Table S1. Patient clinical characteristics and clinical response, related to Figure 1

ID	Sex	Age at treatment start	Treated (Y/N)	CR, PR, SD, PD	# of prior or concurrent therapies	Description of prior or concurrent therapies
5	F	47	Y	PR	3	CVD, interferon, dabrafenib
6	M	48	Y	PD	1	IL-2 (Adj)
7	M	64	Y	PD	1	Temozolomide
9	M	58	Y	PD	2	Dasatinib, temodar
16	M	34	Y	PD	0	NA
18	F	66	Y	PD	2	Doxycycline, temodar
22	F	50	Y	PR	0	NA
23	M	40	Y	PD	0	NA
24	M	50	Y	PD	0	NA
25	F	46	Y	PD	4	TLR, gp100 vaccine, high dose IL-2, temozolomide
31	F	71	Y	PR	4	Dacarbazine, trametinib, trientine, carboplatin
37	M	82	Y	PR	1	Dacarbazine
46	F	27	Y	PD	3	Ecorafenib, binimetinib, dabrafenib
47	M	72	Y	PD	2	Temodar, doxycyline
50	M	68	Y	PD	0	NA
54	M	28	Y	PD	2	Interferon (adj), temodar

Abbreviation: CR, complete response; PR, partial response; SD, stable disease; PD, progression of disease; CVD, cyclophosphamide, vincristine, and dacarbazine; TLR, Toll like receptor; NA, not applicable.

Table S2. IFN-γ pathway related genes, related to Figure 1

ADAR, CNTFR, CREB1, CREB3, CRLF2, CSF2RA, CSF3R, CXCL10, EBI3, F3, IFI16, IFI27, IFI30, IFI35, IFI44, IFI44L, IFI6, IFIH1, IFIT1, IFIT1B, IFIT2, IFIT3, IFITM1, IFITM2, IFNA1, IFNA14, IFNA2, IFNA21, IFNA4, IFNA5, IFNA6, IFNA8, IFNAR1, IFNAR2, IFNB1, IFNE, IFNG, IFNGR1, IFNGR2, IFNK, IFNW1, IFRD1, IFRD2, IL10RA, IL10RB, IL11RA, IL12A, IL12B, IL13RA1, IL15, IL20RA, IL20RB, IL21R, IL22RA2, IL28A, IL28RA, IL29, IL2RB, IL2RG, IL31RA, IL3RA, IL4R, IL5RA, IL6, IL6R, IL7R, IL9R, IRF1, IRF2, IRF2BP1, IRF2BP2, IRF3, IRF4, IRF5, IRF6, IRF7, IRF8, IRF9, IRGM, ISG15, JAK1, JAK2, LEPR, MPL, MX1, OAS1, PIAS1, PIAS4, PIK3CA, PRKCD, PSME1, PYHIN1, SOCS1, SOCS3, SP110, STAT1, STAT2, STAT3, STAT4, TBX21, TYK2

Table S3. Responders and non-responders to ipilimumab with exception of all SD patients in an independent cohort[a], related to Figure 1.

	R	NR
CNA	9	53
WT	9	17
Mutant %	50%	75.7%

[a] Data were downloaded from published dataset by Van Allen et al. [Science; 350(6257): 207, 2015] Abbreviation: SD, stable disease; R, responder; NR, non-responder; CNA, copy number alteration; WT, wild-type.

Table S4. The log2 fold change of selected probes after IFN-γ stimulation in each cell line, related to Figure 2.

Probe	Gene	C1	C2	C3	C4	C5	C6
AFFX-HUMISGF3A/M97935_MA_at	STAT1	3.03	3.36	3.55	2.00	2.28	3.07
AFFX-HUMISGF3A/M97935_5_at	STAT1	3.22	3.29	3.58	1.99	2.56	3.13
AFFX-HUMISGF3A/M97935_MB_at	STAT1	2.92	3.02	3.29	1.81	2.13	2.99
204747_at	IFIT3	2.99	3.15	3.14	1.98	2.47	2.23
219209_at	IFIH1	4.21	3.27	3.38	1.51	1.85	2.42
AFFX-HUMISGF3A/M97935_3_at	STAT1	2.69	2.46	2.83	1.58	1.76	2.43
200887_s_at	STAT1	2.64	2.38	2.65	1.57	1.87	2.48
214022_s_at	IFITM1	2.78	3.94	3.17	1.85	2.58	1.05
201601_x_at	IFITM1	2.60	3.57	2.80	1.98	1.84	1.01
204439_at	IFI44L	2.78	3.21	4.10	2.97	-0.27	1.50
209969_s_at	STAT1	3.60	3.81	4.33	2.33	2.90	3.57
205992_s_at	IL15	3.64	3.95	3.57	1.86	3.03	2.34
202531_at	IRF1	4.61	4.78	4.40	2.16	3.65	3.21
204533_at	CXCL10	4.90	6.71	6.45	2.67	4.4	5.46
201422_at	IFI30	2.21	2.60	1.54	0.44	0.43	0.96
1555464_at	IFIH1	1.95	2.17	2.46	0.22	1.15	0.56
208392_x_at	SP110	1.47	1.28	1.47	0.9	0.59	1.20
205170_at	STAT2	1.17	1.35	1.52	0.83	0.89	0.53
216020_at	IFIH1	1.91	1.47	1.91	0.58	0.60	0.81
232375_at	STAT1	1.51	1.70	1.95	0.88	1.22	1.63
205483_s_at	ISG15	1.62	1.99	1.67	0.64	1.47	1.13
202411_at	IFI27	1.65	2.29	1.87	0.21	0.99	1.51
223980_s_at	SP110	2.07	1.78	1.75	0.9	0.91	1.43
203153_at	IFIT1	2.24	1.87	1.38	0.88	1.37	1.48
217502_at	IFIT2	1.29	1.95	0.99	1.26	1.24	1.08
209417_s_at	IFI35	1.56	2.29	1.48	1.30	1.32	1.73
202086_at	MX1	1.69	2.30	2.40	1.47	-0.42	1.06
225636_at	STAT2	2.01	1.92	2.09	1.23	1.78	1.17
202869_at	OAS1	1.72	2.25	2.25	0.81	1.70	0.91
205552_s_at	OAS1	2.08	2.59	2.17	1.22	2.18	0.69
217371_s_at	IL15	2.39	2.70	2.77	1.34	2.05	1.43
214453_s_at	IFI44	2.47	2.29	1.95	0.94	1.51	1.63
208012_x_at	SP110	2.57	2.23	1.75	1.07	1.36	1.43
209762_x_at	SP110	2.45	2.52	1.95	1.28	1.42	1.60