Supplemental Data Table 1A

Gene Regulation in PBMCs from normal donors following 18hr IFN-α treatment *in vitro*

Gene	Function	Fold Change Post vs Pre-treatment
Ubiquitin specific protease 18 *(USP18)*	Ubiquitin-dependent protein catabolism	15.1
CD38 antigen (p45) *(CD38)*	Apoptosis	8.8
Interferon-induced protein 44 *(IFI44)*	Antiviral response	7.5
DEAD (Asp-Glu-Ala-Asp) box polypeptide 58 (DDX58)	Helicase, Deoxyribonuclease, ubiquitin-protein ligase	7.1
Hect domain and RLD5 *(HERC5)*	Regulation of cyclin dependent protein kinase activity	7.0
2'-5'-oligoadenylate synthetase 2 *(OAS2)*	Immune response, nucleic acid metabolism	6.7
2'-5'-oligoadenylate synthetase-like *(OASL)*	Immune response, nucleic acid metabolism	6.2
Lymphocyte antigen 6 complex, locus E *(LY6E)*	T cell differentiation and activation, antiviral response	5.8
Serine palmitoyltransferase, long chain base subunit 2 *(SPTLC2)*	Unknown	4.6
Likely ortholog of mouse D11lgp2 *(LGP2)*	DNA restriction	4.3
Interferon stimulated gene 20kDa (ISG20)	Immune response, proliferation	3.9*
Retinoic acid- and interferon-inducible protein *(IFIT2)*	Immune response	3.8
Three prime repair exonuclease 1 *(TREX1)*	DNA repair and replication	3.6
Metallothionein 1H *(MT1H)*	Metal ion binding	3.4
Phospholipid scramblase 1 *(PLSCR1)*	Phospholipid scramblase	3.2*
Metallothionein 1 pseudogene 2 *(M1P2)*	Metal ion binding	3.2
Metallothionein 2A *(MT2A)*	Metal ion binding	3.0
SP110 nuclear body protein *(SP110)*	Regulation of transcription, transcription factor	3.0*
Tripartite motif-containing 21 *(TRIM21)*	Protein ubiquitination	2.9
Zinc finger, CCHC domain containing 2 *(ZCCHC2)*	Nucleic acid binding	2.7
DR1-associated protein 1 (negative cofactor 2 alpha) *(DRAP1)*	Negative regulation of transcription	2.6
Biliverdin reductase A *(BLVRA)*	Electron transport	2.4
Interferon regulatory factor 2 *(IRF2)*	Transcription factor, immune response, proliferation	2.3
Leukocyte immunoglobulin-like receptor 7 *(LIR7)*	Immune response, antigen binding	2.3
Chondroitin 4-O-sulfotransferase 2 *(CHST12)*	dermantan sulfate biosynthesis	2.1
Interferon, gamma-inducible protein 16 *(IFI16)*	Transcriptional repressor, monocyte differentiation	2.1
Nedd4 binding protein 1 *(N4BP1)*	Unknown	2.1

Genes had a probe set differentially expressed by more than 2-fold ($p < 0.001$).

*Significant gene upregulation was observed in multiple probe sets. The displayed changes in expression are the average (geometric mean).

Supplemental Data Table 1B

Gene Regulation in T cells from normal donors following 18hr IFN-α treatment *in vitro*

Gene	Function	Fold Change Post vs Pre-treatment
Chromosome 1 open reading frame 29 *(C1orf29)*	Unknown	38.3
Vipirin *(cig5)*	Catalytic activity	30.7
Interferon-induced protein with tetratricopeptide repeats 1 *(IFIT1)*	Immune response	28.7
2'-5'-oligoadenylate synthetase 3 *(OAS3)*	Immune response, nucleic acid metabolism	12.3
DNA polymerase-transactivated protein 6 *(DNAPTP6)*	Unknown	10.4
28kD interferon responsive protein *(IFRG28)*	Unknown	9.6
Interferon-induced protein 44 *(IFI44)* **	Antiviral response	9.6
Lectin, galactoside-binding, soluble, 9 (galectin 9) *(LGALS9)*	Positive regulation of NFκB cascade	8.0
Hect domain and RLD5 *(HERC5)* **	Regulation of cyclin dependent protein kinase activity	7.5
A kinase (PRKA) anchor protein 2 *(AKAP2)*	Enzyme binding	7.0
Tumor necrosis factor (ligand) superfamily, member 10 *(TNFSF10)*	Apoptosis, immune response	5.3
GPI deacylase *(PGAP1)*	Unknown	5.1
Metallothionein 1X *(MT1X)*	Metal ion binding	4.5
Likely ortholog of mouse D11lgp2 *(LGP2)* **	DNA restriction	4.1
Lymphocyte-activation gene 3 *(LAG3)*	Antigen binding	4.1
Tripartite motif-containing 5 *(TRIM5)*	Transcription factor, zinc ion binding	4.0
Nuclear antigen Sp100 *(SP100)*	Regulation of transcription	3.7
Metallothionein 1F *(MT1F)*	Metal ion binding	3.3*
Zinc finger, CCHC domain containing 2 *(ZCCHC2)***	Nucleic acid binding	3.2
KIAA0082 protein	Unknown	2.9
Protein kinase D2 *(PRKD2)*	Serine/threonine kinase	2.7
Spermidine/spermine N1-acetyltransferase *(SAT)*	Acyltransferase activity	2.6
Endothelin converting enzyme 1	Unknown	2.4
PDH fnger protein 11 *(PHF11)*	Regulation of transcription	2.3
Chromosome 20 open reading frame 18 *(C20orf18)*	Protein ubiquitination	2.2
MHC class I polypeptide-related sequence B *(MICB)*	Cell recognition	2.2
Myeloid differentiation primary response gene (88) *(MYD88)*	Inflammatory response, regulation of NFκB cascade	2.1
Small nuclear ribonucleoprotein polypeptide N *(SNRPN)*	RNA processsing, splicing	-3.0

Genes had a probe set differentially expressed by more than 2-fold ($p < 0.001$) ; decreased fold changes are indicated with a negative sign.

*Significant gene upregulation was observed in multiple probe sets. The displayed changes in expression are the average (geometric mean).

**Gene was also upregulated in normal donor PBMCs at 18 hours

Supplemental Data Table 1C

Gene Regulation in NK cells from normal donors following 18hr IFN-α treatment *in vitro*

Gene	Function	Fold Change Post vs Pre-treatment
Interferon, alpha-inducible protein 27 *(IFI27)*	Immune response	12.2
2',5'-oligoadenylate synthetase 1 *(OAS1)*	Immune response, nucleic acid metabolism	10.2
Hect domain and RLD 5 *(HERC5)* **	Ubiquitin-protein ligase	8.2
Myxovirus (influenza virus) resistance 2 *(MX2)*	Immune response	7.4
2'-5'-oligoadenylate synthetase 3 *(OAS3)*	Immune response, nucleic acid metabolism	7.3
Likely ortholog of mouse D11lgp2 *(LGP2)* **	Helicase	4.9
Phospholipid scramblase 1 *(PLSCR1)* **	Phospholibid scramblase	4.6*
Interferon stimulated gene 20kDa *(ISG20)* **	Immune response, proliferation	4.1
2'-5'-oligoadenylate synthetase 2 *(OAS2)* **	Immune response, nucleic acid metabolism	4.1*
Interferon regulatory factor 7 *(IRF7)*	Transcription factor, antiviral response	3.8
Cytokine receptor CRL2 precursor *(CLRF2)*	Interferon-class cytokine receptor	3.7
Interferon-induced protein with tetratricopeptide repeats 5 *(IFIT5)*	Immune response	3.2
Interferon induced with helicase C domain 1 *(IFIH1)*	Helicase, Deoxyribonuclease	3.2
KIAA1117 protein	Unknown	3.0
Metallothionein 1X *(MT1X)*	Metal ion binding	2.7*
Myotubularin related protein 9 *(MTMR9)*	Myotubularin-related protein	2.7
Nuclear antigen Sp100 *(SP100)*	Regulation of transcription	2.7*
Metallothionein 1H-like *(MT1H)* **	Metal ion binding	2.5
Promyelocytic leukemia *(PML)*	Regulation of transcription	2.5
Tudor repeat associator with PCTAIRE 2 *(TDRD7)*	Nucleic acid binding	2.5
Metallothionein 1F *(MT1F)*	Metal ion binding	2.4*
Hypothetical protein from clone 643 *(TFCP2)*	Transcription factor	2.4
Spermidine/spermine N1-acetyltransferase *(SAT)*	Acyltransferase activity	2.4
Hypothetical protein FLJ10260	Unknown	2.2
Interferon induced transmembrane protein 3 *(IFITM3)*	Immune response	2.2
KIAA0650 protein	ATP binding	2.2
Metallothionein 2A *(MT2A)* **	Metal ion binding	2.2
Myristoylated alanine-rich protein kinase C substrate *(MARCKS)*	Cell motility	2.1
Core 1 beta-3-galactosyltransferase *(C1GALT)*	Galactosyltransferase	2.0
T-complex-associated-testis-expressed 1-like 1 *(TCTEL1)*	Microtubule motor activity, cell cycle	2.0
Early growth response 3 *(EGR3)*	Regulation of transcription, muscle development	-2.4
Plakophilin 4 *(PKP4)*	Chromatin assembly	-2.8

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**Gene was also upregulated in normal donor PBMCs at 18 hours

Supplemental Data Table 1D

Gene Regulation in Monocytes from normal donors following 18hr IFN-α treatment *in vitro*

Gene	Function	Fold Change Post vs Pre-treatment
Interferon stimulated gene 20kDa *(ISG20)* **	Immune response, proliferation	29.5
Ubiquitin specific protease 18 *(USP18)* **	Ubiquitin-dependent protein catabolism	23.4
Phorbolin 1 *(PHRBN)*	mRNA editing	19.8
Chromosome 1 open reading frame 29 *(C1orf29)*	Electron transport	16.8
CD69 antigen *(CD69)*	T-cell activation	16.0
2'-5'-oligoadenylate synthetase-like *(OASL)* **	Immune response, nucleic acid metabolism	11.6*
Guanylate binding protein 1, interferon-inducible, 67kDa *(GBP1)*	Immune response	12.1
Interferon-induced protein 44 *(IFI44)* **	Antiviral response	12.0
Interferon induced transmembrane protein 1 (9-27) *(IFITM1)*	Immune response, negative regulation of proliferation	11.6
Myxovirus (influenza virus) resistance 1, *(MX1)*	Apoptosis, immune response	8.6
Apolipoprotein L, 3 *(APOL3)*	Inflammatory response, lipid binding/transport	6.0
Hect domain and RLD5 *(HERC5)* **	Regulation of cyclin dependent protein kinase activity	5.9
2'-5'-oligoadenylate synthetase 3 *(OAS3)*	Immune response, nucleic acid metabolism	5.4
Torsin family 1, member B (torsin B) *(TOR1B)*	Protein folding	4.7
Interferon regulatory factor 1 *(IRF1)*	Transcription factor, immune response	4.6
Interleukin 15 receptor, alpha *(IL15RA)*	Proliferation	4.5
A kinase (PRKA) anchor protein 2 *(AKAP2)*	Enzyme binding	4.3
Chromosome 9 open reading frame 91 *(C9orf91)*	Electron transport	3.6
Nedd4 binding protein 1 *(N4BP1)* **	Unknown	3.6
Lymphocyte cytosolic protein 2 *(LCP2)*	Immune response	3.5*
Likely ortholog of rat zinc-finger antiviral protein	Unknown	3.4
Proteasome (prosome, macropain) subunit, beta type, 9 *(PSMB9)*	Immune response, peptidolysis	3.4
Cullin 1 *(CUL1)*	Apoptosis, cell cycle arrest (G1/S transition)	3.3
Transcription factor ets	Unknown	3.3
Myotubularin related protein 9 *(MTMR9)*	Myotubularin-related protein	3.2
Signal transducer and activator of transcription 1 *(STAT1)*	Transcription factor, JAK-STAT pathway	3.0
Three prime repair exonuclease 1 *(TREX1)* **	DNA repair and replication	2.6
Tumor necrosis factor receptor superfamily, member 5 *(TNFRSF5)*	Apoptosis, inflammatory response, B-cell proliferation	2.5
H.sapiens gene from PAC 747L4	Unknown	2.3
PHD finger protein 15 *(PHF15)*	Regulation of transcription	2.3
Leukocyte immunoglobulin-like receptor 7 *(LIR7)* **	Immune response	2.2
Metallothionein 1F *(MT1F)*	Metal ion binding	2.2
RAB9A, member RAS oncogene family *(RAB9A)*	Protein transport, GTPase mediated signal transduction	2.2
RNA binding motif protein 8A *(RBM8A)*	mRNA splicing	-2.0
KIAA0232	Unknown	-2.1
Rho GDP dissociation inhibitor beta *(ARHGDIB)*	Immune response, negative regulation of cell adhesion	-2.1
Ornithine aminotransferase *(OAT)*	Amino acid metabolism, visual perception	-2.1
Chromosome 12 open reading frame 24 *(C12orf24)*	Unknown	-2.1
FLJ35653	Unknown	-2.2
EST sequence	Unknown	-2.2
PHD finger protein 20 *(PHF20)*	Regulation of transcription	-2.3
Furry homolog *(FRY)*	Unknown	-2.3
Family with sequence similarity 13, member A1 *(FAM13A1)*	Unknown	-2.3*
Heterogeneous nuclear ribonucleoprotein A1 *(HNRPA1)*	mRNA processing	-2.3
Ribosomal protein L22 (RPL22)	Structural constituent of ribosome	-2.4*
Dihydropyrimidine dehydrogenase *(DPYD)*	Electron transport	-2.5
F-box and WD repeat domain containing 2 *(FBXW2)*	Ubiquitin-mediated protein degradation	-2.5
Eukaryotic translation elongation factor 1 gamma *(EEF1G)*	Protein biosynthesis, translation elongation factor	-2.6
Ribosomal protein L3 *(RPL3)*	Structural constituent of ribosome	-2.6*
Translocase of outer mitochondrial membrand 20 homolog *(TOMM20)*	Protein-mitochondiral targeting	-2.8
dUTP pyrophosphatase *(DUT)*	DNA replication	-3.1

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