

Table S1. ISG Microarray Data Sets and Inclusion Criteria for Screening, Related to Figures 1A and 1B

Supplementary table 1: ISG microarray data sets and inclusion criteria for screening				
Reference	IFN	Tissue / cell type	Time pt	Inclusion criteria (FC – fold change)*
Bartee et al., <i>JVirol.</i> 2009 83(2):498-511	IFN- β	primary human fibroblasts	24h	2.4-fold
Kane et al., <i>Nature</i> 2013 502(7472):563-566	IFN- α	differentiated and undifferentiated THP-1, K562, U937	24h	2.4-fold

*a total of 401 genes were compiled, from which 14 were added to the existing library

Ten publications with microarray data sets from various IFN-treated cell types or tissues were analyzed previously analyzed and 387 ISGs included in the original library (Schoggins et al., 2011). Data from two additional publications was analyzed for this study, and 14 ISGs added. Inclusion criteria: 1) only type I IFN-treated cells or tissues were included (type II IFN excluded), 2) only data from 24h time point were included, 3) only genes with fold changes greater than 2.4 were included (last column).

Table S2. Spread Scores for ISGs from the Two HTM Screens, Related to Figure 1B

	ratio 24/8hpi	
ISG name	screen #1	screen #2
MAP3K14	2.22	1.86
mean α-HA	2.55	3.19
<i>ELF1</i>	4.64	4.16
<i>IFIH1</i>	3.66	6.82
<i>IFITM3</i>	9.78	1.01
<i>PMM2</i>	9.09	5.03
<i>DDX58</i>	5.78	11.89
<i>MX1</i>	14.16	3.84
<i>FAM46C</i>	17.77	0.79
<i>TBX3</i>	15.78	3.88
<i>IRF2</i>	14.91	5.98
<i>SCO2</i>	18.38	4.05
<i>BST2</i>	15.49	8.36
<i>SERPINE1</i>	7.63	16.56
<i>HERC6</i>	22.75	1.53
<i>IRF7</i>	17.71	7.03
<i>MOV10</i>	20.82	3.99
<i>CCL5</i>	12.01	13.19
<i>UPP2</i>	20.30	4.92
<i>B2M</i>	19.36	6.79
<i>MARCK</i>	26.32	0.57
<i>CRY1</i>	17.21	9.94
<i>LAMP3</i>	22.57	4.77
<i>IL28RA</i>	10.86	17.68
<i>RIPK2</i>	21.95	6.89
<i>MT1L</i>	19.09	10.06
<i>XAF1</i>	18.11	11.30
<i>MAFF</i>	17.43	12.38
<i>CD274</i>	22.59	7.35
<i>TAP2</i>	29.49	0.89
<i>IFITM2</i>	20.10	10.65
<i>TNFRSF10A</i>	23.36	7.49
<i>SAT1</i>	28.94	1.95
<i>IRF1</i>	25.26	6.03
<i>SLC25A28</i>	17.75	13.57
<i>IFI44</i>	30.37	1.18
<i>TRIM34</i>	29.65	2.01
<i>NPAS2</i>	25.77	5.91

<i>GBP5</i>	27.96	3.87
	ratio 24/8hpi	
ISG name	screen #1	screen #2
<i>TNFSF10</i>	16.27	15.80
<i>GPX2</i>	23.75	8.36
<i>THBD</i>	23.64	8.65
<i>EIF3EIP</i>	13.32	19.39
<i>MX2</i>	24.86	8.16
<i>CSDA</i>	25.04	8.03
<i>IRF9</i>	22.72	10.44
<i>SLC15A3</i>	25.26	8.91
<i>PTMA</i>	30.60	4.00
<i>KIAA0040</i>	25.51	9.14
<i>ARHGEF3</i>	28.94	5.88
<i>MYD88</i>	20.29	15.00
<i>C2orf31</i>	20.15	15.19
<i>XRN</i>	13.68	22.14
<i>CCL2</i>	28.27	7.55
<i>CTCFL</i>	25.14	11.07
<i>IFI35</i>	22.01	14.31
<i>FLJ23556</i>	10.90	25.61
<i>DUSP5</i>	25.22	11.45
<i>ENPP1</i>	19.98	16.95
<i>HERC5</i>	27.03	9.90
<i>LMO2</i>	26.98	10.22
<i>RBCK1</i>	29.94	7.33
<i>CCL4</i>	26.44	10.86
<i>SP110</i>	17.89	19.51
<i>TRIM56</i>	36.36	1.12
<i>HLA-C</i>	25.87	11.82
<i>TDRD7</i>	28.47	9.40
<i>MAFF</i>	19.55	18.39
<i>LGALS9</i>	27.30	10.83
<i>LAP3</i>	31.96	6.58
<i>THOC4</i>	21.66	17.06
<i>TRIM21</i>	19.87	18.93
<i>PFKFB3</i>	32.12	6.78
<i>GMPR</i>	36.49	2.49
<i>CX3CL1</i>	21.13	18.07
<i>FER1L3</i>	28.65	11.03

<i>DEFB1</i>	31.27	8.66
<i>SAMD4A</i>	29.57	10.38
	ratio 24/8hpi	
ISG name	screen #1	screen #2
<i>CXCL11</i>	32.36	7.73
<i>ADM</i>	31.84	8.55
<i>SPTLC2</i>	33.42	7.06
<i>FLT1</i>	38.31	2.20
<i>ULK4</i>	24.26	16.52
<i>ABLIM3</i>	23.18	17.87
<i>LGMN</i>	28.76	12.42
<i>HES4</i>	34.45	6.95
<i>GBP4</i>	34.99	6.47
<i>RNF19B</i>	19.59	22.05
<i>IFIT5</i>	32.99	9.29
<i>FNDC4</i>	23.24	19.09
<i>CRP</i>	27.07	15.44
<i>ZNF313</i>	22.61	19.93
<i>MT1M</i>	22.83	19.99
<i>SMAD3</i>	34.84	8.01
<i>PRAME</i>	31.63	11.32
<i>AHNAK2</i>	33.87	9.08
<i>LEPR</i>	35.19	7.83
<i>MT1H</i>	35.77	7.26
<i>NCOA3</i>	41.10	2.05
<i>C9orf19</i>	25.27	18.00
<i>ABCA9</i>	42.75	0.52
<i>MTHFD2L</i>	21.69	21.73
<i>RBM25</i>	31.77	11.70
<i>SIRPA</i>	33.83	9.67
<i>HSH2D</i>	31.27	12.56
<i>APOL1</i>	30.96	12.88
<i>NCF1</i>	22.84	21.07
<i>LGALS3</i>	23.82	20.20
<i>RIPK2</i>	28.85	15.47
<i>CFB</i>	37.94	6.80
<i>ERLIN1</i>	31.25	13.77
<i>CCL19</i>	20.88	24.18
<i>TNK2</i>	20.21	24.92
<i>BCL3</i>	19.70	25.49
<i>MT1G</i>	24.62	20.74
<i>PXK</i>	35.29	10.14
<i>ABTB2</i>	30.18	15.34

<i>ODC1</i>	32.59	13.01
	ratio 24/8hpi	
ISG name	screen #1	screen #2
<i>MAP3K5</i>	29.81	16.02
<i>STAP1</i>	24.38	21.47
<i>EHD4</i>	24.13	21.82
<i>CXCL10</i>	37.61	8.39
<i>SP100</i>	29.57	16.50
<i>TLR7</i>	31.43	14.86
<i>TRIM5</i>	28.20	18.17
<i>ISG20</i>	34.25	12.15
<i>GK</i>	35.36	11.19
<i>ARG2</i>	31.34	15.33
<i>PFKFB3</i>	30.22	16.47
<i>CCDC75</i>	38.60	8.20
<i>CREB3L3</i>	28.12	18.77
<i>WHDC1</i>	22.67	24.31
<i>SECTM1</i>	33.97	13.14
<i>IFI16</i>	41.14	5.96
<i>C6orf150</i>	28.28	18.86
<i>CMAH</i>	28.00	19.17
<i>PLSCR1</i>	35.24	12.14
<i>MASTL</i>	27.82	19.75
<i>C4orf32</i>	30.51	17.11
<i>SOCS2</i>	31.97	15.72
<i>SAA1</i>	19.36	28.35
<i>RBM43</i>	36.09	11.65
<i>ANKFY1</i>	22.27	25.66
<i>MCOLN</i>	31.54	16.48
<i>HPSE</i>	38.80	9.53
<i>AQP9</i>	29.25	19.08
<i>SLC16A1</i>	38.37	10.02
<i>FLJ11286</i>	44.92	3.60
<i>USP18</i>	34.76	13.85
<i>FAM134B</i>	37.30	11.39
<i>ATF3</i>	23.77	25.22
<i>ZNF385B</i>	40.24	9.27
<i>MCL1</i>	30.37	19.22
<i>BCL2L14</i>	25.72	23.90
<i>CLEC4D</i>	41.31	8.52
<i>SLC25A30</i>	43.26	6.77
<i>PPM1K</i>	34.31	15.99
<i>MICB</i>	26.92	23.53

ISG name	ratio 24/8hpi	
	screen #1	screen #2
<i>NRN1</i>	40.84	9.62
<i>BLZF1</i>	22.59	27.89
<i>DDX60</i>	22.03	28.51
<i>HCP5</i>	41.14	9.42
<i>HESX1</i>	27.64	23.09
<i>BIRC3</i>	35.09	15.80
<i>PARP12</i>	15.53	35.41
<i>CCL8</i>	27.61	23.49
<i>NOS2A</i>	49.38	1.91
<i>FBXO6</i>	35.45	15.94
<i>CD74</i>	30.53	21.07
<i>SERPINB9</i>	28.57	23.08
<i>NDC80</i>	43.30	8.38
<i>RSAD2</i>	42.83	9.32
<i>AGPAT9</i>	31.60	20.57
<i>ZNF295</i>	44.14	8.08
<i>STAT3</i>	29.90	22.51
<i>TRIM25</i>	35.02	17.52
<i>ARNTL</i>	48.50	4.15
<i>GZMB</i>	32.29	20.38
<i>N4BP1</i>	42.18	10.60
<i>OGFR</i>	38.24	14.89
<i>C9orf91</i>	18.63	34.95
<i>LAMP3</i>	44.51	9.23
<i>GCH1</i>	44.54	9.35
<i>STAT1</i>	40.49	13.53
<i>CES1</i>	44.17	9.97
<i>RASSF4</i>	38.25	15.95
<i>CDKN1A</i>	48.19	6.32
<i>S100A8</i>	40.85	13.74
<i>EPSTI1</i>	35.18	19.46
<i>PCTK2</i>	24.94	30.04
<i>CD80</i>	33.33	21.84
<i>PI4K2B</i>	19.94	35.34
<i>P2RY6</i>	51.19	4.13
<i>DDIT4</i>	39.07	16.36
<i>IL15RA</i>	41.07	14.36
<i>RAB27A</i>	36.74	18.91
<i>CD163</i>	51.86	3.80
<i>TRAFD1</i>	28.10	27.66
	ratio 24/8hpi	

ISG name	screen #1	screen #2
<i>FUT4</i>	37.49	18.41
<i>EIF2AK2</i>	29.71	26.73
<i>GJA4</i>	39.98	16.58
<i>TAGAP</i>	21.92	34.79
<i>CHMP5</i>	37.41	19.32
<i>JUNB</i>	29.68	27.09
<i>PSMB9</i>	34.14	22.78
<i>PIM3</i>	48.82	8.19
<i>FAM70A</i>	47.61	9.46
<i>LOC400759</i>	33.39	23.75
<i>DTX3L</i>	28.96	28.21
<i>FKBP5</i>	44.14	13.13
<i>PABPC4</i>	39.52	18.14
<i>PBEF1</i>	42.31	15.41
<i>LY6E</i>	52.52	5.37
<i>VAMP5</i>	33.99	24.14
<i>TGFB1</i>	26.19	32.01
<i>MS4A4A</i>	47.19	11.08
<i>GBP2</i>	44.75	13.55
<i>CPT1A</i>	29.59	28.90
<i>CD9</i>	38.93	19.57
<i>RGL-1</i>	35.29	23.22
<i>SCARB2</i>	46.53	12.30
<i>PDGFRL</i>	27.44	31.50
<i>UBE2L6</i>	42.75	16.28
<i>OPTN</i>	26.76	32.38
<i>EPAS1</i>	20.72	38.53
<i>APOL2</i>	36.77	22.48
<i>PADI2</i>	29.48	30.02
<i>AKT3</i>	26.80	32.81
<i>ZC3HAV1</i>	42.29	17.41
<i>LRG1</i>	29.87	29.93
<i>PCTK3</i>	43.73	16.08
<i>NAPA</i>	46.58	13.38
<i>ANGPTL1</i>	36.58	23.55
<i>LIPA</i>	48.77	11.58
<i>CASP7</i>	32.70	27.74
<i>DHX58</i>	19.37	41.21
<i>STARD5</i>	37.38	23.36
<i>MAB21L2</i>	33.74	27.07
	ratio 24/8hpi	
ISG name	screen #1	screen #2

<i>BATF2</i>	35.04	25.91
<i>SSBP3</i>	41.47	19.65
<i>TMEM51</i>	31.30	29.85
<i>TRIM38</i>	44.64	16.70
<i>DNAPTP6</i>	39.19	22.18
<i>APOL6</i>	31.98	29.50
<i>ADAMDEC1</i>	42.80	18.73
<i>GEM</i>	49.29	12.41
<i>IFIT3</i>	41.11	20.64
<i>TNFAIP3</i>	26.10	35.74
<i>DCP1A</i>	42.81	19.08
<i>SAMHD1</i>	40.89	21.11
<i>IFI44L</i>	37.45	24.66
<i>CCR1</i>	40.27	22.12
<i>KIAA1618</i>	55.28	7.35
<i>SOCS1</i>	24.36	38.60
<i>CD69</i>	54.34	8.95
<i>CXCL9</i>	37.13	26.30
<i>SIGLEC1</i>	35.71	27.76
<i>INDO</i>	52.48	11.10
<i>ISG15</i>	40.00	23.80
<i>AIM2</i>	32.32	31.49
<i>UNC84B</i>	27.60	36.34
<i>ETV6</i>	37.53	26.79
<i>OAS3</i>	56.73	7.70
<i>PSMB8</i>	37.27	27.24
<i>C5orf27</i>	32.34	32.31
<i>C22orf28</i>	43.01	21.70
<i>IFI27</i>	36.21	28.57
<i>NUP50</i>	56.80	8.26
<i>CNP</i>	41.76	23.32
<i>FLJ39739</i>	29.87	36.42
<i>HLA-F</i>	30.31	36.10
<i>TNFAIP6</i>	40.06	26.46
<i>IL17RB</i>	31.17	35.56
<i>DYNLT1</i>	33.46	33.63
<i>HEG1</i>	45.24	22.04
<i>NOD2</i>	41.82	25.74
<i>FAM125B</i>	30.10	37.48
<i>PDK1</i>	32.09	35.50
	ratio 24/8hpi	
ISG name	screen #1	screen #2
<i>TCF7L2</i>	44.41	23.18

<i>HK2</i>	63.56	4.38
<i>RARRES3</i>	46.52	21.44
<i>NT5C3</i>	38.90	29.09
<i>UNC93B1</i>	35.45	32.57
<i>PNRC1</i>	40.74	27.46
<i>PUS1</i>	27.40	40.86
<i>TIMP1</i>	28.47	39.83
<i>IL1R</i>	40.31	28.05
<i>LINCR</i>	36.64	32.52
<i>SQLE</i>	31.41	38.46
<i>RASGEF1B</i>	33.02	37.10
<i>IFNGR1</i>	54.81	15.38
<i>VEGFC</i>	26.99	43.35
<i>GAK</i>	35.35	35.11
<i>DDX60</i>	30.54	40.24
<i>MAFF</i>	34.13	37.08
<i>IFI30</i>	33.47	37.90
<i>ARHGAP17</i>	66.68	4.75
<i>HLA-G</i>	21.49	50.09
<i>TLR3</i>	32.41	39.50
<i>EXT1</i>	33.18	38.75
<i>PHF15</i>	52.77	19.18
<i>BTN3A3</i>	43.96	28.12
<i>GALNT2</i>	51.78	20.77
<i>FCGR1A</i>	23.06	49.48
<i>IL15</i>	52.56	20.08
<i>FNDC3B</i>	63.96	8.73
<i>CLEC4A</i>	32.01	40.71
<i>TMEM49</i>	52.72	20.42
<i>MT1F</i>	58.32	15.37
<i>CLEC2B</i>	52.24	21.45
<i>SLFN5</i>	66.27	8.14
<i>NFIL3</i>	51.46	23.21
<i>CEACAM1</i>	66.56	8.13
<i>CCDC92</i>	28.34	46.60
<i>CCNA1</i>	42.97	31.97
<i>GBP3</i>	42.16	32.97
<i>IL6ST</i>	53.06	22.74
<i>ATP10D</i>	52.92	25.22
	ratio 24/8hpi	
ISG name	screen #1	screen #2
<i>ADFP</i>	55.87	22.29
<i>GLRX</i>	59.48	18.77

<i>OASL</i>	70.69	8.75
<i>GTPBP2</i>	26.87	53.09
<i>IRF2</i>	33.90	46.57
<i>RGS1</i>	32.38	48.54
<i>STAT2</i>	29.52	51.41
<i>CYP1B1</i>	44.55	37.94
<i>DDX3X</i>	77.11	5.51
<i>C10orf10</i>	35.04	47.71
<i>HSPA6</i>	67.87	15.29
<i>PNPT1</i>	36.24	47.56
<i>RNF24</i>	50.77	33.72
<i>OAS1</i>	79.82	5.46
<i>RPL22</i>	60.99	24.75
<i>SLC1A1</i>	55.71	30.32
<i>AXUD1</i>	39.72	46.58
<i>CCDC109B</i>	35.29	51.15
<i>NMI</i>	62.52	23.98
<i>C15orf48</i>	54.76	31.90
<i>PPM1K</i>	71.34	15.63
<i>ETV7</i>	31.06	56.33
<i>PML</i>	50.04	38.16
<i>CD38</i>	28.32	60.14
<i>ADAR</i>	53.20	35.41
<i>TREX1</i>	26.55	62.58
<i>IGFBP2</i>	34.22	55.74
<i>G6PC</i>	34.86	55.12
<i>ZBP1</i>	62.50	27.65
<i>ALDH1A1</i>	73.55	17.03
<i>UBA7</i>	67.73	23.63
<i>SPSB1</i>	50.71	40.74
<i>GBP1</i>	58.13	34.01
<i>PARP10</i>	34.92	57.88
mean empty	46.52	56.85
<i>GCA</i>	49.52	44.70
<i>IMPA2</i>	57.93	37.69
	ratio 24/8hpi	
ISG name	screen #1	screen #2

<i>PMAIP1</i>	42.41	53.77
<i>SNN</i>	30.60	66.84
<i>IFITM1</i>	71.58	27.40
<i>C4orf33</i>	33.39	66.87
<i>OAS2</i>	65.89	34.48
<i>IFI6</i>	96.65	4.51
<i>B4GALT5</i>	47.20	56.48
<i>CASP1</i>	76.36	27.45
<i>IFIT1</i>	84.54	20.13
<i>WARS</i>	52.58	52.98
<i>MAX</i>	36.84	68.92
<i>FFAR2</i>	100.75	5.64
<i>RNASE4</i>	97.65	8.78
<i>SERPING1</i>	45.79	63.09
<i>C1S</i>	46.27	63.20
<i>IL1RN</i>	78.21	32.68
<i>AMPH</i>	47.67	63.52
<i>IFIT2</i>	73.15	38.12
<i>APOL3</i>	47.10	65.07
<i>BUB1</i>	106.51	5.71
<i>HLA-E</i>	95.45	18.85
<i>KIAA0082</i>	63.09	52.34
<i>APOBEC3A</i>	106.66	10.33
<i>CEBPD</i>	50.78	66.56
<i>BLVRA</i>	61.07	59.23
<i>ANKRD22</i>	81.24	42.84
<i>TFEC</i>	43.74	86.88
<i>PRKD2</i>	114.63	16.03
<i>KIAA0082</i>	97.63	39.68
<i>COMMD3</i>	61.67	117.87
<i>TAP1</i>	180.46	43.24
<i>MSR1</i>	179.96	50.40
<i>TNFSF13B</i>	222.42	36.49
<i>MAFB</i>	210.34	48.85
<i>TXNIP</i>	307.64	38.41
<i>CCND3</i>	415.84	35.37

Table S3. Primer Sequences, Related to Figures 2A, 3E–3G, 4B–4E, 5B, 5J, S2A–S2D, S3D, S3E, S5D, and S5E

Experiment	Specificity		Sequence 5'-3'
SYBR green assay	human SERPINE1	fwd	GGACTTTTCAGAGGTGGAGAGAGC
		rev	TGATTTGTGGAAGAGGCGGC
	human TGF- β	fwd	CCCAGCATCTGCAAAGCTC
		rev	GTCAATGTACAGCTGCCGCA
	human BST2	fwd	ATGGAAGACGGGGATAAGCG
		rev	ATGGGTGACATTGCGACACTCC
	human ISG15	fwd	GGCTGGGAGCTGACGGTGAAG
		rev	GCTCCGCCCGCCAGGCTCTGT
	human IFITM3	fwd	TGTCGTCTGGTCCCTGTTCAAC
		rev	ACCTTCACGGAGTAGGCGAATG
	human RPS11	fwd	GCCGAGACTATCTGCACTAC
		rev	ATGTCCAGCCTCAGAACTTC
	murine TGF- β	fwd	TGCTAATGGTGGACCGCAAC
		rev	CACTGCTTCCCGAATGTCTGAC
	murine RSAD2	fwd	TCTTGCTATCTCCTGCGACAGC
		rev	TGAAAGCCACCTTGTAAATCCCTG
	murine RPS11	fwd	AATGCCCTTCACTGGTAACG
		rev	TTCGGATGTAATGGAGATAGTCCC
	murine Serpine1	fwd	CGACAGCCAACAAGAGCCAATC
		rev	AACCCTTTCCAGAGACCAGAACC
	murine IFN- β	fwd	AAGAGTTACACTGCCTTTGCCATC
		rev	CACTGTCTGCTGGTGGAGTTCATC
	murine TNF- α	fwd	GCCCCAGTCTGTATCCTTCTAAC
		rev	CCCAGCATCTTGTGTTTCTGAGTAG
murine MIP-2	fwd	CCCAGACAGAAGTCATAGCCACTC	
	rev	GGTCAGTTAGCCTTGCCTTTGTTC	
murine IL-6	fwd	CTTCCATCCAGTTGCCTTCTTG	
	rev	TGTTGGGAGTGGTATCCTCTGTG	
Taqman Real-Time PCR	A/WSN/33 HA segment	fwd	GACACAACGGGAAACTATGTAA
		rev	GCTGGAAGCAGTGAGTC
		probe	FAM-TTCCCAATTGTAGTGGGGCTATTCC-BHQ1
	A/PuertoRico/8/1934 HA segment	fwd	TTTATAGAGGGAGGATGG
		rev	GAGTGGATTCTTTGTCTG
		probe	FAM-TTCCCAATTGTAGTGGGGCTATTCC-BHQ1
	A/X-31 matrix segment	fwd	AAGACCAATCCTGTCACCTCTGA
		rev	CAAAGCGTCTACGCTGCAGTCC
		probe	FAM-TTTGTGTTACGCTCACCGT-TAMRA

Method	construct		Sequence 5'-3'
TOPO	PAI-1	fwd	ATGCAGATGTCTCCAGCC

cloning	full length	rev	TCAGGGTTCCATCACTTGG
Quikchange mutagenesis	PAI-1 T356R (SERPINE1*)	fwd	GAGGTGAACGAGAGTGGCAGGGTGGCCTCCT CATCCACA
		rev	TGTGGATGAGGAGGCCACCCTGCCACTCTCGT TCACCTC