

## Supplemental Table S1

**Top 100 genes whose sgRNAs are preferentially depleted in *Mhl1* KO cells compared to parental CT26 cells**

id	num	neg.score	neg.p.value	neg.fdr	neg.rank	neg.goodsgrna	neg.lfc
Rps6kl1	4	1.14E-05	0.00010322	0.694059	1	4	-1.0285
Il2rb	4	2.29E-05	0.0001583	0.694059	2	4	-1.0695
Padi4	4	2.51E-05	0.00016118	0.694059	3	3	-0.68368
Spem1	4	2.88E-05	0.00016501	0.694059	4	4	-1.4387
Ctu2	4	3.15E-05	0.00016788	0.694059	5	4	-1.0582
Pgf	4	4.39E-05	0.00022297	0.768152	6	3	-1.1349
G3bp1	4	5.52E-05	0.00035037	0.775283	7	4	-0.84264
Fbxw10	4	6.33E-05	0.0003772	0.775283	8	4	-0.88716
Zfat	4	7.42E-05	0.00046198	0.775283	9	4	-0.79008
Crb1	4	7.54E-05	0.00046198	0.775283	10	1	-0.10488
Clec12b	4	0.000103	0.00050939	0.775283	11	3	-1.0449
Cpb2	4	0.0001109	0.00063058	0.775283	12	3	-0.79578
Arxes2	4	0.000111	0.00063058	0.775283	13	3	-1.2063
Fam46c	4	0.0001257	0.00067895	0.775283	14	2	0.13857
Avpr1a	4	0.0001317	0.00077044	0.775283	15	3	-0.99324
Tmem40	4	0.0001466	0.00078577	0.775283	16	3	-1.1356
Ifit1	4	0.000147	0.00078577	0.775283	17	3	-0.961
Cnga1	4	0.0001625	0.00087725	0.775283	18	4	-0.93333
Ankrd13a	4	0.000165	0.00089545	0.775283	19	4	-0.8623
Sema3f	4	0.000176	0.0009558	0.775283	20	2	-0.4208
Unc93a	4	0.0001777	0.00097688	0.775283	21	2	-0.8396
Gucd1	4	0.000179	0.00097736	0.775283	22	4	-1.09
AI607873	4	0.0001841	0.00099412	0.775283	23	4	-0.77932
Slfn14	4	0.0001886	0.0010262	0.775283	24	4	-1.3664
Matn3	4	0.0001893	0.0010262	0.775283	25	2	-0.49389
Cts7	4	0.0001935	0.001042	0.775283	26	3	-1.1741
Scaper	4	0.0001938	0.001042	0.775283	27	3	-1.1263
Veph1	4	0.0001984	0.0010502	0.775283	28	3	-1.1944
Gpatch11	4	0.0002186	0.0011249	0.796865	29	4	-0.88745
Stambp11	4	0.0002262	0.0011565	0.796865	30	2	-0.31422
Frem1	4	0.0002553	0.0012877	0.856281	31	4	-0.89307
Bdh1	4	0.0002656	0.0013256	0.856281	32	4	-0.8845
Fus	4	0.0002765	0.0013711	0.858836	33	2	0.05288
Pdlim2	4	0.0002984	0.0015181	0.871975	34	4	-0.95548
Celf1	4	0.0003045	0.0015186	0.871975	35	2	-0.66059

Adra1a	4	0.0003053	0.0015186	0.871975	36	3	-1.1434
Mast1	4	0.0003176	0.0015933	0.888353	37	4	-0.71119
Dram2	4	0.0003268	0.0016331	0.888353	38	4	-0.90756
B3gat1	4	0.0003738	0.0020493	1	39	4	-0.80638
8030423J24Rik	4	0.000392	0.0060225	1	40	2	-0.48052
Flt3	4	0.0003977	0.0060229	1	41	4	-1.0026
Ebf2	4	0.0004061	0.0060569	1	42	4	-0.86404
Lrcol1	4	0.000409	0.0060574	1	43	2	-0.46501
Olfr51	4	0.0004107	0.0060574	1	44	3	-1.5318
Heatr5a	4	0.0004273	0.0060718	1	45	3	-0.36115
Hemgn	4	0.0004277	0.0060718	1	46	2	-0.62874
Plagl2	4	0.0004776	0.006385	1	47	1	0.55883
Terf2ip	4	0.0005234	0.0065508	1	48	4	-1.0609
Tmem221	4	0.0005243	0.0065512	1	49	4	-0.71889
Gm960	4	0.0005278	0.0065512	1	50	1	-0.11258
Ccdc173	4	0.0005352	0.0066039	1	51	4	-0.68931
Gfpt2	4	0.0005413	0.0066413	1	52	3	-0.96154
Atmin	4	0.0005621	0.0067222	1	53	4	-0.94611
Ankrd13b	4	0.0005693	0.00674	1	54	3	-1.7668
Stk36	4	0.0005715	0.00674	1	55	4	-0.65257
AI467606	4	0.0005756	0.0068947	1	56	4	-0.6418
Prph2	4	0.0005781	0.0068947	1	57	1	0.29135
Agap1	4	0.0006283	0.0070705	1	58	1	0.36655
Olfr1329	4	0.0006337	0.0070705	1	59	4	-0.68078
Rac2	4	0.0006343	0.0070705	1	60	4	-0.75941
Daglb	4	0.0006359	0.0070709	1	61	4	-0.95774
Lhx8	4	0.0006371	0.0070709	1	62	2	-0.46076
A530064D06Rik	4	0.0006658	0.007195	1	63	4	-0.70341
Spp12b	4	0.0006786	0.0071955	1	64	3	-0.40931
Aqp11	4	0.0006814	0.0073492	1	65	4	-0.71478
Pax3	4	0.0006854	0.0073952	1	66	4	-0.65117
Lrrc3b	4	0.0007026	0.0073957	1	67	4	-0.94274
Clca2	4	0.000712	0.0074469	1	68	4	-0.87498
Olfr1474	4	0.0007257	0.0074857	1	69	4	-0.90454
Olfr350	4	0.0007289	0.0074857	1	70	3	-0.23359
Fhl2	4	0.0007389	0.0075044	1	71	2	-0.59338
Fam24a	4	0.0007601	0.0075466	1	72	4	-1.2683
Srsf11	4	0.0007706	0.007547	1	73	4	-1.3618
Rnft2	4	0.0007723	0.007547	1	74	2	-0.64575
Rnf19b	4	0.0007744	0.0075662	1	75	4	-0.63735
Mkxn3	4	0.0007791	0.0075662	1	76	3	-0.55993
Pdcd1lg2	4	0.0007934	0.0075667	1	77	3	-1.0532

Id4	4	0.0007959	0.0075667	1	78	4	-0.78235
Pxmp4	4	0.000811	0.0075935	1	79	3	-0.78165
Ddx39b	4	0.0008294	0.0078704	1	80	4	-1.4349
Pbx3	4	0.0008429	0.0080461	1	81	3	-0.82498
Kdelr1	4	0.0008482	0.0080629	1	82	3	-0.91714
Tbpl1	4	0.0008706	0.0081419	1	83	4	-0.88879
Insm2	4	0.0009283	0.0082871	1	84	4	-0.66913
Vps72	4	0.0009298	0.0082871	1	85	3	-0.4851
Arntl2	4	0.0009536	0.0083853	1	86	2	-0.73607
Gm2863	4	0.0009611	0.008403	1	87	4	-0.86361
Pgbd1	4	0.0009752	0.0084557	1	88	3	-0.86456
Zfp563	4	0.0009801	0.0085136	1	89	2	-0.23449
Ap1g2	4	0.0010303	0.0085141	1	90	1	0.33558
Kif3b	4	0.0010337	0.0085385	1	91	3	-0.72659
Nono	4	0.0010376	0.0085385	1	92	3	-0.78975
Rras	4	0.0010446	0.008539	1	93	4	-0.77898
Lasp1	4	0.0010484	0.008539	1	94	4	-0.74507
Cacna1g	4	0.0010625	0.0085678	1	95	4	-0.76514
Cdk17	4	0.0010806	0.0085682	1	96	3	-0.41822
Scyl3	4	0.001085	0.0086042	1	97	3	-0.79913
Vmn2r108	4	0.0010886	0.0086971	1	98	4	-0.9143
Nkapl	4	0.0010972	0.0087641	1	99	3	-0.87114
Homer2	4	0.0011308	0.0090233	1	100	1	0.19268

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