

**Table S1.** Original data from the RNA microarray

## (A) Upregulated genes (50 genes)

Gene symbol	Relative fold change	CIA/Control (volume)	Control signal	CIA signal	Gene symbol	Relative fold change	CIA/Control (volume)	Control signal	CIA signal
<i>Irf7</i>	<b>24.7</b>	6.0	8.8	4.1	<i>Olfr1386</i>	<b>2.2</b>	1.7	1.2	2.3
<i>Isg15</i>	<b>6.6</b>	5.0	6.6	3.8	<i>Olfr1502</i>	<b>2.2</b>	2.5	2.0	3.1
<i>Ifit1</i>	<b>6.1</b>	4.2	5.7	3.1	<i>Cyp2d26</i>	<b>2.2</b>	2.1	2.7	1.6
<i>Oas3</i>	<b>4.9</b>	4.5	5.8	3.5	<i>Mir423</i>	<b>2.2</b>	2.6	2.1	3.2
<i>Mir107</i>	<b>4.2</b>	3.0	2.2	4.2	<i>Ppp1r15a</i>	<b>2.2</b>	3.9	4.5	3.4
<i>H2-Q8</i>	<b>3.4</b>	3.2	4.2	2.4	<i>Spta1</i>	<b>2.2</b>	8.7	9.2	8.1
<i>Fn1</i>	<b>3.2</b>	5.0	4.3	5.9	<i>Rps15</i>	<b>2.2</b>	2.7	2.2	3.3
<i>C1ra</i>	<b>3.0</b>	2.7	3.6	2.0	<i>Vwf</i>	<b>2.2</b>	7.0	6.4	7.5
<i>Ifih1</i>	<b>2.9</b>	2.9	3.8	2.2	<i>Pla2g2a</i>	<b>2.2</b>	3.5	3.0	4.1
<i>Fpr2</i>	<b>2.9</b>	2.5	3.4	1.9	<i>Cmpk2</i>	<b>2.1</b>	4.4	4.9	3.8
<i>Clca3a1</i>	<b>2.7</b>	4.0	3.4	4.8	<i>F5</i>	<b>2.1</b>	7.5	8.1	7.0
<i>Olfr774</i>	<b>2.7</b>	1.3	0.8	2.2	<i>Fos</i>	<b>2.1</b>	5.0	4.6	5.6
<i>Hist1h2bj</i>	<b>2.7</b>	3.6	3.0	4.4	<i>Olfr917</i>	<b>2.1</b>	2.5	3.1	2.0
<i>Ifi204</i>	<b>2.6</b>	1.7	2.5	1.2	<i>Ptpn11</i>	<b>2.0</b>	6.3	5.8	6.9
<i>Fads2</i>	<b>2.6</b>	3.9	3.3	4.6	<i>C3</i>	<b>2.0</b>	4.9	4.4	5.4
<i>Plxna4</i>	<b>2.5</b>	4.5	5.2	3.9	<i>Hist2h4</i>	<b>2.0</b>	2.8	2.4	3.4
<i>Sp100</i>	<b>2.5</b>	6.8	7.5	6.2	<i>Flna</i>	<b>2.0</b>	7.2	6.7	7.7
<i>Vcl</i>	<b>2.3</b>	7.6	7.1	8.3	<i>Cks1b</i>	<b>2.0</b>	2.9	2.4	3.5
<i>Tuba3b</i>	<b>2.3</b>	3.5	4.1	2.9	<i>Olfr1057</i>	<b>2.0</b>	2.0	2.5	1.5
<i>Dusp3</i>	<b>2.3</b>	4.9	4.3	5.5	<i>Olfr726</i>	<b>2.0</b>	1.7	1.2	2.3
<i>Hist1h2aa</i>	<b>2.3</b>	5.0	4.4	5.6	<i>Olfr1298</i>	<b>2.0</b>	2.2	1.7	2.7
<i>H2-T24</i>	<b>2.3</b>	6.2	6.8	5.6	<i>Igtp</i>	<b>2.0</b>	5.8	6.3	5.3
<i>Rps6ka2</i>	<b>2.3</b>	3.2	2.7	3.9	<i>Mir7-1</i>	<b>2.0</b>	2.4	2.0	3.0
<i>Itga2</i>	<b>2.3</b>	5.6	5.0	6.2	<i>Thbs1</i>	<b>2.0</b>	8.8	8.3	9.3
<i>Sort1</i>	<b>2.2</b>	6.0	5.5	6.6	<i>Olfr38</i>	<b>2.0</b>	2.5	2.0	3.1

## (B) Downregulated genes (48 genes)

Gene symbol	Relative fold change	CIA/Control (volume)	Control signal	CIA signal	Gene symbol	Relative fold change	CIA/Control (volume)	Control signal	CIA signal
<i>Sec24a</i>	<b>-3.9</b>	5.8	4.9	6.8	<i>Rps2</i>	<b>-2.2</b>	3.6	4.2	3.1
<i>Cd27</i>	<b>-3.3</b>	3.2	2.5	4.2	<i>Il7r</i>	<b>-2.2</b>	5.4	4.9	6.0
<i>Cd8b1</i>	<b>-3.3</b>	5.4	4.6	6.3	<i>Cnd2</i>	<b>-2.2</b>	3.8	3.3	4.4
<i>Ccl5</i>	<b>-3.2</b>	6.1	5.3	7.0	<i>Rgs14</i>	<b>-2.2</b>	3.4	2.9	4.0
<i>Cd3g</i>	<b>-3.2</b>	5.2	4.4	6.1	<i>Pck2</i>	<b>-2.2</b>	5.7	6.3	5.2
<i>Cd3e</i>	<b>-2.9</b>	7.3	6.6	8.1	<i>Cd59a</i>	<b>-2.2</b>	7.6	8.2	7.1
<i>Lat</i>	<b>-2.7</b>	3.9	3.3	4.7	<i>Tcf7</i>	<b>-2.2</b>	6.5	6.0	7.1
<i>Hist1h2ba</i>	<b>-2.7</b>	0.8	1.8	0.4	<i>Rps11</i>	<b>-2.2</b>	4.3	3.8	4.9
<i>Ncr1</i>	<b>-2.7</b>	3.0	2.4	3.8	<i>Ugcg</i>	<b>-2.1</b>	3.8	3.3	4.4
<i>Eif4a1</i>	<b>-2.6</b>	10.0	9.3	10.7	<i>Rpl6</i>	<b>-2.1</b>	6.4	5.9	7.0
<i>Rps8</i>	<b>-2.6</b>	4.0	4.8	3.4	<i>Olf373</i>	<b>-2.1</b>	2.4	3.0	2.0
<i>Cd4</i>	<b>-2.6</b>	4.0	3.4	4.8	<i>Olf705</i>	<b>-2.1</b>	2.9	3.4	2.4
<i>Il2rb</i>	<b>-2.5</b>	3.9	3.3	4.7	<i>Cd209a</i>	<b>-2.1</b>	3.2	2.7	3.8
<i>Ddx5</i>	<b>-2.5</b>	7.4	6.7	8.1	<i>Lck</i>	<b>-2.1</b>	4.0	3.5	4.6
<i>Rpl30</i>	<b>-2.5</b>	2.2	2.9	1.6	<i>Klrd1</i>	<b>-2.1</b>	2.9	2.4	3.4
<i>Mirlet7f-2</i>	<b>-2.5</b>	1.4	2.2	0.9	<i>Olf1501</i>	<b>-2.1</b>	2.5	3.1	2.1
<i>Ppp2r2d</i>	<b>-2.5</b>	3.4	4.1	2.8	<i>Rpl37a</i>	<b>-2.1</b>	2.1	1.7	2.7
<i>Atp1b3</i>	<b>-2.4</b>	5.4	4.8	6.1	<i>Mir103-2</i>	<b>-2.0</b>	1.5	2.1	1.1
<i>Ube3c</i>	<b>-2.4</b>	3.3	2.7	4.0	<i>Ppil2</i>	<b>-2.0</b>	5.3	4.8	5.8
<i>Olf875</i>	<b>-2.4</b>	2.2	2.9	1.7	<i>Ddx46</i>	<b>-2.0</b>	3.8	3.3	4.3
<i>Rmrp</i>	<b>-2.3</b>	8.1	7.5	8.7	<i>Stat4</i>	<b>-2.0</b>	4.5	4.0	5.1
<i>Ctsw</i>	<b>-2.3</b>	3.5	2.9	4.1	<i>Itgb7</i>	<b>-2.0</b>	4.3	3.9	4.9
<i>Slc40a1</i>	<b>-2.3</b>	3.7	3.1	4.3	<i>Bcl2a1c</i>	<b>-2.0</b>	2.6	2.1	3.1
<i>Sec61b</i>	<b>-2.2</b>	2.1	2.7	1.6	<i>Olf1299</i>	<b>-2.0</b>	2.5	3.1	2.0

**Table S2.** Original data from the proteome array

## (A) Classification of upregulated proteins

No.	Classification	Identified proteins	Number of proteins
1	Cytokine-cytokine receptor interaction	IL-2, IL-27, IL-17, MIP-1beta, IL-23, IL-1beta, IL-1ra, MIP-2, MCP-5, TARC, IL-3, TNF-alpha, IP-10, MIG, BLC, I-TAC, RANTES, IL-4, IL-6, IL-5, IL-10, IL-7, JE, GM-CSF, SDF-1, MIP-1alpha, G-CSF, IL-1alpha, M-CSF, IL-13, I-309, IFN-gamma, KC, IL-12 p70	34
2	IL-17 signaling pathway	IL-27, IL-17, IL-1beta, MIP-2, MCP-5, TARC, TNF-alpha, IP-10, IL-4, IL-6, IL-5, JE, GM-CSF, G-CSF, IL-13, Eotaxin, IFN-gamma, KC	18
3	Rheumatoid arthritis	IL-17, IL-23, IL-1beta, MCP-5, TNF-alpha, RANTES, IL-6, IL-16, JE, GM-CSF, SDF-1, MIP-1alpha, IL-1alpha, M-CSF, IFN-gamma, sICAM-1	15
4	Jak-STAT signaling pathway	IL-2, IL-27, IL-23, IL-3, IL-4, IL-6, IL-5, IL-10, IL-7, GM-CSF, G-CSF, IL-13, IFN-gamma, IL-12 p70	14
5	Hematopoietic cell lineage	IL-1beta, IL-1ra, IL-3, TNF-alpha, IL-4, IL-6, IL-5, IL-7, GM-CSF, G-CSF, IL-1alpha, M-CSF	12
6	Th17 cell differentiation	IL-2, IL-27, IL-17, IL-23, IL-1beta, IL-1ra, IL-4, IL-6, IFN-gamma	9
7	NOD-like receptor signaling pathway	IL-1beta, MIP-2, MCP-5, TNF-alpha, RANTES, IL-6, JE, KC	8
8	Graft-versus-host disease	IL-2, IL-1beta, TNF-alpha, IL-6, IL-10, IL-1alpha, IL-13, IFN-gamma	8
9	NF-kappa B signaling pathway	MIP-1beta, IL-1beta, IL-1ra, TNF-alpha, BLC, SDF-1, sICAM-1	7
10	T cell receptor signaling pathway	IL-2, TNF-alpha, IL-4, IL-5, IL-10, GM-CSF, IFN-gamma	7
11	PI3K-Akt signaling pathway	IL-2, IL-3, IL-4, IL-6, IL-7, G-CSF, M-CSF	7
12	Osteoclast differentiation	IL-1beta, IL-1ra, TREM-1, TNF-alpha, IL-1alpha, M-CSF, IFN-gamma	7
13	Th1 and Th2 cell differentiation	IL-2, IL-4, IL-5, IL-13, IFN-gamma, IL-12 p70	6
14	MAPK signaling pathway	IL-1beta, IL-1ra, TNF-alpha, IL-1alpha	4
15	Systemic lupus erythematosus	TNF-alpha, IL-10, C5/C5a, IFN-gamma	4
16	Natural killer cell mediated cytotoxicity	TNF-alpha, GM-CSF, IFN-gamma, sICAM-1	4
17	HIF-1 signaling pathway	TIMP-1, IL-6, IFN-gamma	3
18	RIG-I-like receptor signaling pathway	TNF-alpha, IP-10, IL-12 p70	3
19	Apoptosis	IL-3, TNF-alpha	2
20	Antigen processing and presentation	TNF-alpha, IFN-gamma	2

## (B) Densitometry analysis of upregulated proteins (n = 40)

No.	Protein name	Control spot density	CIA spot density	Relative fold change	No.	Protein name	Control spot density	CIA spot density	Relative fold change
1	IL-2	550	15971	27.4	23	IL-5	6747	15515	2.2
2	IL-27	450	9235	19.3	24	IL-10	9305	19774	2.0
3	IL-17	880	12208	13.1	25	IL-7	10405	21081	1.9
4	MIP-1beta	1913	20771	10.2	26	JE	9935	19448	1.9
5	IL-23	1161	8873	7.2	27	GM-CSF	11643	21716	1.8
6	IL-1beta	1811	12301	6.4	28	SDF-1	14223	25706	1.7
7	IL-1ra	2146	10467	4.6	29	MIP-1alpha	15175	26549	1.7
8	MIP-2	2560	11417	4.2	30	G-CSF	10145	17690	1.6
9	MCP-5	4142	18185	4.1	31	IL-1alpha	11437	19036	1.6
10	TIMP-1	4025	17009	4.0	32	M-CSF	11457	18818	1.6
11	TARC	3683	15287	3.9	33	IL-13	15410	24395	1.5
12	IL-3	4460	18221	3.9	34	I-309	14950	23210	1.5
13	TREM-1	4330	17234	3.8	35	Eotaxin	15719	23281	1.4
14	TNF-alpha	5317	18919	3.4	36	C5/C5a	19829	29113	1.4
15	IP-10	6042	18646	2.9	37	IFN-gamma	15739	22867	1.4
16	MIG	7637	23542	2.9	38	KC	18774	27158	1.4
17	BLC	6288	18202	2.7	39	sICAM-1	23704	33994	1.4
18	I-TAC	7651	20452	2.5	40	IL-12 p70	21073	25226	1.1
19	RANTES	2697	7186	2.5	41	Reference Spot 23661		25510	1.0
20	IL-4	6771	17471	2.4	42	Reference Spot 23744		25265	1.0
21	IL-6	7731	19787	2.4	43	Reference Spot 23718		24659	1.0
22	IL-16	9176	21125	2.2	44	NC	1	1	0.9