	Cluster I		Cluster II	
	Term	Pvalue	Term	Pvalue
GO Biological Process	immune response	3.82E-37	positive regulation of tyrosine phosphorylation of Stat1 protein	1.02E-07
	defense response	2.04E-36	regulation of tyrosine phosphorylation of Stat1 protein	1.21299E-06
	positive regulation of immune system process	1.53E-33	leukocyte differentiation	2.17046E-06
	response to wounding	3.90E-31	tolerance induction	1.47892E-05
	phagocytosis	5.50E-28	wound healing involved in inflammatory response	1.56021E-05
Mouse Phenotype	abnormal leukocyte physiology	7.99E-43	abnormal epidermal layer morphology	2.32E-08
	abnormal adaptive immunity	1.08E-42	abnormal immune tolerance	2.03E-07
	abnormal immune cell physiology	1.89E-42	autoimmune response	2.62E-07
	abnormal cell-mediated immunity	2.25E-42	abnormal self tolerance	3.84E-07
	abnormal immune serum protein physiology	1.49E-41	abnormal involution of the mammary gland	1.10459E-06
MSigDB Immunologic Signatures	Genes down-regulated in comparison of monocytes treated with anti-TREM1 [GeneID=54210] versus monocytes treated with 1 ng/ml LPS (TLR4 agonist).	7.11E-62	Genes down-regulated in comparison of naive T cells versus central memory T cells.	3.68E-10

	Genes down-regulated in comparison of healthy B cells versus healthy myeloid cells.	2.34E-58	Genes down-regulated in comparison of naive versus effector CD8 T cells at contraction (day 15 after LCMV-Armstrong infection).	1.72E-09
	Genes down-regulated in comparison of systemic lupus erythematosus CD4 [GeneID=920] T cells versus systemic lupus erythematosus myeloid cells.	7.79E-57	Genes down-regulated in comparison of naive CD8 T cells versus memory CD8 T cells.	8.18E-09
	Genes down-regulated in comparison of monocytes treated with anti-TREM1 [GeneID=54210] versus monocytes treated with anti-TREM1 [GeneID=54210] and 5000 ng/ml LPS (TLR4 agonist).	1.30E-52	Genes down-regulated in comparison of naive CD8 T cells versus naive CD4 [GeneID=920] CD8 T cells.	1.98E-08
	Genes down-regulated in comparison of monocytes treated with anti-TREM1 [GeneID=54210] versus monocytes treated with 5000 ng/ml LPS (TLR4 agonist).	1.04E-51	Genes up-regulated in comparison of adult regulatory T cell (Treg) versus adult conventional T cells.	1.22E-07
MSigDB Oncogenic Signatures	Genes up-regulated in NOMO-1 and SKM-1 cells (AML) after knockdown of STK33 [Gene ID=65975] by RNAi.	2.68E-22	Genes up-regulated in a panel of epithelial cell lines by TGFB1 [Gene ID=7040].	0.000121547
	Immune or inflammatory genes induced by NF-kappaB in primary keratinocytes and fibroblasts.	1.32E-20	Genes down-regulated in late serum response of CRL 2091 cells (foreskin fibroblasts).	0.000206342

	Genes up-regulated in NOMO-1 cells (AML) after knockdown of STK33 [Gene ID=65975] by RNAi.	1.08E-18	Genes down-regulated in SH-SY5Y cells (neuroblastoma) in response to PDGF [Gene ID=] stimulation after pre-treatment with the ERK inhibitors U0126 and PD98059 [PubChem=3006531, 4713].	0.000240192
	Genes up-regulated in SKM-1 cells (AML) after knockdown of STK33 [Gene ID=65975] by RNAi.	5.45E-18	Genes up-regulated in retina cells from CRX and NRL [Gene ID=1406, 4901] double knockout mice.	0.000570694
	Genes up-regulated in CD34+ hematopoietic progenitor cells after knockdown of RPS14 [Gene ID=6208] by RNAi.	3.52E-13		
MSigDB Pathway	Genes involved in Platelet activation, signaling and aggregation	4.29E-16		
	Atypical NF-kappaB pathway	2.35E-13		
	Thromboxane A2 receptor signaling	3.99E-13		
	Genes involved in Hemostasis	8.03E-13		
	Focal adhesion	1.28E-11		
MSigDB Perturbation	Genes with promoters occupied by PML-RARA fusion [GeneID=5371,5914] protein in acute promyelocytic leukemia(APL) cells NB4 and two APL primary blasts, based on Chip-seq data.	6.23E-70	Genes with promoters bound by FOXP3 [GeneID=50943] and which are up-regulated only in developing (located in the thymus) regulatory CD4+ [GeneID=920] T lymphocytes.	3.82E-10

	Genes up-regulated in peripheral blood mononucleocytes by HGF [GeneID=3082] compared to those regulated by CSF2RB (GM-CSF) and IL4 [GeneID=1437;3565].	1.12E-39	Down-regulated genes from the set G (Fig. 5a): specific to cells expressing both MLL-AF4 [GeneID=4297;4299] and AF4-MLL fusion proteins.	1.83653E-06
	Genes up-regulated in circulating endothelial cells (CEC) from cancer patients compared to those from healthy donors.	5.69E-37	Cluster 3: genes up-regulated in B2264-19/3 cells (primary B lymphocytes) within 60-180 min after activation of LMP1 (an oncogene encoded by Epstein-Barr virus, EBV).	3.4698E-06
	Genes up-regulated in peripheral blood monocytes by HGF [GeneID=3082].	3.36E-36	Genes down-regulated in CD34+ [GeneID=947] hematopoetic cells by expression of NUP98-HOXA9 fusion [GeneID=4928;3205] off a retroviral vector at 3 days after transduction.	1.23113E-05
	Genes up-regulated in BxPC3 cells (pancreatic cancer) after treatment with TNF [GeneID=7124] or IKI-1, an inhibitor of IkappaB kinase (IKK).	3.53E-36	Genes co-regulated in uterus during a time course response to progesterone [PubChem=5994]: SOM cluster 6.	1.80659E-05
Disease Ontology	disease by infectious agent	1.75E-46	Pneumocystis jirovecii pneumonia	1.95E-07
	viral infectious disease	2.80E-28	intraepithelial neoplasm	4.86E-07
	DNA virus infectious disease	1.05E-27	urologic neoplasm	2.78E-06
	dermatitis	2.74E-25	retinal degeneration	5.58E-05
	atherosclerosis	2.98E-25	lung adenocarcinoma	0.000111209

	Cluster III		Cluster IV	
	Term	Pvalue	Term	Pvalue
GO Biological Process			regulation of lymphocyte activation	5.14E-18
			leukocyte activation	4.70E-16
			positive regulation of immune system process	1.05E-15
			regulation of immune system process	1.41E-15
			regulation of leukocyte activation	1.60E-15
Mouse Phenotype	abnormal regulatory T cell physiology	1.40E-12	abnormal lymphopoiesis	7.87E-29
	abnormal lymphocyte physiology	2.93E-10	abnormal mononuclear cell differentiation	1.25E-28
	abnormal T cell physiology	9.62E-10	abnormal myeloblast morphology/development	1.37E-27
	abnormal cytokine secretion	2.23E-09	abnormal leukopoiesis	2.46E-26
	abnormal interleukin secretion	3.87E-08	abnormal mononuclear cell morphology	1.74E-25
MSigDB Immunologic Signatures	Genes up-regulated in comparison of adult regulatory T cell (Treg) versus adult conventional T cells.	2.38E-18	Genes down-regulated in comparison of intrathymic T progenitor cells (ITTP) versus CD4 [GeneID=920] thymocytes.	1.54E-25

	Genes down-regulated in comparison of naive CD8 T cells versus naive CD4 [GeneID=920] CD8 T cells.	6.81E-13	Genes up-regulated in comparison of naive CD8 T cells versus PD-1 high CD8 T cells.	1.16E-22
	Genes down-regulated in comparison of effector memory T cells versus central memory T cells from peripheral blood mononuclear cells (PBMC).	1.39E-12	Genes up-regulated in comparison of naive CD8 T cells versus PD-1 low CD8 T cells.	1.22E-22
	Genes up-regulated in comparison of untreated CD4 [GeneID=920] T cells versus those treated with IL6 [GeneID=3569] and IL23A [GeneID=51561].	2.11E-10	Genes down-regulated in comparison of effector memory T cells versus central memory T cells from peripheral blood mononuclear cells (PBMC).	2.26E-20
	Genes down-regulated in comparison of naive CD4 [GeneID=920] T cells versus unstimulated memory CD4 [GeneID=920] CD8 T cells.	3.22E-10	Genes up-regulated in comparison of naive T cells versus effector memory T cells.	2.36E-19
MSigDB Oncogenic Signatures	Genes up-regulated in MCF-7 cells (breast cancer) positive for ESR1 [Gene ID=2099] and engineered to express ligand-activatable EGFR [Gene ID=1956].	9.14295E-06		

MSigDB Pathway			TCR signaling in naïve CD4+ T cells	4.52E-08
			TCR signaling in naïve CD8+ T cells	1.45E-07
			T cell receptor signaling pathway	8.32E-07
			Signaling events mediated by focal adhesion kinase	9.05E-07
			Role of Calcineurin-dependent NFAT signaling in lymphocytes	2.5184E-05
MSigDB Perturbation	Genes whose promoters are bound by FOXP3 [GeneID=50943] based an a ChIP-chip analysis.	7.07E-11	Genes whose promoters are bound by FOXP3 [GeneID=50943] based an a ChIP-chip analysis.	8.82E-29
	Genes with promoters bound by FOXP3 [GeneID=50943] and which are up-regulated only in developing (located in the thymus) regulatory CD4+ [GeneID=920] T lymphocytes.	7.48E-10	Genes down-regulated in CD133+ [GeneID=8842] cells (hematopoietic stem cells, HSC) compared to the CD133- cells.	1.45E-20

	Gene predicting resistance of the NCI-60 cell lines to gamma radiation.	3.28E-08	Genes enriched at every T lymphocyte differentiation stage compared to the early passage fetal thymic stromal cultures (TSC).	2.38E-20
	Cluster T4 of genes with similar expression profiles in thymic T lymphocytes after FOXP3 [GeneID=50943] loss of function (LOF).	7.82E-07	Genes with promoters bound by FOXP3 [GeneID=50943] and which are down-regulated only in mature (peripheral blood) regulatory CD4+ [GeneID=920] T lymphocytes.	1.90E-19
	Cluster P4 of genes with similar expression profiles in peripheral T lymphocytes after FOXP3 [GeneID=50943] loss of function (LOF).	1.18963E-06	Genes down-regulated at early stages of progenitor T lymphocyte maturation compared to the late stages.	9.01E-16
Disease Ontology	Motif BNCRSTTTCANTTYY matches IRF1: interferon regulatory factor 1	3.90E-08	dsDNA virus infectious disease	1.23E-11
			DNA virus infectious disease	6.88E-11
			chronic leukemia	7.64E-10
			lupus erythematosus	2.06E-09
			systemic lupus erythematosus	4.51E-09