGTGTATTTC	-1.05	0.0225
AA985754	AAGCTGAAGAAGCTATAAAGGATGTTA	-1.05	0.00235
NM_010393	CTGCAGAGTATTGTGAGGACTTCCTGA	-1.05	0.0292
AV160737	GAAAGAACCCAAAGGAGCATCGTATGG	-1.05	0.033
BB240897	CATGTTCGTGACAGTTGTAGCCCTCAT	-1.05	0.0105
U13174	ATTGCTTTCTGACGTGTGTATGTGTGT	-1.04	0.014
NM_025551	TATAAGGATTGGTACACTGGTGGGAGA	-1.04	0.00358
BC018297	CAAGTTTGACCCAAAGGTGGATGATAA	-1.04	0.0236
BC021448	CCTTTGTACTACAGGAGGAGTGTTGAA	-1.04	0.0483
AK020543	TAATGGTGTAGTTTGCGTTTGTTCCTT	-1.04	0.014
AV016940	AGTTTGCGTTGATGGAGGGTGTTGAGT	-1.04	0.0448
BB151173	ATTGTGATTAGTGAGTGCCGCTTGAGC	-1.04	0.0119
BB278628	GAGAGGACCTCAGGATAGTTTATATGT	-1.04	0.0145
AV225034	CTTGCTTTATGATGTTGGTGTTGAACT	-1.04	0.0395
BM941145	TCTTGTGCAGTATTGTGACTCCCAAGA	-1.04	0.017
BB165231	ATGACACCTCAGTGTAGTTATTGTTAT	-1.04	0.0293
BB474913	ATCTTTGACAGTGCTAGGTATGGGAAT	-1.04	0.0224
BB506415	GGGTTGGAAATAAATAACGGTGATGGT	-1.04	0.0246
BB083438	GGGTGACTTCTGATTAGTTGTGTAAAT	-1.04	0.00986
BB009155	GAAATGTTGTATTGACTCTCTGAGTCT	-1.04	0.00985
BC008174	GCGTTAATGACGTCTTTGTGATTGAAG	-1.03	0.0187
AK006661	GAAGGTATCTCATTGGACACGTATTCA	-1.03	0.0234
BE981485	ATTTACCCAGAATTGACCTGCCTTTGC	-1.03	0.00677
BB705380	GGAAGGTTAGCTGTAATCACGTGAGCA	-1.03	0.00986
BB794710	GTATGTCAGGATTAGTTTAGCCAATAG	-1.03	0.0431
AI506066	ACATGTTAACTATGGTGATTCATTTCT	-1.03	0.0403
BB634277	AGCCAGGCACTGGTGATTTAGTAAATA	-1.03	0.0337
AI464148	ATTTGTTCATCGTTGTGTTGCCTCAGC	-1.03	0.0301
BB502529	GTACCTTGTGTTGTGGTTGACTCCAAC	-1.03	0.00643
BG068354	TTGCAAAGTAGTTGTGTCAGGGACTTG	-1.03	0.0147
BM195033	GAAGGATCTATTGGTTGTCTGAATAAT	-1.03	0.03
BB713790	CTGCTCAGTATTGCTTATTGACCATCT	-1.03	0.0312
BB165757	TGGGTGTTCCGTTTGTTGGTCTGCTTT	-1.03	0.0407
BF536757	GTGATTTGGTTAGTGTTAGTATGTTTC	-1.03	0.012
BB729869	AGGATTGGGATGACTTCTGCTTCTAGA	-1.03	0.014
BC018446	ATTTGACAGTGTATGCATTTGAACAAA	-1.03	0.00892
AK009460	CAGAGGAAGAACCATCGACCAGCACTG	-1.03	0.0448
BB385366	GCTTTAGATTTGATTGGCAGGGCTTCT	-1.03	0.0225

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BI965035	TTCTAAATAAGTGTTGTCCTCTCCTCT	-1.03	0.0282
C80158	CGTTGTTTCTGCGATTGGTATGTACAG	-1.02	0.0407
BI558379	ATGATTCAGGTTTGATACTTTACCATT	-1.02	0.0499
AK014472	CATGGTTTCATATGGTGATTCTTACAT	-1.02	0.0225
AK002930	CTGCTCATGACTGGGTATTGATTTCCT	-1.02	0.0178
AK021383	ATAACCAGGTATTGTAAGTCTCCATTT	-1.02	0.0283
AK016604	GTCCTTGTTCTAGGGTGACTGGATTGT	-1.02	0.0367
AK020073	TGATGTTTGACAGCCATTGTTTATCAT	-1.02	0.00417
BM236206	TGATGTATTCTCAGTAAGGTTCAGAAT	-1.02	0.00211
BI439550	AAAGATTAAGAAGGACCCATCAATTAT	-1.02	0.017
BB757123	GGTATTGTGCCTCTGTTGTGTGTTTGA	-1.02	0.0447
BB462178	CATCAAGAAGTAAACGAGGGCAGGAGT	-1.02	0.0234
BB386167	ACACGATTTGGTTGCATGTGATAAACA	-1.02	0.0148
BE946999	TTCTCTTCAAGCGTAACGCAGCTGTCA	-1.02	0.0346
AV296285	TGTTTGATACTGTGTGCGACGTGGAGA	-1.02	0.00792
BF464242	TCAGGGACCCGATTGGTGCTGGACACA	-1.02	0.0178
C77308	GATTGAGTCTCCAGTATGTTTCTTAAG	-1.02	0.0297
AI595379	TTACCCTCTGAAACTACAGCCAATCCT	-1.02	0.0192
AF479673	GATTGAATTTCGTGATGCCTTGGTTCA	-1.02	0.0178
BB291816	TGATTGAGCTATTTGACTTGACTTCAT	-1.02	0.0394
NM_025464	TTCTCGGAACCCATATGCAGGATTTCT	-1.01	0.0377
AF169826	GCTATAAAGTGTTTGACCTTCGCTACA	-1.01	0.0119
AI606617	AAAGGTGATCCAAGATTAGTAATGTTT	-1.01	0.00358
AA881383	TTAGGTAGAAGCACCCTGGTCTGAGGG	-1.01	0.0119
BE979753	TTAACACCAAGCAAGCAGGAACCTTGC	-1.01	0.04
BB478562	GTAAGTTTGATACTGACCCTGTTTCAG	-1.01	0.017
BM125285	GCAGGTATTGCCGTAGGTGTTCATTTA	-1.01	0.0224
BB013432	AGACTGATGATAGTGTTTGGCATGAGA	-1.01	0.0427
BB211484	GATTTGTGCTTGACATCAGTATCCATC	-1.01	0.0103
BB667457	TAACTTGTTTGTGTTGGTTGATGCTGT	-1.01	0.0141
BB194779	TAAGGTGTTCTTGTATTTGCTGCCTAA	-1.01	0.046
BB244838	CAGGTGGGATTCGATTGTCTATGGAAG	-1.01	0.0375
NM_028375	TAAGTTGATTATGGCCCTCATGGCCTG	-1.01	0.0312
AK016849	ATACCTGCCAGTAGTTGATGCACAGAA	-1.01	0.0462
BG068357	TGTCTATTGTTTGAAGGTGTTGCCTAT	-1.01	0.017
BG064671	ACAGTGACTCCAGAATCAATCAAAGTA	-1.01	0.015
BB481932	GATTGGTTCTTAATTGATTTGGACTAT	-1.01	0.015
BC024696	TACACTGATTGTTGGGAAGGTCCTTGG	-1	0.0147
AK004807	ACCTTGGCAGGTATAGTGTTTGGAGGA	-1	0.0119
BB547478	GAGTTTCTGGTTGTATTGGATGCCTAT	-1	0.0315

Supplemental Table 2: Results from In Vivo Screen 2

GeneBank	shRNA Sequence	Bl6 vs SCID Log2 FC	Bl6 vs SCID q Value
BB529013	ATTTGACTTTGGACTAGGACTGGTAAG	-1	0.0115
BB779105	GGAATTGTTCAGAATGGAATTGTTCAT	-1	0.0223
BB340127	GATTAGAAGTATATGGGCTCGCCCACA	-1	0.048
AK008824	ACGTATTTGATGTAAGGACTGGCATGG	-1	0.0141
BB439493	AGATGTTTGATACCTGCATTTGCAGGT	-1	0.0164
BB027654	TACACTCATCTTGTTGTGTCAGAAATA	1.49	0.0415
AW556269	TCATGTCTCACACCAAGTTTACCAATG	2.49	0.0261
BM241540	TGTTCACTAGCAAATATTCCATAATAA	2.7	0.0216