



Supplemental Figure 1. Dose-dependent effects of puromycin on IFN γ and ATP levels (supplement to Fig. 3B). Screening results in comparison with the effect of puromycin in non-transduced Th1* cells. Puromycin was titrated in the concentration range 0-2 μ g/ml. Results for T-bet, IL23R, CD160 and ISOC shRNAs are highlighted in different colors. Data were analyzed as described in Fig. 3B and Methods.

Rank	Gene	% IFN γ (normalized per ATP)	S.E.M.
1	ISOC1	29.8	1.8
2	CD160	34.9	2.0
3	HSPE1	39.4	1.7
4	IER5	40.3	4.4
5	RPL39	40.9	3.4
6	RPL17	43.5	2.2
7	FILIP1L	45.5	0.6
8	GAB1	45.6	0.5
9	PREP	46.1	2.3
10	ZAK	46.6	2.4
11	NTN4	46.9	0.2
12	IL23R	47.0	1.8
13	IL12RB2	47.6	1.5
14	CYP2E1	48.4	1.9
15	CASP4	49.2	3.0
16	TMEM136	49.7	5.4
17	LCK	50.3	4.8
18	LTB	50.8	2.9
19	LRRTM2	51.0	1.5
20	TNFSF13B	51.3	1.9
21	IL18RAP	52.2	1.1
22	SASH1	53.4	1.3
23	TMEM186	53.6	2.4
24	IL1RL1	53.7	0.6
25	RORC	54.6	3.6
26	PDE4D	55.3	4.2
27	T-bet	56.0	1.9
28	MTUS2	56.7	8.3
29	PARD6A	56.7	2.4
30	ZNF444	56.9	16.4
31	ADRB2	57.2	4.4
32	LRRC16B	57.5	0.9
33	CAMK2N1	58.9	6.0
34	ZNF133	59.1	2.9
35	DAB1	59.2	2.3
36	SLC22A15	59.5	4.4
37	SEPT4	60.0	0.7
38	FZD8	60.1	6.4
39	IFI44L	60.7	1.8
40	RUNX2	60.7	1.4
41	ABCB1	60.9	3.2
42	D4S234E	61.5	4.8
43	ILF2	61.7	7.3
44	TLE4	61.8	4.5
45	ATXN7L3	61.8	3.8
46	STRAP	62.0	1.5
47	YRDC	62.0	1.5
48	MESDC1	62.1	2.6
49	TMED9	62.3	2.7
50	CXCR6	62.4	2.5
51	CCL20	63.3	0.3
52	KIT	64.5	7.7
53	CFH	65.2	4.3
54	BCL2L11	65.3	2.0
55	ELOVL4	65.3	2.4

56	B3GALTL	66.0	3.9
57	PRF1	66.4	2.3
58	CATSPERB	66.6	2.6
59	HOMER1	67.1	2.9
60	PSMB5	67.2	3.3
61	RAP1A	67.4	5.2
62	PPIA	68.2	1.1
63	WNT1	68.4	3.8
64	TPBG	69.0	8.7
65	SIN3A	70.3	3.7
66	IL18R1	70.6	2.7
67	EDN1	70.7	2.9
68	FRMD8	70.8	1.8
69	CLIC4	71.1	2.9
70	RAB12	71.4	6.7
71	GATA	71.5	7.7
72	PPBP	71.7	2.9
73	RIPK2	72.1	3.0
74	LATS2	72.3	17.3
75	ADAM23	72.7	1.3
76	FCER1G	73.2	6.5
77	PTPRF	73.3	2.7
78	CCR2	73.3	3.2
79	CD1C	73.5	3.6
80	C11orf31	75.7	4.6
81	SPCS3	76.3	3.2
82	PDZD2	77.0	3.4
83	ITGB1BP1	78.4	0.0
84	CAMK1D	79.5	5.1
85	c6orf228	79.8	0.8
86	TSPAN15	80.1	12.0
87	WASF1	82.9	5.1
88	PABPC1	83.8	2.5
89	PSMG3	84.2	0.8
90	HNRNPA1	84.2	3.8
91	IL32	84.9	3.8
92	DPP4	85.2	2.3
93	LPAR3	86.0	14.6
94	C8orf83	89.1	4.4
95	PLEKN1	94.6	7.8
96	SLC17A3	96.2	1.4
97	SHC002	99.6	1.3
98	ENPP1	101.2	9.3
99	CYFIP1	335.2	96.2

Table S1. The results of shRNA screen for regulators of IFN γ production in Th1* cells. Data are IFN γ levels normalized per ATP (as described in Fig. 3B,C and Methods) and expressed as percentages of control values (means and S.E.M., n=3-6 replicate samples).

Rank	Gene	ATP, % of control	S.E.M.	IFN γ , % of control	S.E. M.				
1	D4S234E	19.6	4.2	21.7	1.7				
2	CYFIP1	13.6	4.2	27.8	8.0				
3	ISOC1	49.7	1.8	31.0	1.8				
4	ZAK	32.1	1.7	35.3	1.8				
5	CD160	50.2	2.4	36.5	2.1				
6	HSPE1	41.1	1.5	37.0	1.6				
7	CAMK1D	23.2	1.6	38.7	2.5				
8	IER5	47.5	7.6	41.2	4.5				
9	GAB1	40.6	3.1	42.4	0.4				
10	RPL39	55.6	5.3	44.3	3.7				
11	RPL17	58.2	4.2	47.5	2.4				
12	LCK	41.5	3.2	47.5	4.5				
13	PREP	54.8	2.2	49.8	2.4				
14	FILIP1L	59.1	2.1	49.9	0.7				
15	CLIC4	30.0	1.6	49.9	2.1				
16	SLC22A15	35.8	5.5	50.1	3.7				
17	SPCS3	28.5	2.7	50.3	2.1				
18	IL12RB2	53.5	4.6	50.9	1.6				
19	NTN4	60.5	6.5	51.5	0.3				
20	IL23R	66.8	3.3	51.8	1.9				
21	CASP4	51.2	0.8	51.9	3.1				
22	CYP2E1	59.4	2.3	53.0	2.1				
23	TNFSF13B	51.6	5.7	54.3	2.0				
24	TMEM136	60.4	2.6	54.6	5.9				
25	LTB	55.9	1.7	55.0	3.1				
26	SASH1	50.3	3.9	56.0	1.4				
27	LRRTM2	68.2	9.3	56.1	1.6				
28	RORC	48.3	5.7	56.2	3.7				
29	PARD6A	45.3	3.0	56.6	2.3				
30	SIN3A	34.5	1.3	57.1	3.0				
31	IL18RAP	66.9	4.8	57.6	1.3				
32	GATA	34.2	4.9	57.7	6.2				
33	ILF2	41.5	4.1	58.2	6.9				
34	WNT1	36.6	3.8	58.7	3.2				
35	IL1RL1	60.1	2.8	58.9	0.7				
36	TMEM186	60.8	5.7	59.0	2.6				
37	PDE4D	55.3	2.8	59.8	4.6				
38	ZNF444	51.0	2.6	60.0	17.2				
39	T-bet	75.3	3.5	60.7	2.1				
40	ADRB2	81.0	5.5	60.9	4.7				
41	MTUS2	57.1	1.5	61.7	9.1				
42	ZNF133	51.9	5.9	62.7	3.1				
43	LRRRC16B	68.4	8.7	63.3	1.0				
44	DAB1	57.4	2.6	64.5	2.5				
45	CAMK2N1	70.3	2.9	64.7	6.5				
46	SEPT4	58.1	3.7	65.5	0.8				
47	FZD8	58.3	4.4	65.7	7.0				
48	RUNX2	58.3	4.3	66.4	1.5				
49	IFI44L	59.3	2.7	66.5	2.0				
50	TMED9	53.6	4.5	66.8	2.9				
51	ABCB1	68.9	7.3	67.0	3.5				
52	ATXN7L3	75.4	4.8	67.0	4.1				
53	YRDC	55.9	4.0	67.2	1.6				
54	STRAP	74.3	5.7	67.4	1.6				
55	TLE4	59.8	6.5	67.7	5.0				
56	MESDC1	70.6	5.8	68.1	2.8				
57	CCL20	77.8	4.3	68.2	0.3				
58	CXCR6	59.1	0.3	68.3	2.8				
59	PLEKN1	31.1	3.2	69.2	5.7				
60	KIT	53.8	12.5	69.2	8.2				
61	C8orf83	32.9	6.2	69.3	3.4				
62	EDN1	44.0	0.6	69.3	2.9				
63	CFH	53.7	3.9	69.8	4.7				
64	LATS2	43.4	7.5	70.3	16.8				
65	PSMB5	81.1	2.6	71.5	3.6				
66	RAP1A	52.7	3.2	71.8	5.6				
67	ELOVL4	62.5	5.2	71.9	2.6				
68	BCL2L11	64.3	7.2	72.0	2.2				
69	B3GALTL	69.7	2.6	72.4	4.3				
70	PRF1	72.9	5.5	72.5	2.5				
71	TPBG	52.2	8.8	73.3	9.3				
72	CATSPERB	66.2	1.6	73.5	2.8				
73	HOMER1	64.8	5.2	74.0	3.2				
74	FCER1G	46.6	2.2	74.1	6.5				
75	PPIA	67.5	3.3	75.1	1.2				
76	RAB12	77.0	0.3	77.1	7.2				
77	ADAM23	53.1	2.6	77.6	1.4				
78	IL18R1	66.8	7.4	77.8	3.0				
79	LPAR3	39.2	7.1	77.9	13.3				
80	FRMD8	62.9	5.8	78.0	2.0				
81	PTPRF	53.2	3.4	78.3	2.9				
82	PPBP	62.4	1.4	79.0	3.2				
83	RIPK2	60.3	4.3	79.1	3.3				
84	CCR2	73.5	7.1	79.9	3.5				
85	CD1C	73.9	1.6	80.1	3.9				
86	PDZD2	53.2	3.8	82.3	3.6				
87	C11orf31	74.2	4.7	82.4	5.0				
88	ITGB1BP1	59.2	2.4	85.8	0.0				
89	c6orf228	73.4	4.1	87.0	0.9				
90	TSPAN15	58.8	8.7	87.7	13.1				
91	PSMG3	52.6	5.0	89.7	0.8				
92	WASF1	56.1	3.4	89.9	5.6				
93	HNRNPA1	73.4	3.6	91.9	4.2				
94	DPP4	55.1	7.1	92.0	2.5				
95	PABPC1	66.7	5.8	92.4	2.7				
96	IL32	72.1	6.0	92.8	4.2				
97	SHC002	100.0	1.5	100.0	1.3				
98	SLC17A3	75.5	3.6	104.3	1.6				
99	ENPP1	55.0	2.0	109.2	10.1				

Table S2. The results of shRNA screen for regulators of IFN γ production in Th1* cells. Data are IFN γ and ATP levels (also shown in **Fig. 3A**) and expressed as percentages of control values (means and S.E.M., n=3-6 replicate samples).

CD160**TRC ID:**

TRCN0000057578

1

TRCN0000057579

2

TRCN0000057580

3

TRCN0000057581

4

TRCN0000057582

5**OLIG_SEQ**

CCGGCCCAGCTTCATCTAAATACTTCTCGAGAAGTATTTAGATGAAGCTGGGTTTTTG

CCGGCGCGACTAAACTTAATCTGTACTCGAGTACAGATTAAGTTTAGTCGCGTTTTTG

CCGGCTACACAGTGACGGGATTGAACTCGAGTTCAATCCCCTCACTGTGTAGTTTTTG

CCGGTCTCAGTTGATGTTACCATACTCGAGTATGGTGAACATCAACTGAGTTTTTG

CCGGCTGTACTGTATGGCATAAGAACTCGAGTTCTTATGCCATACAGTACAGTTTTTG

ISOC1**TRC ID:**

TRCN0000140596

1

TRCN0000140230

2

TRCN0000140633

3

TRCN0000141622

4**OLIG_SEQ**

CCGGGAAGCGGCATTAGCAGAGATTCTCGAGAATCTCTGCTAATGCCGCTTCTTTTTTG

CCGGGTTCGAGGTTACATTGTTGCTCTCGAGAGCAACAATGTGAACCTCGACTTTTTTG

CCGGGCTGTGATATGCAGGAAAGGTCTCGAGACCTTTCCTGCATATCACAGCTTTTTTG

CCGGCAGACCAGCCATCAAGTATTTCTCGAGAAATACTTGATGGCTGGTCTGTTTTTG

TABLE S3. TRC shRNA library clone IDs and sequences corresponding to ISOC1 and CD160 shRNA used in the study.