

## Supplementary Materials and Methods

### Antibodies

Mouse (or rat when indicated) mAbs conjugated to allophycocyanin (APC), fluorescein isothiocyanate (FITC), peridinin chlorophyll protein-cyanin 5.5 (PerCP-Cy5.5), phycoerythrin (PE), specific for human CD9 (clone M-L13), CD19 (clone HIB19), CD27 (clone M-T271), CD38 (clone HIT2), CD138 (clone RF8B2), HLA-DR (clone G46-6), IgG (clone G18-145), IgM (clone G20-127), and Ki67 (clone B56) were purchased from BD Biosciences (Le Pont De Claix, France); CD20 (clone B9E9), CD45 (clone J33), CD54 (clone 84H10), CD62L (clone DREG56), and CD138 (clone B-A38) from Beckman Coulter (Fullerton, CA); CCR10 (rat, clone 314305) from R&D Systems; polyclonal goat antibodies to human IgA or IgG from Southern Biotech (Birmingham, AL).

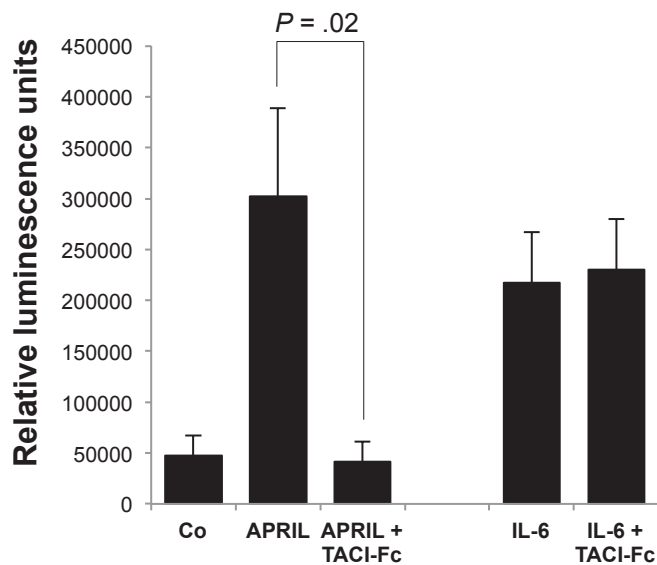
### Immunohistochemistry

Cytospin smears of cell-sorted CD20<sup>-</sup>CD138<sup>+</sup> D30 PCs were fixed in cold acetone for 10 min and immunohistochemistry performed with an automaton (BenchMark Ultra, Ventana Medical System, Tucson, AZ) using anti-kappa and anti-lambda and revelation with DAB (Dako, Les Ulis, France).

### Real-time RT-PCR analysis

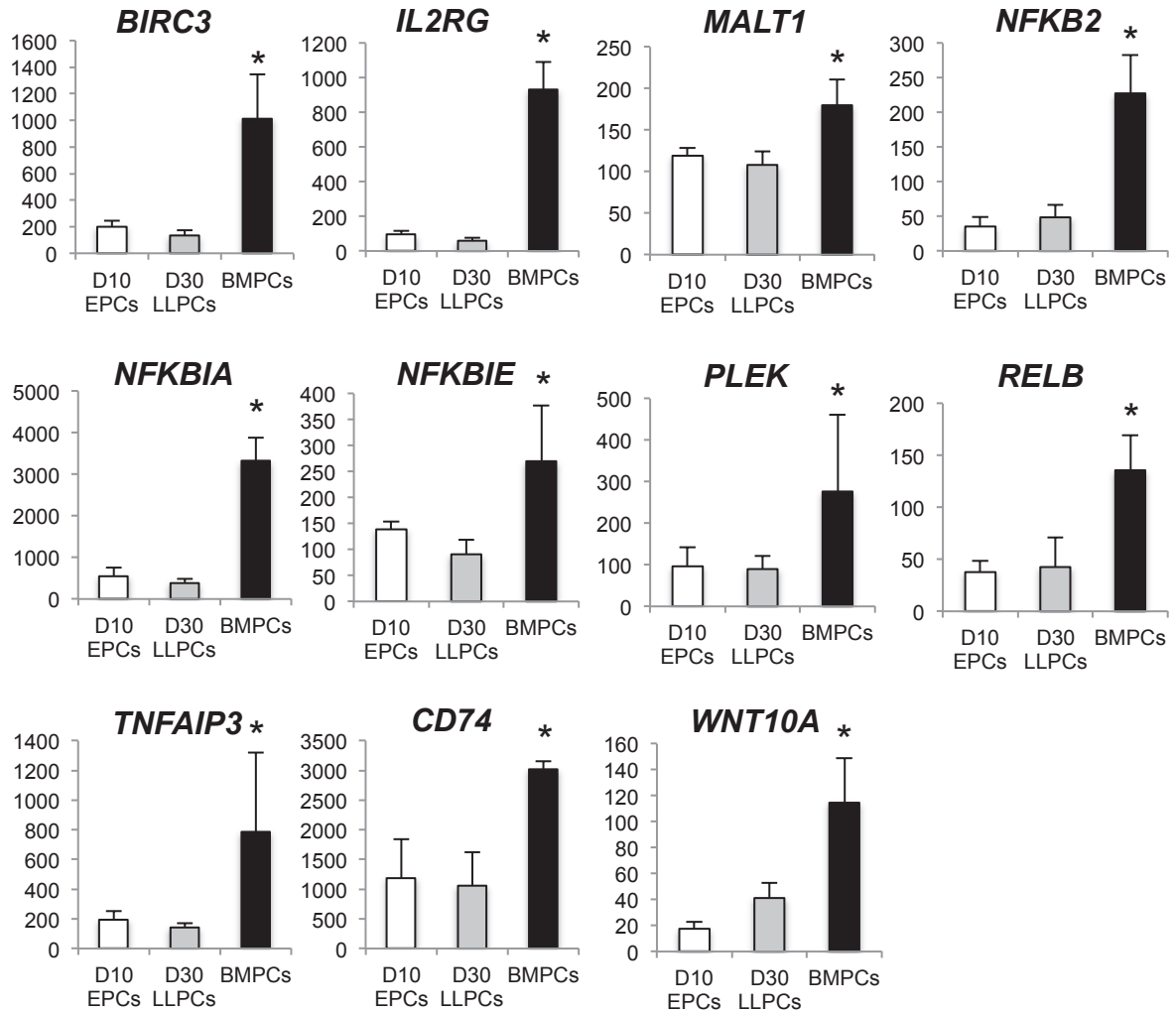
Total RNA was extracted using the RNeasy Kit (Qiagen, Valencia, CA) and reverse transcribed with the Reverse Transcription Kit (Qiagen). The assays-on-demand primers and probes and the TaqMan Universal Master Mix were used according to the manufacturer's instructions (Applied Biosystems, Courtaboeuf, France). Real-time RT-PCR was performed using the ABI Prism 7000 Sequence Detection System and normalized to *β2-microglobulin* for each sample, and compared with the values

obtained for a known positive control using the following formula  $100/2^{\Delta\Delta Ct}$  where  $\Delta\Delta Ct$   
=  $\Delta Ct$  unknown  $- \Delta Ct$  positive control as described.<sup>10</sup>



**Supplementary Figure 1. Specific inhibition of APRIL by TACI-Fc**

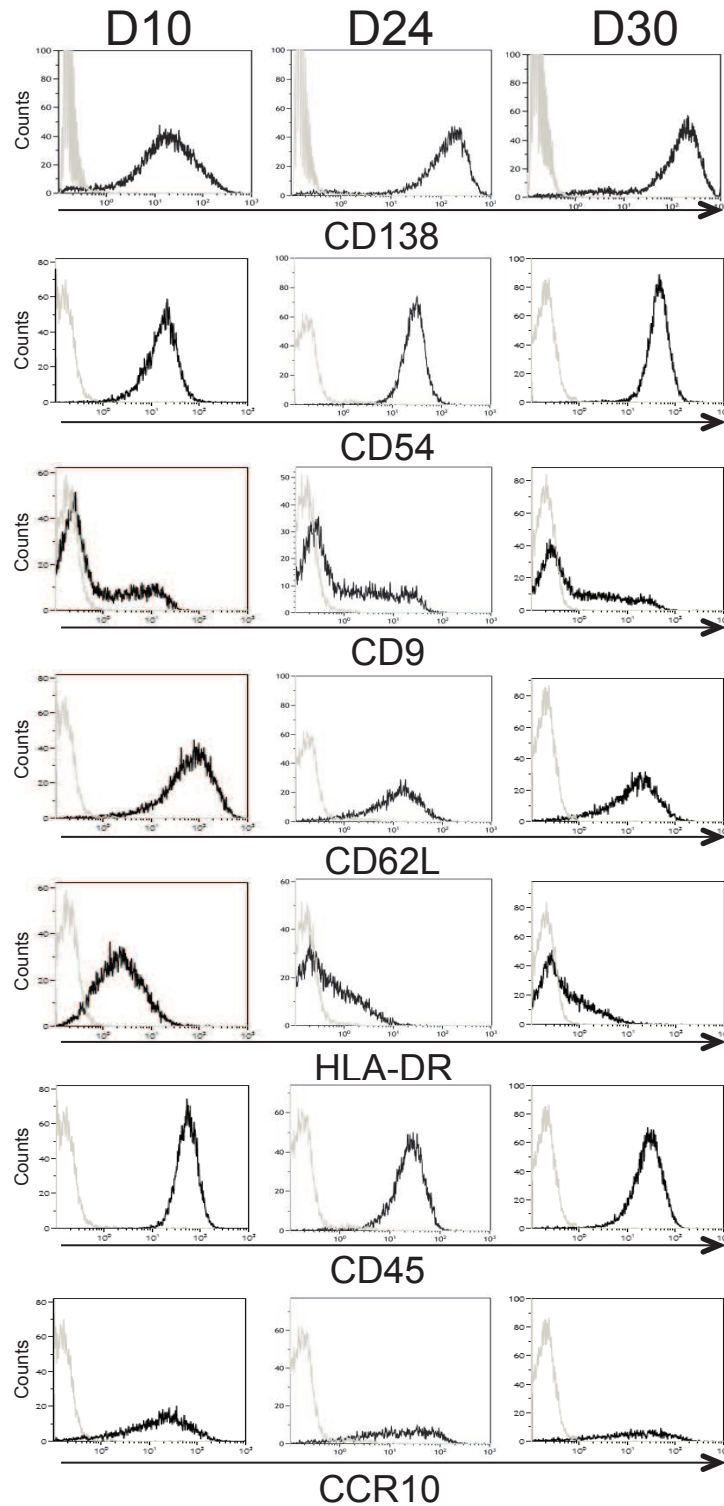
The IL-6-dependent human XG-1 myeloma cell line was starved for 2 hours and cultured 6 days without growth factors (Co), with APRIL (200ng/ml), with APRIL + TACI-Fc (10µg/ml), with IL-6 (40 pg/ml), or with IL-6 + TACI-Fc. The starting cell concentration was 10<sup>5</sup> cells/ml. Results are the mean luminescent signal determined in triplicate culture wells and are those from 1 representative experiment out of three.



**Supplementary Figure 2. Expression of NF-κB target genes.**

Gene expression was determined using Affymetrix U133 plus 2.0 microarrays. Results are mean values +/- SD of MAS5 signals assayed on 5 samples per cell group. The following probe sets were used: 210538\_s\_at for *BIRC3*, 204116\_at for *IL2RG*, 208309\_s\_at for *MALT1*, 207535\_s\_at for *NFKB2*, 201502\_s\_at for *NFKBIA*, 203927\_at for *NFKBIE*, 203470\_s\_at for *PLEK*, 205205\_at for *RELB*, 202643\_s\_at for *TNFAIP3*, 209619\_at for *CD74*, and 223709\_s\_at for *WNT10A*.

\*Significantly different from D10 early PCs and D30 LLPCs

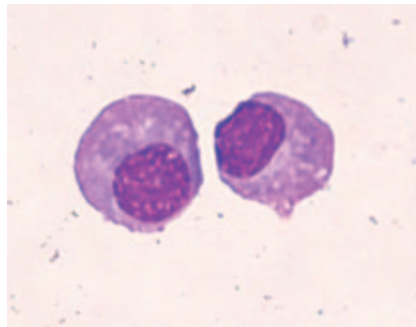


**Supplementary Figure 3. Phenotypic characterization of D10, D24 and D30 PCs.**

PC phenotype was assessed by flow cytometry. The histograms show FACS labelling with anti-CD138, anti-CD54, anti-CD9, anti-CD62L, anti-HLA-DR, anti-CD45 and anti-CCR10 (bold) or with the corresponding isotype-matched control mAbs (light). Data are from one experiment representative of 4-6.

A

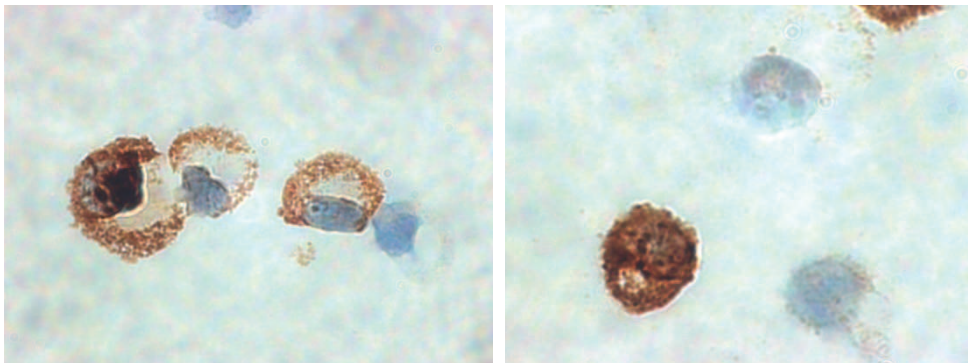
May-Grünwald-Giemsa



B

Kappa

Lambda



**Supplementary Figure 4. Cytology and immunoglobulin light chain staining of D30 PCs.**

CD20-CD138<sup>+</sup> PCs were FACS sorted at Day 30. (A) PCs were stained with May-Grünwald-Giemsa solution (magnification x600). (B) Kappa or lambda Ig light chains were labelled with anti-kappa or anti-lambda mAbs and immunochemistry staining (brown color) (magnification x600).

**Supplementary Table 1. SAM supervised analysis comparing D10 early PCs to D30PCs+BMPCs.**

Genes overexpressed in D30PCs and BMPCs (141 unique genes)				Genes overexpressed in D10 early PCs (427 unique genes)			
Gene ID	Gene Name	Score(d)	Fold Change	Gene ID	Gene Name	Score(d)	Fold Change
1552790_at	TLOC1	1.53	2.48	206082_at	HCP5	-1.53	0.25
1552863_at	CACNG6	1.53	3.97	225239_at	LOC10065301	-1.53	0.48
1556499_s_at	COL1A1	1.53	67.73	204639_at	ADA	-1.53	0.32
1563674_at	FCRL2	1.53	2.86	219649_at	ALG6	-1.53	0.46
200788_s_at	PEA15	1.53	2.08	222608_s_at	ANLN	-1.53	0.08
201012_at	ANXA1	1.53	37.72	208103_s_at	ANP32E	-1.53	0.49
201041_s_at	DUSP1	1.53	20.26	200613_at	AP2M1	-1.53	0.49
201059_at	CTTN	1.53	8.69	210385_s_at	ARTS-1	-1.53	0.33
201141_at	GNPMB	1.53	6.24	203427_at	ASF1A	-1.53	0.44
201200_at	CREG1	1.53	2.65	219918_s_at	ASPM	-1.53	0.03
201286_at	SDC1	1.53	4.37	222740_at	ATAD2	-1.53	0.13
201425_at	ALDH2	1.53	3.67	1554020_at	BICD1	-1.53	0.34
201427_s_at	SEPP1	1.53	267.57	242234_at	BIRC4BP	-1.53	0.23
201506_at	TGFBI	1.53	80	202095_s_at	BIRC5	-1.53	0.05
201666_at	TIMP1	1.53	11.99	219555_s_at	BM039	-1.53	0.22
202388_at	RGS2	1.53	13.67	204531_s_at	BRCA1	-1.53	0.22
202768_at	FOSB	1.53	42.3	212949_at	BRRN1	-1.53	0.25
202973_x_at	FAM13A1	1.53	5.05	209642_at	BUB1	-1.53	0.13
203065_s_at	CAV1	1.53	2.82	203755_at	BUB1B	-1.53	0.11
203335_at	PHYH	1.53	2.19	218542_at	C10orf3	-1.53	0.04
204017_at	KDELR3	1.53	12.97	221652_s_at	C12orf11	-1.53	0.45
205671_s_at	HLA-DOB	1.53	2.62	227165_at	C13orf3	-1.53	0.18
206121_at	AMPD1	1.53	50.59	225929_s_at	C17orf27	-1.53	0.23
206584_at	LY96	1.53	6.45	215380_s_at	C7orf24	-1.53	0.39
209189_at	FOS	1.53	50.24	243271_at	C7orf6	-1.53	0.18
209687_at	CXCL12	1.53	47.47	218904_s_at	C9orf40	-1.53	0.35
211995_x_at	ACTG1	1.53	2.08	208838_at	CAND1	-1.53	0.46
214146_s_at	PPBP	1.53	359.3	202763_at	CASP3	-1.53	0.42
214151_s_at	CCPG1	1.53	2	213226_at	CCNA2	-1.53	0.16
214428_x_at	C4A /// C4B	1.53	3.68	214710_s_at	CCNB1	-1.53	0.16
217963_s_at	NGFRAP1	1.53	15.22	202705_at	CCNB2	-1.53	0.12
219049_at	ChGn	1.53	3.29	220565_at	CCR10	-1.53	0.35
219888_at	SPAG4	1.53	5.12	203213_at	CDC2	-1.53	0.17
219910_at	HYPE	1.53	2.55	202870_s_at	CDC20	-1.53	0.24
221731_x_at	CSPG2	1.53	20.05	201853_s_at	CDC25B	-1.53	0.4
222244_s_at	TUG1	1.53	2.21	223381_at	CDCA1	-1.53	0.08
222392_x_at	PERP	1.53	5.04	226661_at	CDCA2	-1.53	0.12
224404_s_at	FCRL5	1.53	2.29	223307_at	CDCA3	-1.53	0.25
225681_at	CTHRC1	1.53	93.95	224753_at	CDCA5	-1.53	0.1
227983_at	MGC7036	1.53	2.17	204962_s_at	CENPA	-1.53	0.06
231093_at	FCRH3	1.53	6.79	223513_at	CENPJ	-1.53	0.43
231124_x_at	LY9	1.53	2.16	212539_at	CHD1L	-1.53	0.49
232297_at	KLHL5	1.53	2.12	205393_s_at	CHEK1	-1.53	0.33
235094_at	TPM4	1.53	4.8	201897_s_at	CKS1B	-1.53	0.4
235372_at	FCRLM1	1.53	4.51	48580_at	CXXC1	-1.53	0.5
235668_at	PRDM1	1.53	2.01	40465_at	DDX23	-1.53	0.5
240118_at	TXNDC11	1.53	2.32	218943_s_at	DDX58	-1.53	0.26
200949_x_at	RPS20	1.5	2.37	226980_at	DEPDC1B	-1.53	0.14
1556507_at	LOC10050721	1.47	4.26	202420_s_at	DHX9	-1.53	0.49
201540_at	FHL1	1.47	16.97	229097_at	DIAPH3	-1.53	0.28
201921_at	GNG10 /// LOC10050721	1.47	2.19	218726_at	DKFZp762E11.1	-1.53	0.1
204622_x_at	NR4A2	1.47	19.96	212568_s_at	DLAT	-1.53	0.47
209458_x_at	HBA1 /// HBA2	1.47	156.29	203764_at	DLG7	-1.53	0.15
211696_x_at	HBB	1.47	45.25	203105_s_at	DNM1L	-1.53	0.41
213129_s_at	GCSH	1.47	2.05	201697_s_at	DNMT1	-1.53	0.47
214080_x_at	PRKCSH	1.47	2.37	218585_s_at	DTL	-1.53	0.14
219371_s_at	KLF2	1.47	16.62	228033_at	E2F7	-1.53	0.13
223423_at	GPR160	1.47	3.35	219990_at	E2F8	-1.53	0.07

224367_at	BEX2	1.47	4.7	219787_s_at	ECT2	-1.53	0.2
225012_at	HDLBP	1.47	2.15	204211_x_at	EIF2AK2	-1.53	0.41
226051_at	SELM	1.47	6.56	225156_at	ELOF1	-1.53	0.49
227935_s_at	PCGF5	1.47	2.44	207691_x_at	ENTPD1	-1.53	0.24
201260_s_at	SYPL1	1.44	4.1	227609_at	EPST11	-1.53	0.23
226517_at	BCAT1	1.44	3	204817_at	ESPL1	-1.53	0.18
216248_s_at	NR4A2	1.41	17.44	207541_s_at	EXOSC10	-1.53	0.5
201694_s_at	EGR1	1.41	12.66	203358_s_at	EZH2	-1.53	0.3
201938_at	CDK2AP1	1.41	2.84	212132_at	FAM61A	-1.53	0.36
205174_s_at	QBCT	1.41	84.18	225834_at	FAM72A	-1.53	0.08
208645_s_at	RPS14	1.41	2.08	231769_at	FBXO6	-1.53	0.31
208763_s_at	TSC22D3	1.41	4.68	203620_s_at	FCHSD2	-1.53	0.41
209827_s_at	IL16	1.41	4.57	218614_at	FLJ10652	-1.53	0.45
217854_s_at	POLR2E	1.41	2.12	213007_at	FLJ10719	-1.53	0.23
218258_at	POLR1D	1.41	2.08	228273_at	FLJ11029	-1.53	0.26
219373_at	DPM3	1.41	3.95	53720_at	FLJ11286	-1.53	0.41
221841_s_at	KLF4	1.41	92.98	212479_s_at	FLJ13910	-1.53	0.45
223376_s_at	BRI3	1.41	3.25	218248_at	FLJ22794	-1.53	0.29
227621_at	WTAP	1.41	2.38	222872_x_at	FLJ22833	-1.53	0.34
46142_at	FLJ12681	1.41	3.53	227168_at	FLJ25967	-1.53	0.24
213275_x_at	CTSB	1.38	4.75	225607_at	FLJ31795	-1.53	0.41
201360_at	CST3	1.35	27.92	227407_at	FLJ90013	-1.53	0.4
201669_s_at	MARCKS	1.35	2.17	202580_x_at	FOXM1	-1.53	0.03
201925_s_at	DAF	1.35	2.94	205483_s_at	G1P2	-1.53	0.2
202252_at	RAB13	1.35	2.47	238581_at	GBP5	-1.53	0.21
208929_x_at	RPL13	1.35	2.13	203560_at	GGH	-1.53	0.42
210715_s_at	SPINT2	1.35	2.77	204875_s_at	GMDS	-1.53	0.48
218723_s_at	RGC32	1.35	2.54	218663_at	HCAP-G	-1.53	0.04
218747_s_at	TAPBPL	1.35	2.42	219863_at	HERC5	-1.53	0.23
226482_s_at	F11R	1.35	2.59	219352_at	HERC6	-1.53	0.26
234512_x_at	LOC442159	1.35	2.23	209398_at	HIST1H1C	-1.53	0.49
238893_at	LOC338758	1.35	2.28	208808_s_at	HMGB2	-1.53	0.32
201324_at	EMP1	1.32	6.83	202540_s_at	HMGCR	-1.53	0.41
202933_s_at	YES1	1.32	2.72	201132_at	HNRPH2	-1.53	0.46
203535_at	S100A9	1.32	105.2	210588_x_at	HNRPH3	-1.53	0.49
221297_at	GPRC5D	1.32	6.58	200594_x_at	HNRPU	-1.53	0.44
226140_s_at	OTUD1	1.32	2.33	202602_s_at	HTATSF1	-1.53	0.36
228993_s_at	LOC92482	1.32	2.16	202069_s_at	IDH3A	-1.53	0.38
1560818_at	LOC387895	1.29	2.71	206332_s_at	IFI16	-1.53	0.41
1566956_at	OR7E104P	1.29	2.53	202411_at	IFI27	-1.53	0.16
200026_at	RPL34 /// LOC	1.29	2.68	209417_s_at	IFI35	-1.53	0.25
200817_x_at	RPS10	1.29	2.37	214059_at	IFI44	-1.53	0.18
201005_at	CD9	1.29	2.98	204439_at	IFI44L	-1.53	0.11
201136_at	PLP2	1.29	2.79	219209_at	IFIH1	-1.53	0.24
201403_s_at	MGST3	1.29	3.6	203153_at	IFIT1	-1.53	0.13
201464_x_at	JUN	1.29	3.2	211375_s_at	ILF3	-1.53	0.49
201812_s_at	TOMM7 /// LO	1.29	2.95	208436_s_at	IRF7	-1.53	0.4
203640_at	MBNL2	1.29	2.17	1553678_a_at	ITGB1	-1.53	0.39
205863_at	S100A12	1.29	77.11	203710_at	ITPR1	-1.53	0.19
210006_at	ABHD14A	1.29	2.48	202417_at	KEAP1	-1.53	0.39
212509_s_at	MXRA7	1.29	2.99	234994_at	KIAA1913	-1.53	0.33
213540_at	HSD17B8	1.29	2.38	204444_at	KIF11	-1.53	0.13
216348_at	RPS17 /// LOC	1.29	4.63	236641_at	KIF14	-1.53	0.12
224741_x_at	GAS5	1.29	2.84	219306_at	KIF15	-1.53	0.19
229498_at	MBNL3	1.29	2.07	218755_at	KIF20A	-1.53	0.21
235666_at	ITGA8	1.29	7.29	204709_s_at	KIF23	-1.53	0.08
37028_at	PPP1R15A	1.26	5.85	218355_at	KIF4A	-1.53	0.12
1553551_s_at	ND2	1.22	2	204162_at	KNTC2	-1.53	0.14
200017_at	RPS27A	1.22	3.14	201795_at	LBR	-1.53	0.42
200029_at	RPL19	1.22	2.04	226702_at	LOC129607	-1.53	0.18
202403_s_at	COL1A2	1.22	4.41	222039_at	LOC146909	-1.53	0.23
203391_at	FKBP2	1.22	2.07	1568592_at	LOC400368	-1.53	0.44



211458_s_at	GABARAPL1	1.22	2.2	219588_s_at	LUZP5	-1.53	0.3
213619_at	HNRPH1	1.22	2.52	203362_s_at	MAD2L1	-1.53	0.2
214658_at	TMED7	1.22	2.26	220651_s_at	MCM10	-1.53	0.15
216570_x_at	RPL29 /// LOC	1.22	4.29	201555_at	MCM3	-1.53	0.4
218858_at	DEPDC6	1.22	4.96	216237_s_at	MCM5	-1.53	0.43
222229_x_at	RPL26 /// LOC	1.22	2.97	210983_s_at	MCM7	-1.53	0.44
223193_x_at	E2IG5	1.22	2.22	204825_at	MELK	-1.53	0.13
225190_x_at	RPL35A	1.22	2.15	206247_at	MICB	-1.53	0.45
226190_at	RPL4	1.22	2.97	212021_s_at	MKI67	-1.53	0.17
226278_at	DKFZp313A2	1.22	2.25	218883_s_at	MLF1IP	-1.53	0.36
219572_at	CADPS2	1.19	6.98	202086_at	MX1	-1.53	0.31
201105_at	LGALS1	1.16	3.79	218926_at	MYNN	-1.53	0.46
210980_s_at	ASAHI	1.16	2.18	32069_at	N4BP1	-1.53	0.49
217145_at	IGK@ /// IGKC	1.16	3.45	201970_s_at	NASP	-1.53	0.31
217266_at	RPL15 /// LOC	1.16	4.73	204641_at	NEK2	-1.53	0.05
222297_x_at	RPL18	1.16	2.74	203574_at	NFIL3	-1.53	0.44
223343_at	MS4A7	1.16	140.15	218889_at	NOC3L	-1.53	0.46
225090_at	SYVN1	1.16	2.09	226474_at	NOD27	-1.53	0.31
229742_at	LOC145853	1.16	2.22	208698_s_at	NONO	-1.53	0.44
234381_at	IGLC2	1.16	3.24	202188_at	NUP93	-1.53	0.46
41047_at	C9orf16	1.16	5.88	218039_at	NUSAP1	-1.53	0.16
				202869_at	OAS1	-1.53	0.23
				204972_at	OAS2	-1.53	0.26
				205660_at	OASL	-1.53	0.16
				219105_x_at	ORC6L	-1.53	0.39
				202780_at	OXCT1	-1.53	0.37
				219148_at	PBK	-1.53	0.18
				205512_s_at	PDCD8	-1.53	0.45
				201037_at	PFKP	-1.53	0.3
				221521_s_at	Pfs2	-1.53	0.33
				221816_s_at	PHF11	-1.53	0.44
				227211_at	PHF19	-1.53	0.22
				225194_at	PLRG1	-1.53	0.42
				202430_s_at	PLSCR1	-1.53	0.15
				1567214_a_at	PNN	-1.53	0.39
				225291_at	PNPT1	-1.53	0.26
				204441_s_at	POLA2	-1.53	0.44
				219510_at	POLQ	-1.53	0.16
				204228_at	PPIH	-1.53	0.5
				201603_at	PPP1R12A	-1.53	0.49
				201214_s_at	PPP1R7	-1.53	0.48
				218009_s_at	PRC1	-1.53	0.16
				206102_at	PSF1	-1.53	0.24
				209040_s_at	PSMB8	-1.53	0.4
				204279_at	PSMB9	-1.53	0.43
				213982_s_at	RABGAP1L	-1.53	0.43
				222077_s_at	RACGAP1	-1.53	0.23
				204146_at	RAD51AP1	-1.53	0.17
				201394_s_at	RBM5	-1.53	0.45
				218352_at	RCBTB1	-1.53	0.45
				224578_at	RCC2	-1.53	0.5
				202963_at	RFX5	-1.53	0.45
				201477_s_at	RRM1	-1.53	0.48
				201890_at	RRM2	-1.53	0.05
				213797_at	RSAD2	-1.53	0.11
				203594_at	RTCD1	-1.53	0.49
				204197_s_at	RUNX3	-1.53	0.5
				226603_at	SAMD9L	-1.53	0.22
				204502_at	SAMHD1	-1.53	0.31
				218217_at	SCPEP1	-1.53	0.43
				202361_at	SEC24C	-1.53	0.33
				201586_s_at	SFPQ	-1.53	0.49

230165_at	SGOL2	-1.53	0.38
219493_at	SHCBP1	-1.53	0.08
219734_at	SIDT1	-1.53	0.44
205339_at	SIL	-1.53	0.22
206542_s_at	SMARCA2	-1.53	0.49
202303_x_at	SMARCA5	-1.53	0.43
204240_s_at	SMC2L1	-1.53	0.26
201663_s_at	SMC4L1	-1.53	0.3
212569_at	SMCHD1	-1.53	0.43
222410_s_at	SNX6	-1.53	0.5
207777_s_at	SP140	-1.53	0.45
209218_at	SQLE	-1.53	0.42
217995_at	SQRDL	-1.53	0.47
204092_s_at	STK6	-1.53	0.25
1554572_a_at	SUV39H2	-1.53	0.43
218308_at	TACC3	-1.53	0.18
202307_s_at	TAP1	-1.53	0.25
212330_at	TFDP1	-1.53	0.35
203046_s_at	TIMELESS	-1.53	0.29
220146_at	TLR7	-1.53	0.19
203432_at	TMPO	-1.53	0.48
201291_s_at	TOP2A	-1.53	0.06
210052_s_at	TPX2	-1.53	0.14
203567_s_at	TRIM38	-1.53	0.39
202589_at	TYMS	-1.53	0.14
203281_s_at	UBE1L	-1.53	0.49
201649_at	UBE2L6	-1.53	0.38
219211_at	USP18	-1.53	0.16
203856_at	VRK1	-1.53	0.4
202663_at	WASPIP	-1.53	0.39
209053_s_at	WHSC1	-1.53	0.38
208775_at	XPO1	-1.53	0.38
220118_at	ZBTB32	-1.53	0.26
204026_s_at	ZWINT	-1.53	0.12
222037_at	MCM4	-1.5	0.2
210337_s_at	ACLY	-1.47	0.48
223251_s_at	ANKRD10	-1.47	0.29
205345_at	BARD1	-1.47	0.25
220175_s_at	CBWD1 /// CE	-1.47	0.44
201327_s_at	CCT6A	-1.47	0.5
221520_s_at	CDCA8	-1.47	0.23
204159_at	CDKN2C	-1.47	0.38
218252_at	CKAP2	-1.47	0.37
217542_at	CPM	-1.47	0.26
201111_at	CSE1L	-1.47	0.48
228361_at	E2F2	-1.47	0.3
209536_s_at	EHD4	-1.47	0.3
205061_s_at	EXOSC9	-1.47	0.33
222848_at	FKSG14	-1.47	0.29
215071_s_at	HIST1H2AC	-1.47	0.27
204806_x_at	HLA-F	-1.47	0.46
207165_at	HMMR	-1.47	0.32
209408_at	KIF2C	-1.47	0.37
211762_s_at	KPNA2	-1.47	0.31
200900_s_at	M6PR	-1.47	0.41
202107_s_at	MCM2	-1.47	0.42
218543_s_at	PARP12	-1.47	0.4
204887_s_at	PLK4	-1.47	0.14
235061_at	PPM1K	-1.47	0.35
228531_at	SAMD9	-1.47	0.2
204563_at	SELL	-1.47	0.33
208941_s_at	SEPHS1	-1.47	0.47

205120_s_at	SGCB	-1.47	0.23
203761_at	SLA	-1.47	0.44
202236_s_at	SLC16A1	-1.47	0.44
209762_x_at	SP110	-1.47	0.46
209969_s_at	STAT1	-1.47	0.21
208991_at	STAT3	-1.47	0.45
217964_at	TTC19	-1.47	0.48
213326_at	VAMP1	-1.47	0.49
212533_at	WEE1	-1.47	0.36
1555785_a_at	XRN1	-1.47	0.36
212738_at	ARHGAP19	-1.44	0.45
218397_at	FANCL	-1.44	0.44
203711_s_at	HIBCH	-1.44	0.38
211932_at	HNRPA3	-1.44	0.44
219716_at	APOL6	-1.41	0.38
222870_s_at	B3GNT1	-1.41	0.43
201641_at	BST2	-1.41	0.36
205467_at	CASP10	-1.41	0.45
211297_s_at	CDK7	-1.41	0.48
207828_s_at	CENPF	-1.41	0.3
208912_s_at	CNP	-1.41	0.39
218102_at	DERA	-1.41	0.46
211501_s_at	EIF3S9	-1.41	0.49
209393_s_at	EIF4E2	-1.41	0.4
1555355_a_at	ETS1	-1.41	0.18
204780_s_at	FAS	-1.41	0.37
218646_at	FLJ20534	-1.41	0.49
217788_s_at	GALNT2	-1.41	0.41
202270_at	GBP1	-1.41	0.33
201422_at	IFI30	-1.41	0.32
229450_at	IFIT3	-1.41	0.1
203275_at	IRF2	-1.41	0.5
212274_at	LPIN1	-1.41	0.44
217842_at	LUC7L2	-1.41	0.45
204994_at	MX2	-1.41	0.26
201710_at	MYBL2	-1.41	0.4
203964_at	NMI	-1.41	0.4
206550_s_at	NUP155	-1.41	0.47
200815_s_at	PAFAH1B1	-1.41	0.46
218809_at	PANK2	-1.41	0.39
222631_at	PI4K2B	-1.41	0.36
221649_s_at	PPAN	-1.41	0.37
204060_s_at	PRKX /// PRK	-1.41	0.38
201232_s_at	PSMD13	-1.41	0.49
204127_at	RFC3	-1.41	0.45
205449_at	SAC3D1	-1.41	0.48
209486_at	SAS10	-1.41	0.47
221561_at	SOAT1	-1.41	0.39
203743_s_at	TDG	-1.41	0.49
202688_at	TNFSF10	-1.41	0.29
214329_x_at	TNFSF10	-1.41	0.21
203148_s_at	TRIM14	-1.41	0.33
224800_at	WDFY1	-1.41	0.32
208087_s_at	ZBP1	-1.41	0.32
222606_at	ZWILCH	-1.35	0.29
235276_at	EPST11	-1.35	0.34
202629_at	APPBP2	-1.35	0.48
217966_s_at	C1orf24	-1.35	0.31
234987_at	C20orf118	-1.35	0.43
225687_at	C20orf129	-1.35	0.4
211368_s_at	CASP1	-1.35	0.45
204695_at	CDC25A	-1.35	0.27

215629_s_at	DLEU2 /// BCI	-1.35	0.45
225415_at	DTX3L	-1.35	0.35
221586_s_at	E2F5	-1.35	0.47
204415_at	G1P3	-1.35	0.28
217436_x_at	HLA-G /// HLA	-1.35	0.46
202794_at	INPP1	-1.35	0.38
202503_s_at	KIAA0101	-1.35	0.31
209680_s_at	KIFC1	-1.35	0.25
213507_s_at	KPNB1	-1.35	0.46
202097_at	NUP153	-1.35	0.46
223220_s_at	PARP9	-1.35	0.35
225367_at	PGM2	-1.35	0.49
205909_at	POLE2	-1.35	0.42
203401_at	PRPS2	-1.35	0.41
203447_at	PSMD5	-1.35	0.5
223322_at	RASSF5	-1.35	0.48
222203_s_at	RDH14	-1.35	0.47
218781_at	SMC6L1	-1.35	0.46
203182_s_at	SRPK2	-1.35	0.46
224806_at	TRIM25	-1.35	0.39
225655_at	UHRF1	-1.35	0.41
227249_at	MYH11	-1.32	0.47
205024_s_at	RAD51	-1.32	0.49
205997_at	ADAM28	-1.29	0.47
222613_at	C12orf4	-1.29	0.28
226109_at	C21orf91	-1.29	0.45
218085_at	CHMP5	-1.29	0.43
220044_x_at	CROP	-1.29	0.47
222154_s_at	DNAPT6	-1.29	0.34
205419_at	EBI2	-1.29	0.48
209572_s_at	EED	-1.29	0.45
204283_at	FARS2	-1.29	0.47
203397_s_at	GALNT3	-1.29	0.36
224964_s_at	GNG2	-1.29	0.5
211529_x_at	HLA-G	-1.29	0.47
201601_x_at	IFITM1	-1.29	0.4
212943_at	KIAA0528	-1.29	0.41
205569_at	LAMP3	-1.29	0.33
222427_s_at	LARS	-1.29	0.5
223298_s_at	NT5C3	-1.29	0.39
221918_at	PCTK2	-1.29	0.49
210759_s_at	PSMA1	-1.29	0.49
201316_at	PSMA2	-1.29	0.47
212918_at	RECQL	-1.29	0.48
210432_s_at	SCN3A	-1.29	0.38
212385_at	TCF4	-1.29	0.47
213009_s_at	TRIM37	-1.29	0.48
201266_at	TXNRD1	-1.29	0.44
225414_at	RNF149	-1.26	0.34
212041_at	ATP6V0D1	-1.22	0.46
203481_at	C10orf6	-1.22	0.5
219375_at	CEPT1	-1.22	0.49
219290_x_at	DAPP1	-1.22	0.49
203302_at	DCK	-1.22	0.45
209392_at	ENPP2	-1.22	0.28
1552787_at	HELB	-1.22	0.34
203474_at	IQGAP2	-1.22	0.41
204686_at	IRS1	-1.22	0.45
212447_at	KBTBD2	-1.22	0.48
221502_at	KPNA3	-1.22	0.46
203276_at	LMNB1	-1.22	0.41
216952_s_at	LMNB2	-1.22	0.41

202911_at	MSH6	-1.22	0.49
203606_at	NDUFS6	-1.22	0.46
201614_s_at	RUVBL1	-1.22	0.5
227210_at	SFMBT2	-1.22	0.49
203145_at	SPAG5	-1.22	0.41
216304_x_at	YME1L1	-1.22	0.49
218478_s_at	ZCCHC8	-1.22	0.45
229551_x_at	ZNF367	-1.22	0.33
226320_at	THOC4	-1.19	0.49
242438_at	ASXL1	-1.16	0.45
208696_at	CCT5	-1.16	0.42
204313_s_at	CREB1	-1.16	0.46
242560_at	FANCD2	-1.16	0.49
218008_at	FLJ10099	-1.16	0.47
229711_s_at	MGC5370	-1.16	0.5
207700_s_at	NCOA3	-1.16	0.46
212299_at	NEK9	-1.16	0.47
218403_at	P53CSV	-1.16	0.48
231809_x_at	PDCD7	-1.16	0.44
204269_at	PIM2	-1.16	0.49
202466_at	POLS	-1.16	0.48
212587_s_at	PTPRC	-1.16	0.34
212417_at	SCAMP1	-1.16	0.34
200991_s_at	SNX17	-1.16	0.5
222439_s_at	THRAP3	-1.16	0.35
223804_s_at	THUMPD3	-1.16	0.46
202338_at	TK1	-1.16	0.47
1552426_a_at	TM2D3	-1.16	0.45
200783_s_at	STMN1	-1.13	0.46
208325_s_at	AKAP13	-1.1	0.44
201794_s_at	C1orf16	-1.1	0.48
233208_x_at	CPSF2	-1.1	0.5
213086_s_at	CSNK1A1	-1.1	0.49
225633_at	DPY19L3	-1.1	0.47
225099_at	FBXO45	-1.1	0.4
202223_at	ITM1	-1.1	0.46
227228_s_at	KIAA1509	-1.1	0.43
217933_s_at	LAP3	-1.1	0.49
224568_x_at	MALAT1	-1.1	0.41
202032_s_at	MAN2A2	-1.1	0.48
225398_at	RPUSD4	-1.1	0.48
235339_at	SETDB2	-1.1	0.47
208900_s_at	TOP1	-1.1	0.45
221029_s_at	WNT5B	-1.1	0.47
218501_at	ARHGEF3	-1.04	0.47
200951_s_at	CCND2	-1.04	0.45
202852_s_at	FLJ11506	-1.04	0.42
226077_at	FLJ31951	-1.04	0.45
213294_at	FLJ38348	-1.04	0.47
201723_s_at	GALNT1	-1.04	0.49
202864_s_at	SP100	-1.04	0.45
213293_s_at	TRIM22	-1.04	0.32
236000_s_at	HNRPD	-0.98	0.39
244447_at	KLF10	-0.98	0.43
211596_s_at	LRIG1	-0.98	0.5
228711_at	ZNF37A	-0.92	0.48
1553575_at	ND6	-0.86	0.48
201330_at	RARS	-0.8	0.48
212671_s_at	HLA-DQA1 ///	-0.49	0.43

**Supplementary Table 2. Top 30 pathways associated with genes overexpressed in D30 PCs+BMPCs versus D10 early PCs**

Geneset	Number of protein in Geneset	Protein from network	P-value	FDR	Nodes
Influenza Life Cycle(R)	187	11	0	<1.00e-03	RPL19,POLR2E,RPL13,RPL15,RPL34,RPS20,RPS27A,RPL35A,RPS14,RPS10,HNRNP1
Translation(R)	119	9	0	<5.00e-04	RPL19,RPL13,RPL15,RPL34,RPS20,RPS27A,RPL35A,RPS14,RPS10
Ribosome(K)	88	8	0	<3.33e-04	RPL19,RPL13,RPL15,RPL34,RPS20,RPS27A,RPL35A,RPS10
Metabolism of proteins(R)	201	9	0	<2.50e-04	RPL19,RPL13,RPL15,RPL34,RPS20,RPS27A,RPL35A,RPS14,RPS10
Formation of Platelet plug(R)	118	6	0	4.00e-04	TIMP1,CD9,PPBP,GNG10,COL1A2,COL1A1
PDGFR-alpha signaling pathway(N)	20	3	0.0001	7.17e-03	CAV1,FOS,JUN
Focal adhesion(K)	200	6	0.0003	1.19e-02	CAV1,ACTG1,JUN,ITGA8,COL1A2,COL1A1
bcr signaling pathway(B)	28	3	0.0003	1.10e-02	FOS,DUSP1,JUN
ECM-receptor interaction(K)	84	4	0.0006	1.82e-02	SDC1,ITGA8,COL1A2,COL1A1
Calcineurin-regulated NFAT-dependent transcription in lymphocytes(N)	46	3	0.0012	3.78e-02	FOS,EGR1,JUN
IFN-gamma pathway(N)	373	7	0.0012	3.55e-02	CAV1,FOS,EGR1,DUSP1,JUN,COL1A2,COL1A1
IL6-mediated signaling events(N)	47	3	0.0013	3.40e-02	TIMP1,FOS,JUN
t cell receptor signaling pathway(B)	51	3	0.0016	4.08e-02	FOS,DUSP1,JUN
repression of pain sensation by the transcriptional regulator dream(B)	13	2	0.0016	3.86e-02	FOS,JUN
Regulation of cytoplasmic and nuclear SMAD2/3 signaling(N)	289	6	0.0017	3.32e-02	CAV1,FOS,EGR1,DUSP1,JUN,COL1A2
Regulation of nuclear SMAD2/3 signaling(N)	289	6	0.0017	3.32e-02	CAV1,FOS,EGR1,DUSP1,JUN,COL1A2
TGF-beta receptor signaling(N)	289	6	0.0017	3.32e-02	CAV1,FOS,EGR1,DUSP1,JUN,COL1A2
calcium signaling by hbx of hepatitis b virus(B)	14	2	0.0019	3.54e-02	FOS,JUN
cadmium induces dna synthesis and proliferation in macrophages(B)	15	2	0.0021	3.81e-02	FOS,JUN
Integrin signalling pathway(P)	208	5	0.0023	3.95e-02	CAV1,ACTG1,ITGA8,COL1A2,COL1A1
Plasma membrane estrogen receptor signaling(N)	310	6	0.0024	3.93e-02	CAV1,FOS,EGR1,SDC1,DUSP1,JUN
TGFBR(C)	128	4	0.0026	3.94e-02	CAV1,FOS,FOSB,JUN
Fc-epsilon receptor I signaling in mast cells(N)	61	3	0.0026	3.83e-02	FOS,DUSP1,JUN
oxidative stress induced gene expression via nrf2(B)	18	2	0.0031	3.92e-02	FOS,JUN
mets affect on macrophage differentiation(B)	18	2	0.0031	3.92e-02	FOS,JUN
nerve growth factor pathway (ngf)(B)	18	2	0.0031	3.92e-02	FOS,JUN
Cell adhesion molecules (CAMs)(K)	135	4	0.0031	3.83e-02	HLA-DOB,SDC1,ITGA8,VCAN
Downstream signaling in na+ve CD8+ T cells(N)	65	3	0.0032	3.65e-02	FOS,EGR1,JUN
Integrins in angiogenesis(N)	65	3	0.0032	3.65e-02	FOS,SDC1,JUN
HIF-1-alpha transcription factor network(N)	66	3	0.0033	3.63e-02	CXCL12,FOS,JUN

**Supplementary Table 3. Top 30 pathways associated with genes overexpressed in D10 early PCs versus D30 PCs+BMPCs**

Geneset	Number of protein in Geneset	Protein from network	P-value	FDR	Nodes
M Phase(R)	96	22	0	<5.00e-04	XPO1, CDCA8, SGOL2, MAD2L1, RCC2, ZWINT, NUF2, NDC80, CDC20, KIF23, KIF2C, NDE1, BUB1B, BUB1, PAFAH1B1, ZWILCH, CENPN, CENPF, BIRC5, CENPK, MLF1IP, KIF20A
G1/S Transition(R)	100	24	0	<5.00e-04	MCM10, CCNA2, WEE1, PSMA2, PSMA1, POLE2, TFDP1, PSMB8, PSMB9, E2F2, MCM7, PSMD5, CDK7, MCM2, MCM3, MCM4, MCM5, RRM2, CKS1B, POLA2, TYMS, CDC25A, CCNB1, PSMD13
S Phase(R)	103	22	0	<3.33e-04	CCNA2, WEE1, PSMA2, PSMA1, RFC3, POLE2, GINS1, GINS2, PSMB8, PSMB9, MCM7, PSMD5, CDK7, MCM2, MCM3, MCM4, MCM5, CKS1B, POLA2, CDC25A, CDC25B, PSMD13
Signaling by Aurora kinases(N)	94	21	0	<2.50e-04	XPO1, AURKA, CDCA8, TACC3, STMN1, NDC80, BRCA1, KIF23, KIF2C, TPX2, MDM2, NCAPH, NCAPG, BUB1, DLGAP5, BIRC5, RACGAP1, SMC2, SMC4, CDC25B, KIF20A
Cell Cycle Checkpoints(R)	110	22	0	<2.00e-04	MCM10, WEE1, PSMA2, PSMA1, RFC3, MAD2L1, CHEK1, CDC20, PSMB8, PSMB9, MCM7, PSMD5, MCM2, MCM3, MCM4, MCM5, BUB1B, MDM2, CDC25A, CCNB1, CCNB2, PSMD13
Cell cycle(K)	128	23	0	<1.67e-04	CDKN2C, CCNA2, WEE1, MAD2L1, CHEK1, TFDP1, CDC20, E2F2, E2F5, MCM7, CDK7, MCM2, MCM3, MCM4, MCM5, C
Aurora B signaling(N)	39	14	0	<1.43e-04	CND2, BUB1B, MDM2, BUB1, CDC25A, CDC25B, CCNB1, CCNB2
DNA Replication(R)	97	19	0	<1.25e-04	AURKA, CDCA8, STMN1, NDC80, KIF23, KIF2C, NCAPH, NCAPG, BUB1, BIRC5, RACGAP1, SMC2, SMC4, KIF20A
M/G1 Transition(R)	61	12	0	<1.11e-04	MCM10, CCNA2, PSMA2, PSMA1, RFC3, POLE2, GINS1, GINS2, PSMB8, PSMB9, E2F2, MCM7, PSMD5, MCM2, MCM3, MCM4, MCM5, POLA2, PSMD13
G2/M Transition(R)	83	13	0	<1.00e-04	PSMA2, PSMA1, PSMB8, PSMB9, E2F2, MCM7, PSMD5, MCM2, MCM3, MCM4, MCM5, PSMD13
APC/C-mediated degradation of cell cycle proteins(R)	75	12	0	<9.09e-05	XPO1, CCNA2, WEE1, NEK2, PLK4, NDE1, CDK7, PAFAH1B1, CENPJ, CDC25A, CDC25B, CCNB1, CCNB2
DNA replication(K)	36	8	0	<8.33e-05	AURKA, CCNA2, PSMA2, PSMA1, MAD2L1, CDC20, PSMB8, PSMB9, PSMD5, BUB1B, CCNB1, PSMD13
FOXM1 transcription factor network(N)	38	8	0	<7.69e-05	RFC3, POLE2, MCM7, MCM2, MCM3, MCM4, MCM5, POLA2
Apoptosis(R)	128	13	0	<7.14e-05	NEK2, CKS1B, FOXM1, CENPF, BIRC5, CDC25B, CCNB1, CCNB2
Aurora A signaling(N)	62	9	0	6.67e-05	FAS, PSMA2, PSMA1, LMNB1, TFDP1, PSMB8, PSMB9, TNFSF10, CASP3, PSMD5, KPNB1, CASP10, PSMD13
G1 Phase(R)	17	5	0	6.88e-04	XPO1, AURKA, TACC3, BRCA1, TPX2, MDM2, DLGAP5, BIRC5, CDC25B
Host Interactions of HIV factors(R)	120	11	0	8.82e-04	TFDP1, E2F2, E2F5, CDK7, CCND2
cdk regulation of dna replication(B)	18	5	0	8.33e-04	XPO1, PSMA2, PSMA1, PSMB8, PSMB9, PSMD5, KPNB1, NUP93, NUP153, NUP155, PSMD13
caspase cascade in apoptosis(B)	21	5	0.0001	2.05e-03	MCM7, MCM2, MCM3, MCM4, MCM5
p53 signaling pathway(K)	69	8	0.0001	2.25e-03	LMNB1, LMNB2, CASP3, CASP1, CASP10
role of ran in mitotic spindle regulation(B)	12	4	0.0001	2.76e-03	FAS, CHEK1, CASP3, CCND2, RRM2, MDM2, CCNB1, CCNB2
Signaling by Wnt(R)	58	7	0.0002	4.50e-03	KPNB1, KIF15, TPX2, KPNA2
il-2 receptor beta chain in t cell activation(B)	45	6	0.0003	7.30e-03	PSMA2, PSMA1, PSMB8, PSMB9, PSMD5, CSNK1A1, PSMD13
BARD1 signaling events(N)	29	5	0.0003	7.08e-03	FAS, IRS1, TFDP1, CCND2, NMI, CCNB1
Progesterone-mediated oocyte maturation(K)	87	8	0.0004	8.44e-03	BRCA1, FANCL, RAD51, FANCD2, BARD1
cyclins and cell cycle regulation(B)	19	4	0.0006	1.20e-02	PRKX, CCNA2, MAD2L1, BUB1, CDC25A, CDC25B, CCNB1, CCNB2
FAS signaling pathway(P)	34	5	0.0006	1.19e-02	CDKN2C, TFDP1, CCND2, CCNB1
Caspase cascade in apoptosis(N)	52	6	0.0006	1.17e-02	FAS, LMNB1, LMNB2, CASP3, CASP10
TRAIL signaling pathway(N)	323	16	0.0007	1.28e-02	TOP1, LMNB1, LMNB2, CASP3, CASP1, CASP10
TNF receptor signaling pathway(N)	272	14	0.0011	1.86e-02	XPO1, TOP1, IRS1, LMNB1, LMNB2, TNFSF10, ETS1, CASP3, CASP1, KPNB1, AIFM1, MDM2, KPNA2, CSNK1A1, PTP RC, CASP10

**Supplementary Table 4. SAM supervised analysis comparing D30PCs and BMPCs.**

Genes overexpressed in D30PCs (555 unique genes)				Genes overexpressed in BMPCs (198 unique genes)			
Gene ID	Gene Name	Score(d)	Fold Change	Gene ID	Gene Name	Score(d)	Fold Change
201000_at	AARS	-1.31	0.37	201034_at	ADD3	1.31	2.08
202169_s_at	AASDHPPT	-1.31	0.37	206121_at	AMPD1	1.31	15.12
203196_at	ABCC4	-1.31	0.15	227337_at	ANKRD37	1.31	4.95
200728_at	ACTR2	-1.31	0.25	206632_s_at	APOBEC3B	1.31	11.14
200996_at	ACTR3	-1.31	0.28	204416_x_at	APOC1	1.31	41.57
202603_at	ADAM10	-1.31	0.47	210980_s_at	ASAH1	1.31	2.87
201786_s_at	ADAR	-1.31	0.20	208764_s_at	ATP5G2	1.31	3.41
224655_at	AK3	-1.31	0.45	209492_x_at	ATP5I	1.31	5.10
208325_s_at	AKAP13	-1.31	0.08	223338_s_at	ATPIF1	1.31	2.40
202760_s_at	AKAP2 /// PA	-1.31	0.16	228498_at	B4GALT1	1.31	5.52
201900_s_at	AKR1A1	-1.31	0.49	210538_s_at	BIRC3	1.31	7.56
201952_at	ALCAM	-1.31	0.47	218024_at	BRP44L	1.31	2.88
222108_at	AMIGO2	-1.31	0.24	200920_s_at	BTG1	1.31	4.01
218167_at	AMZ2	-1.31	0.35	209924_at	CCL18	1.31	26.30
212286_at	ANKRD12	-1.31	0.21	205114_s_at	CCL3 /// CCL1	1.31	31.81
225852_at	ANKRD17	-1.31	0.35	206978_at	CCR2	1.31	3.38
224788_at	ARF6	-1.31	0.26	215049_x_at	CD163	1.31	204.00
202211_at	ARFGAP3	-1.31	0.47	204118_at	CD48	1.31	2.42
218098_at	ARFGEF2	-1.31	0.34	209619_at	CD74	1.31	2.85
221230_s_at	ARID4B	-1.31	0.28	201005_at	CD9	1.31	2.82
212614_at	ARID5B	-1.31	0.43	209357_at	CITED2	1.31	2.53
217852_s_at	ARL10C	-1.31	0.34	208659_at	CLIC1	1.31	2.30
222444_at	ARMCX3	-1.31	0.37	225312_at	COMMD6	1.31	3.41
208679_s_at	ARPC2	-1.31	0.26	200925_at	COX6A1	1.31	2.41
226914_at	ARPC5L	-1.31	0.15	201441_at	COX6B1	1.31	2.83
200058_s_at	ASCC3L1	-1.31	0.41	202110_at	COX7B	1.31	2.02
205047_s_at	ASNS	-1.31	0.40	201200_at	CREG1	1.31	2.85
212297_at	ATP13A3	-1.31	0.17	211698_at	CRI1	1.31	2.57
208836_at	ATP1B3	-1.31	0.30	1555889_at	CRTAP	1.31	3.33
213738_s_at	ATP5A1	-1.31	0.39	225681_at	CTHRC1	1.31	16.45
201972_at	ATP6V1A	-1.31	0.41	213275_x_at	CTSB	1.31	5.39
208678_at	ATP6V1E1	-1.31	0.34	202901_x_at	CTSS	1.31	3.72
212461_at	AZIN1	-1.31	0.48	209687_at	CXCL12	1.31	21.86
202391_at	BASP1	-1.31	0.49	211919_s_at	CXCR4	1.31	4.43
211946_s_at	BAT2D1	-1.31	0.38	221782_at	DNAJC10	1.31	2.31
225472_at	BAT4	-1.31	0.41	201021_s_at	DSTN	1.31	2.57
221530_s_at	BHLHB3	-1.31	0.32	201041_s_at	DUSP1	1.31	4.21
213154_s_at	BICD2	-1.31	0.33	209059_s_at	EDF1	1.31	4.02
202076_at	BIRC2	-1.31	0.34	227404_s_at	EGR1	1.31	10.49
228617_at	BIRC4BP	-1.31	0.08	221494_x_at	EIF3S12	1.31	2.56
202227_s_at	BRD8	-1.31	0.31	204774_at	EVI2A	1.31	2.57
209430_at	BTAF1	-1.31	0.29	226482_s_at	F11R	1.31	3.18
217945_at	BTBD1	-1.31	0.44	205237_at	FCN1	1.31	33.95
201236_s_at	BTG2	-1.31	0.46	219118_at	FKBP11	1.31	2.01
201458_s_at	BUB3	-1.31	0.30	224840_at	FKBP5	1.31	3.85
218462_at	BXDC5	-1.31	0.33	209189_at	FOS	1.31	3.76
217873_at	CAB39	-1.31	0.18	202768_at	FOSB	1.31	5.53
200655_s_at	CALM1	-1.31	0.20	200748_s_at	FTH1	1.31	3.39
200757_s_at	CALU	-1.31	0.40	202838_at	FUCA1	1.31	2.62
213798_s_at	CAP1	-1.31	0.37	218084_x_at	FXYP5	1.31	12.79
201237_at	CAPZA2	-1.31	0.22	224841_x_at	GAS5	1.31	2.86
212971_at	CARS	-1.31	0.40	213129_s_at	GCSH	1.31	2.27
202763_at	CASP3	-1.31	0.31	218147_s_at	GLT8D1	1.31	3.17
202370_s_at	CBFB	-1.31	0.48	215001_s_at	GLUL	1.31	7.96



200953_s_at CCND2	-1.31	0.05	201106_at GPX4	1.31	2.86
222999_s_at CCNL2	-1.31	0.31	211284_s_at GRN	1.31	2.43
200877_at CCT4	-1.31	0.37	211997_x_at H3F3B	1.31	2.20
200812_at CCT7	-1.31	0.29	211699_x_at HBA1 /// HB/	1.31	235.25
213857_s_at CD47	-1.31	0.31	214414_x_at HBA2	1.31	572.93
200985_s_at CD59	-1.31	0.38	209116_x_at HBB	1.31	208.76
217880_at CDC27	-1.31	0.30	208826_x_at HINT1	1.31	3.21
209056_s_at CDC5L	-1.31	0.39	201137_s_at HLA-DPB1	1.31	4.38
202284_s_at CDKN1A	-1.31	0.29	208894_at HLA-DRA	1.31	5.35
204159_at CDKN2C	-1.31	0.21	215193_x_at HLA-DRB1	1.31	3.46
219505_at CECR1	-1.31	0.44	210514_x_at HLA-G	1.31	2.39
203921_at CHST2	-1.31	0.20	213619_at HNRPH1	1.31	2.76
203044_at CHSY1	-1.31	0.35	218026_at HSPC009	1.31	2.02
223047_at CKLFSF6	-1.31	0.39	204683_at ICAM2	1.31	5.07
204170_s_at CKS2	-1.31	0.19	218611_at IER5	1.31	2.75
200860_s_at CNOT1	-1.31	0.44	215621_s_at IGHD	1.31	11.61
226153_s_at CNOT6L	-1.31	0.20	216412_x_at IGHG1	1.31	3.73
208912_s_at CNP	-1.31	0.28	212827_at IGHM	1.31	4.29
201359_at COPB	-1.31	0.34	211655_at IGLC2	1.31	6.13
201652_at COPS5	-1.31	0.43	209827_s_at IL16	1.31	2.22
222409_at CORO1C	-1.31	0.18	39402_at IL1B	1.31	31.29
224828_at CPEB4	-1.31	0.15	204116_at IL2RG	1.31	15.75
212180_at CRKL	-1.31	0.25	202859_x_at IL8	1.31	61.08
220044_x_at CROP	-1.31	0.24	201466_s_at JUN	1.31	7.50
219939_s_at CSDE1	-1.31	0.33	204017_at KDELR3	1.31	7.27
201112_s_at CSE1L	-1.31	0.29	1566887_x_at KIAA0284	1.31	4.00
205159_at CSF2RB	-1.31	0.47	219371_s_at KLF2	1.31	11.39
213086_s_at CSNK1A1	-1.31	0.18	221841_s_at KLF4	1.31	24.29
203392_s_at CTBP1	-1.31	0.32	208961_s_at KLF6	1.31	97.10
217127_at CTH	-1.31	0.11	228377_at KLHL14	1.31	41.20
221743_at CUGBP1	-1.31	0.37	201105_at LGALS1	1.31	4.31
201371_s_at CUL3	-1.31	0.43	201212_at LGMN	1.31	7.24
203531_at CUL5	-1.31	0.33	201847_at LIPA	1.31	4.06
221903_s_at CYLD	-1.31	0.42	230793_at LRRC16	1.31	5.37
201678_s_at DC12	-1.31	0.44	206584_at LY96	1.31	3.75
222488_s_at DCTN4	-1.31	0.44	1555745_at LYZ	1.31	208.24
218583_s_at DCUN1D1	-1.31	0.36	213975_s_at LYZ /// LILRB	1.31	1844.75
201241_at DDX1	-1.31	0.36	221760_at MAN1A1	1.31	2.33
208718_at DDX17	-1.31	0.40	202484_s_at MBD2	1.31	2.02
218819_at DDX26	-1.31	0.20	230011_at MGC40042	1.31	2.39
201210_at DDX3X	-1.31	0.31	201318_s_at MRCL3 /// M	1.31	2.73
202462_s_at DDX46	-1.31	0.41	222997_s_at MRPS21	1.31	2.23
220890_s_at DDX47	-1.31	0.34	223343_at MS4A7	1.31	146.53
200033_at DDX5	-1.31	0.48	202431_s_at MYC	1.31	16.90
231896_s_at DENR	-1.31	0.46	201502_s_at NFKBIA	1.31	8.69
219402_s_at DERL1	-1.31	0.50	223218_s_at NFKBIZ	1.31	2.56
201385_at DHX15	-1.31	0.24	216248_s_at NR4A2	1.31	13.37
212648_at DHX29	-1.31	0.24	203675_at NUCB2	1.31	2.41
212333_at DKFZP564F01	-1.31	0.38	226140_s_at OTUD1	1.31	2.52
223553_s_at DOK3	-1.31	0.39	210448_s_at P2RX5	1.31	5.12
202810_at DRG1	-1.31	0.42	223565_at PACAP	1.31	2.23
225415_at DTX3L	-1.31	0.29	243296_at PBEF1	1.31	27.49
226440_at DUSP22	-1.31	0.47	211941_s_at PBP	1.31	3.03
203624_at DXYS155E	-1.31	0.34	222392_x_at PERP	1.31	2.88
209033_s_at DYRK1A	-1.31	0.33	207132_x_at PFDN5	1.31	4.33
208091_s_at ECOP	-1.31	0.38	219014_at PLAC8	1.31	7.56
203279_at EDEM1	-1.31	0.23	211730_s_at POLR2L	1.31	3.47
213477_x_at EEF1A1	-1.31	0.46	223568_s_at PPAPDC1B	1.31	2.38

223046_at	EGLN1	-1.31	0.31	214146_s_at	PPBP	1.31	198.61
208726_s_at	EIF2S2	-1.31	0.30	37028_at	PPP1R15A	1.31	6.39
208708_x_at	EIF5	-1.31	0.33	200975_at	PPT1	1.31	2.12
212420_at	ELF1	-1.31	0.36	201858_s_at	PRG1	1.31	3.57
221773_at	ELK3	-1.31	0.46	200772_x_at	PTMA	1.31	2.52
226982_at	ELL2	-1.31	0.28	201568_at	QP-C	1.31	2.38
208788_at	ELOVL5	-1.31	0.36	205174_s_at	QPCT	1.31	55.57
209473_at	ENTPD1	-1.31	0.15	205801_s_at	RASGRP3	1.31	2.16
204076_at	ENTPD4	-1.31	0.41	218723_s_at	RGC32	1.31	2.21
225051_at	EPB41	-1.31	0.42	202988_s_at	RGS1	1.31	6.71
200843_s_at	EPRS	-1.31	0.34	202388_at	RGS2	1.31	3.43
235276_at	EPSTI1	-1.31	0.16	217379_at	RPL10	1.31	2.38
200043_at	ERH	-1.31	0.23	200036_s_at	RPL10A	1.31	2.81
201889_at	FAM3C	-1.31	0.49	200010_at	RPL11	1.31	4.10
226811_at	FAM46C	-1.31	0.42	212191_x_at	RPL13	1.31	3.56
224683_at	FBXO18	-1.31	0.28	214351_x_at	RPL13 /// LO	1.31	2.49
210638_s_at	FBXO9	-1.31	0.30	211942_x_at	RPL13A /// L	1.31	2.56
222729_at	FBXW7	-1.31	0.24	217266_at	RPL15 /// LO	1.31	5.96
203620_s_at	FCHSD2	-1.31	0.23	200022_at	RPL18	1.31	2.29
233898_s_at	FGFR10P2	-1.31	0.14	200869_at	RPL18A /// L	1.31	6.57
210142_x_at	FLOT1	-1.31	0.47	200029_at	RPL19	1.31	2.02
218210_at	FN3KRP	-1.31	0.26	225541_at	RPL22L1	1.31	4.41
233080_s_at	FNBP3	-1.31	0.16	200888_s_at	RPL23	1.31	3.49
212232_at	FNBP4	-1.31	0.26	222229_x_at	RPL26 /// LO	1.31	3.14
200090_at	FNTA	-1.31	0.35	200003_s_at	RPL28	1.31	4.11
206015_s_at	FOXJ3	-1.31	0.33	200823_x_at	RPL29	1.31	2.82
218356_at	FTSJ2	-1.31	0.40	216570_x_at	RPL29 /// LO	1.31	5.13
203988_s_at	FUT8	-1.31	0.09	200026_at	RPL34 /// LO	1.31	3.29
201637_s_at	FXR1	-1.31	0.46	219762_s_at	RPL36	1.31	3.44
224641_at	FYTTD1	-1.31	0.41	201406_at	RPL36A	1.31	4.54
204415_at	G1P3	-1.31	0.09	217092_x_at	RPL7 /// LOC	1.31	3.00
225007_at	G3BP	-1.31	0.41	200909_s_at	RPLP2	1.31	5.87
203725_at	GADD45A	-1.31	0.16	200817_x_at	RPS10	1.31	2.52
203066_at	GALNAC4S-6	-1.31	0.49	216505_x_at	RPS10 /// LO	1.31	4.80
1568618_a_ç	GALNT1	-1.31	0.16	208646_at	RPS14	1.31	6.54
217788_s_at	GALNT2	-1.31	0.38	216348_at	RPS17 /// LO	1.31	4.97
213453_x_at	GAPDH	-1.31	0.32	200949_x_at	RPS20	1.31	2.40
208693_s_at	GARS	-1.31	0.37	200834_s_at	RPS21	1.31	2.10
1598_g_at	GAS6	-1.31	0.50	200017_at	RPS27A	1.31	2.45
200009_at	GDI2	-1.31	0.45	200082_s_at	RPS7	1.31	2.47
209249_s_at	GHITM	-1.31	0.39	217747_s_at	RPS9	1.31	3.32
217814_at	GK001	-1.31	0.36	200872_at	S100A10	1.31	4.73
227525_at	GLCCI1	-1.31	0.41	202917_s_at	S100A8	1.31	133.97
214730_s_at	GLG1	-1.31	0.42	226051_at	SELM	1.31	3.60
206662_at	GLRX	-1.31	0.30	201427_s_at	SEPP1	1.31	183.23
212737_at	GM2A	-1.31	0.43	224625_x_at	SERF2	1.31	2.45
219920_s_at	GMPPB	-1.31	0.38	221263_s_at	SF3B5	1.31	3.92
201180_s_at	GNAI3	-1.31	0.46	223044_at	SLC40A1	1.31	90.64
200746_s_at	GNB1	-1.31	0.38	200826_at	SNRPD2	1.31	3.53
212959_s_at	GNPTAB	-1.31	0.39	219888_at	SPAG4	1.31	2.08
208798_x_at	GOLGA8A	-1.31	0.48	214512_s_at	SUB1	1.31	5.41
222552_at	GOLT1B	-1.31	0.46	201260_s_at	SYPL1	1.31	4.07
225433_at	GTF2A1	-1.31	0.32	225090_at	SYVN1	1.31	2.37
208066_s_at	GTF2B	-1.31	0.41	201666_at	TIMP1	1.31	8.73
210891_s_at	GTF2I /// GTI	-1.31	0.25	214658_at	TMED7	1.31	2.09
202605_at	GUSB	-1.31	0.42	217733_s_at	TMSB10	1.31	2.11
210164_at	GZMB	-1.31	0.07	202643_s_at	TNFAIP3	1.31	5.54
212010_s_at	H41	-1.31	0.38	201812_s_at	TOMM7 /// l	1.31	3.49

201007_at	HADHB	-1.31	0.39	235094_at	TPM4	1.31	2.44
202957_at	HCLS1	-1.31	0.45	216449_x_at	TRA1	1.31	2.46
200896_x_at	HDGF	-1.31	0.30	208763_s_at	TSC22D3	1.31	3.58
241955_at	HECTD1	-1.31	0.13	221700_s_at	UBA52	1.31	2.67
219863_at	HERC5	-1.31	0.12	217144_at	UBB	1.31	5.66
200989_at	HIF1A	-1.31	0.27	212519_at	UBE2E1	1.31	2.26
225368_at	HIPK2	-1.31	0.37	203868_s_at	VCAM1	1.31	98.93
210387_at	HIST1H2BG	-1.31	0.10	1554442_at	VMD2	1.31	9.16
202708_s_at	HIST2H2BE	-1.31	0.21	396_f_at	EPOR	1.20	2.34
230795_at	HIST2H4	-1.31	0.25	200736_s_at	GPX1	1.20	2.06
213932_x_at	HLA-A	-1.31	0.48	208306_x_at	HLA-DRB5	1.20	2.09
208812_x_at	HLA-C	-1.31	0.45	216430_x_at	IGLC1	1.20	3.21
200904_at	HLA-E	-1.31	0.47	209224_s_at	NDUFA2	1.20	2.49
209377_s_at	HMG3	-1.31	0.46	208622_s_at	VIL2	1.20	5.01
214280_x_at	HNRPA1	-1.31	0.31	217179_x_at	Anti-thyroglc	1.10	2.18
213356_x_at	HNRPA1 /// I	-1.31	0.44	202672_s_at	ATF3	1.10	2.44
225107_at	HNRPA2B1	-1.31	0.35	229437_at	BIC	1.10	5.97
211929_at	HNRPA3	-1.31	0.23	220059_at	BRDG1	1.10	2.25
214737_x_at	HNRPC	-1.31	0.36	219551_at	EAF2	1.10	2.10
221481_x_at	HNRPD	-1.31	0.45	216573_at	IGL	1.10	3.12
201031_s_at	HNRPH1	-1.31	0.32	218319_at	PELL1	1.10	2.47
201132_at	HNRPH2	-1.31	0.27	225190_x_at	RPL35A	1.10	2.24
200097_s_at	HNRPK	-1.31	0.40	217466_x_at	RPS2 /// LOC	1.10	4.21
208766_s_at	HNRPR	-1.31	0.43	201527_at	ATP6V1F	0.99	2.54
200594_x_at	HNRPU	-1.31	0.42	203665_at	HMOX1	0.99	15.74
217869_at	HSD17B12	-1.31	0.43	215214_at	IGLV3-25	0.99	2.07
219212_at	HSPA14	-1.31	0.26	217871_s_at	MIF	0.99	2.10
222405_at	HSPC121	-1.31	0.43	231735_s_at	PRO1073	0.99	2.34
200806_s_at	HSPD1	-1.31	0.30				
207783_x_at	HUWE1	-1.31	0.40				
204615_x_at	IDI1	-1.31	0.28				
208966_x_at	IFI16	-1.31	0.34				
209417_s_at	IFI35	-1.31	0.37				
203153_at	IFIT1	-1.31	0.11				
214022_s_at	IFITM1	-1.31	0.23				
201393_s_at	IGF2R	-1.31	0.35				
217022_s_at	IGHA1 /// IGI	-1.31	0.43				
209374_s_at	IGHM	-1.31	0.48				
237625_s_at	IGKC	-1.31	0.19				
214677_x_at	IGL@ /// IGL	-1.31	0.50				
217138_x_at	IGLC2	-1.31	0.07				
204912_at	IL10RA	-1.31	0.25				
211375_s_at	ILF3	-1.31	0.45				
209566_at	INSIG2	-1.31	0.28				
200791_s_at	IQGAP1	-1.31	0.42				
204562_at	IRF4	-1.31	0.17				
208436_s_at	IRF7	-1.31	0.43				
212766_s_at	ISG20L2	-1.31	0.25				
203882_at	ISGF3G	-1.31	0.30				
215177_s_at	ITGA6	-1.31	0.06				
211945_s_at	ITGB1	-1.31	0.40				
202223_at	ITM1	-1.31	0.26				
201648_at	JAK1	-1.31	0.28				
212447_at	KBTBD2	-1.31	0.22				
200699_at	KDEL2	-1.31	0.45				
206478_at	KIAA0125	-1.31	0.48				
212149_at	KIAA0143	-1.31	0.43				
200616_s_at	KIAA0152	-1.31	0.48				

200851_s_at	KIAA0174	-1.31	0.40
212846_at	KIAA0179	-1.31	0.49
212943_at	KIAA0528	-1.31	0.29
212314_at	KIAA0746	-1.31	0.44
202220_at	KIAA0907	-1.31	0.23
227228_s_at	KIAA1509	-1.31	0.20
244447_at	KLF10	-1.31	0.08
225390_s_at	KLF13	-1.31	0.24
221502_at	KPNA3	-1.31	0.25
213507_s_at	KPNB1	-1.31	0.39
203041_s_at	LAMP2	-1.31	0.47
217933_s_at	LAP3	-1.31	0.19
212137_at	LARP1	-1.31	0.33
226750_at	LARP2	-1.31	0.41
212714_at	LARP4	-1.31	0.21
200650_s_at	LDHA	-1.31	0.34
213564_x_at	LDHB	-1.31	0.34
218604_at	LEMD3	-1.31	0.20
221568_s_at	LIN7C	-1.31	0.43
200704_at	LITAF	-1.31	0.38
224629_at	LMAN1	-1.31	0.38
218191_s_at	LMBRD1	-1.31	0.44
212276_at	LPIN1	-1.31	0.31
216250_s_at	LPXN	-1.31	0.28
204674_at	LRMP	-1.31	0.22
201412_at	LRP10	-1.31	0.49
226321_at	LYSMD3	-1.31	0.41
214771_x_at	M-RIP	-1.31	0.36
200901_s_at	M6PR	-1.31	0.26
225394_s_at	MADP-1	-1.31	0.46
209014_at	MAGED1	-1.31	0.43
217745_s_at	MAK3	-1.31	0.47
224568_x_at	MALAT1	-1.31	0.02
217922_at	MAN1A2	-1.31	0.49
226538_at	MAN2A1	-1.31	0.47
201460_at	MAPKAPK2	-1.31	0.37
200713_s_at	MAPRE1	-1.31	0.38
201736_s_at	MARCH6	-1.31	0.27
221824_s_at	MARCH8	-1.31	0.47
201475_x_at	MARS	-1.31	0.34
217993_s_at	MAT2B	-1.31	0.34
203353_s_at	MBD1	-1.31	0.32
201620_at	MBTPS1	-1.31	0.28
200797_s_at	MCL1	-1.31	0.46
211675_s_at	MDFIC	-1.31	0.44
224675_at	MESDC2	-1.31	0.43
209265_s_at	METTL3	-1.31	0.49
239377_at	MGC11102	-1.31	0.25
223297_at	MGC4268	-1.31	0.29
226905_at	MGC45871	-1.31	0.20
200899_s_at	MGEA5	-1.31	0.26
201285_at	MKRN1	-1.31	0.33
214812_s_at	MOBK1B	-1.31	0.43
201994_at	MORF4L2	-1.31	0.38
226091_s_at	MRFAP1	-1.31	0.49
224971_at	MRPL30	-1.31	0.45
226134_s_at	MSI2	-1.31	0.28
207551_s_at	MSL3L1	-1.31	0.35

201761_at	MTHFD2	-1.31	0.48
216095_x_at	MTMR1	-1.31	0.32
203200_s_at	MTRR	-1.31	0.37
202086_at	MX1	-1.31	0.09
201960_s_at	MYCBP2	-1.31	0.46
208919_s_at	NADK	-1.31	0.41
200027_at	NARS	-1.31	0.45
217987_at	NBLA00058	-1.31	0.29
201384_s_at	NBR1	-1.31	0.21
200610_s_at	NCL	-1.31	0.49
200632_s_at	NDRG1	-1.31	0.27
204125_at	NDUFAF1	-1.31	0.24
212299_at	NEK9	-1.31	0.23
212676_at	NF1	-1.31	0.27
217722_s_at	NGRN	-1.31	0.36
212129_at	NIPA2	-1.31	0.40
213918_s_at	NIPBL	-1.31	0.33
218889_at	NOC3L	-1.31	0.28
211951_at	NOLC1	-1.31	0.30
200057_s_at	NONO	-1.31	0.48
202395_at	NSF	-1.31	0.40
209155_s_at	NT5C2	-1.31	0.30
223178_s_at	NT5C2L1	-1.31	0.22
212181_s_at	NUDT4	-1.31	0.22
202097_at	NUP153	-1.31	0.32
213682_at	NUP50	-1.31	0.32
202869_at	OAS1	-1.31	0.18
204972_at	OAS2	-1.31	0.26
201599_at	OAT	-1.31	0.46
200790_at	ODC1	-1.31	0.32
201800_s_at	OSBP	-1.31	0.27
209626_s_at	OSBPL3	-1.31	0.21
203480_s_at	OTUD4	-1.31	0.49
218197_s_at	OXR1	-1.31	0.21
229686_at	P2RY8	-1.31	0.25
200816_s_at	PAFAH1B1	-1.31	0.20
225626_at	PAG1	-1.31	0.09
222984_at	PAIP2	-1.31	0.44
202759_s_at	PALM2-AKAF	-1.31	0.33
212718_at	PAPOLA	-1.31	0.45
209043_at	PAPSS1	-1.31	0.39
200006_at	PARK7	-1.31	0.50
203905_at	PARN	-1.31	0.29
226326_at	PCGF5	-1.31	0.36
221918_at	PCTK2	-1.31	0.29
208612_at	PDIA3	-1.31	0.48
211048_s_at	PDIA4	-1.31	0.37
200886_s_at	PGAM1	-1.31	0.32
200737_at	PGK1	-1.31	0.31
225501_at	PHF6	-1.31	0.22
212506_at	PICALM	-1.31	0.41
204613_at	PLCG2	-1.31	0.37
202446_s_at	PLSCR1	-1.31	0.20
217779_s_at	PNRC2	-1.31	0.41
201803_at	POLR2B	-1.31	0.27
202466_at	POLS	-1.31	0.21
213360_s_at	POM121 ///	-1.31	0.47
205267_at	POU2AF1	-1.31	0.49

209296_at	PPM1B	-1.31	0.29
235061_at	PPM1K	-1.31	0.38
200726_at	PPP1CC	-1.31	0.30
212750_at	PPP1R16B	-1.31	0.18
201877_s_at	PPP2R5C	-1.31	0.23
203338_at	PPP2R5E	-1.31	0.43
230777_s_at	PRDM15	-1.31	0.22
201619_at	PRDX3	-1.31	0.33
202741_at	PRKACB	-1.31	0.49
200605_s_at	PRKAR1A	-1.31	0.36
225183_at	PRO0149	-1.31	0.38
227510_x_at	PRO1073	-1.31	0.20
209440_at	PRPS1	-1.31	0.41
200871_s_at	PSAP	-1.31	0.48
223062_s_at	PSAT1	-1.31	0.35
210759_s_at	PSMA1	-1.31	0.38
203396_at	PSMA4	-1.31	0.41
201114_x_at	PSMA7	-1.31	0.28
209040_s_at	PSMB8	-1.31	0.37
201068_s_at	PSMC2	-1.31	0.36
212296_at	PSMD14	-1.31	0.41
200830_at	PSMD2	-1.31	0.41
200773_x_at	PTMA /// LO	-1.31	0.49
208617_s_at	PTP4A2	-1.31	0.27
206574_s_at	PTP4A3	-1.31	0.02
212265_at	QKI	-1.31	0.31
213440_at	RAB1A	-1.31	0.43
203885_at	RAB21	-1.31	0.30
225001_at	RAB3D	-1.31	0.29
213531_s_at	RAB3GAP1	-1.31	0.41
209089_at	RAB5A	-1.31	0.48
209181_s_at	RABGGTB	-1.31	0.36
208640_at	RAC1	-1.31	0.38
200608_s_at	RAD21	-1.31	0.48
227224_at	RALGPS2	-1.31	0.28
200833_s_at	RAP1B	-1.31	0.43
223322_at	RASSF5	-1.31	0.36
229147_at	RASSF6	-1.31	0.07
210371_s_at	RBBP4	-1.31	0.44
219286_s_at	RBM15	-1.31	0.36
224781_s_at	RBM17	-1.31	0.45
201395_at	RBM5	-1.31	0.36
228030_at	RBM6	-1.31	0.19
212397_at	RDX	-1.31	0.39
212918_at	RECQL	-1.31	0.26
202636_at	RNF103	-1.31	0.20
225414_at	RNF149	-1.31	0.17
218528_s_at	RNF38	-1.31	0.40
200060_s_at	RNPS1	-1.31	0.35
213044_at	ROCK1	-1.31	0.30
212973_at	RPIA	-1.31	0.33
201011_at	RPN1	-1.31	0.31
213350_at	RPS11	-1.31	0.07
226660_at	RPS6KB1	-1.31	0.29
201206_s_at	RRBP1	-1.31	0.19
242625_at	RSAD2	-1.31	0.03
226425_at	RSNL2	-1.31	0.20
219549_s_at	RTN3	-1.31	0.27

201845_s_at RYBP	-1.31	0.43
235643_at SAMD9L	-1.31	0.06
201570_at SAMM50	-1.31	0.47
226742_at SAR1B	-1.31	0.40
212417_at SCAMP1	-1.31	0.09
201093_x_at SDHA	-1.31	0.48
202361_at SEC24C	-1.31	0.30
217716_s_at SEC61A1	-1.31	0.44
203133_at SEC61B	-1.31	0.50
201916_s_at SEC63	-1.31	0.35
200015_s_at SEPT2	-1.31	0.32
212414_s_at SEPT6 /// N-I	-1.31	0.26
217724_at SERBP1	-1.31	0.48
205352_at SERPIN1	-1.31	0.11
40189_at SET	-1.31	0.50
214305_s_at SF3B1	-1.31	0.28
201586_s_at SFPQ	-1.31	0.38
200754_x_at SFRS2	-1.31	0.44
201698_s_at SFRS9	-1.31	0.44
201739_at SGK	-1.31	0.13
227305_s_at SHMT1	-1.31	0.26
214096_s_at SHMT2	-1.31	0.49
222838_at SLAMF7	-1.31	0.45
212810_s_at SLC1A4	-1.31	0.36
200030_s_at SLC25A3	-1.31	0.36
204430_s_at SLC2A5	-1.31	0.24
218989_x_at SLC30A5	-1.31	0.41
203164_at SLC33A1	-1.31	0.35
217122_s_at SLC35E2	-1.31	0.34
224579_at SLC38A1	-1.31	0.24
220924_s_at SLC38A2	-1.31	0.17
202088_at SLC39A6	-1.31	0.44
209267_s_at SLC39A8	-1.31	0.44
224595_at SLC44A1	-1.31	0.45
201195_s_at SLC7A5	-1.31	0.25
225243_s_at SLMAP	-1.31	0.32
222399_s_at SMBP	-1.31	0.23
1558747_at SMCHD1	-1.31	0.12
226230_at SMEK2	-1.31	0.32
201221_s_at SNRP70	-1.31	0.41
201575_at SNW1	-1.31	0.40
222417_s_at SNX5	-1.31	0.35
227697_at SOCS3	-1.31	0.11
202864_s_at SP100	-1.31	0.30
218324_s_at SPATS2	-1.31	0.37
221844_x_at SPC3	-1.31	0.45
217927_at SPCS1	-1.31	0.49
201240_s_at SPCS2	-1.31	0.49
226353_at SPPL2A	-1.31	0.32
217995_at SQRDL	-1.31	0.41
224607_s_at SRP68	-1.31	0.42
208800_at SRP72	-1.31	0.48
201225_s_at SRRM1	-1.31	0.22
225435_at SSR1	-1.31	0.38
201998_at ST6GAL1	-1.31	0.38
200028_s_at STARD7	-1.31	0.27
209969_s_at STAT1	-1.31	0.08
225636_at STAT2	-1.31	0.36

208991_at	STAT3	-1.31	0.36
226525_at	STK17B	-1.31	0.45
225649_s_at	STK35	-1.31	0.35
221727_at	SUB1 /// SUE	-1.31	0.48
211069_s_at	SUMO1	-1.31	0.45
200740_s_at	SUMO3	-1.31	0.35
222977_at	SURF4	-1.31	0.37
207540_s_at	SYK	-1.31	0.17
237333_at	SYNCOILIN	-1.31	0.11
225213_at	TA-PP2C	-1.31	0.40
242388_x_at	TAGAP	-1.31	0.36
202307_s_at	TAP1	-1.31	0.34
225973_at	TAP2	-1.31	0.31
200020_at	TARDBP	-1.31	0.31
218520_at	TBK1	-1.31	0.25
223013_at	TBL1XR1	-1.31	0.49
216241_s_at	TCEA1	-1.31	0.43
209153_s_at	TCF3	-1.31	0.50
212386_at	TCF4	-1.31	0.21
221473_x_at	TDE1	-1.31	0.36
217853_at	TENS1	-1.31	0.39
207332_s_at	TFRC	-1.31	0.17
208944_at	TGFBR2	-1.31	0.27
201987_at	THRAP1	-1.31	0.49
202406_s_at	TIAL1	-1.31	0.50
215171_s_at	TIMM17A	-1.31	0.46
221702_s_at	TM2D3	-1.31	0.23
209150_s_at	TM9SF1	-1.31	0.48
201078_at	TM9SF2	-1.31	0.42
225343_at	TMED8	-1.31	0.31
205812_s_at	TMED9	-1.31	0.45
222391_at	TMEM30A	-1.31	0.25
218615_s_at	TMEM39A	-1.31	0.36
212622_at	TMEM41B	-1.31	0.33
219449_s_at	TMEM70	-1.31	0.40
222449_at	TMEPAI	-1.31	0.35
224566_at	TncRNA	-1.31	0.16
210260_s_at	TNFAIP8	-1.31	0.41
221829_s_at	TNPO1	-1.31	0.33
208900_s_at	TOP1	-1.31	0.16
225912_at	TP53INP1	-1.31	0.28
204079_at	TPST2	-1.31	0.38
212869_x_at	TPT1	-1.31	0.46
201398_s_at	TRAM1	-1.31	0.48
225537_at	TRAPPC6B	-1.31	0.22
203148_s_at	TRIM14	-1.31	0.23
201546_at	TRIP12	-1.31	0.24
210438_x_at	TROVE2	-1.31	0.24
224849_at	TTC17	-1.31	0.42
208073_x_at	TTC3	-1.31	0.50
239742_at	TULP4	-1.31	0.13
209476_at	TXNDC	-1.31	0.48
223325_at	TXNDC11	-1.31	0.30
201010_s_at	TXNIP	-1.31	0.41
201266_at	TXNRD1	-1.31	0.29
222578_s_at	UBE1DC1	-1.31	0.38
200667_at	UBE2D3	-1.31	0.31
222420_s_at	UBE2H	-1.31	0.33



217824_at	UBE2J1	-1.31	0.45
226921_at	UBR1	-1.31	0.44
212006_at	UBXD2	-1.31	0.41
218050_at	UFM1	-1.31	0.45
231968_at	UGCGL1	-1.31	0.46
225610_at	UHRF2	-1.31	0.47
213327_s_at	USP12	-1.31	0.34
221518_s_at	USP47	-1.31	0.18
225925_s_at	USP48	-1.31	0.39
201498_at	USP7	-1.31	0.31
213326_at	VAMP1	-1.31	0.35
222627_at	VPS54	-1.31	0.37
217742_s_at	WAC	-1.31	0.26
200629_at	WARS	-1.31	0.36
224738_x_at	WASL /// LOC	-1.31	0.49
213460_x_at	WBSCR20C	-1.31	0.23
222763_s_at	WDR33	-1.31	0.43
203721_s_at	WDR50	-1.31	0.40
213836_s_at	WIP149	-1.31	0.42
229630_s_at	WTAP	-1.31	0.33
208643_s_at	XRCC5	-1.31	0.40
225814_at	XRN1	-1.31	0.20
216304_x_at	YME1L1	-1.31	0.27
218647_s_at	YRDC	-1.31	0.37
212455_at	YT521	-1.31	0.40
221741_s_at	YTHDF1	-1.31	0.29
200638_s_at	YWHAZ	-1.31	0.29
224711_at	YY1	-1.31	0.30
210275_s_at	ZA20D2	-1.31	0.46
208087_s_at	ZBP1	-1.31	0.24
205788_s_at	ZC3H11A	-1.31	0.50
224858_at	ZDHHHC5	-1.31	0.48
212534_at	ZNF24	-1.31	0.39
223716_s_at	ZNF265	-1.31	0.28
209814_at	ZNF330	-1.31	0.40
209944_at	ZNF410	-1.31	0.44
224593_at	ZNF664	-1.31	0.42

Supplementary Table 5. Top 30 pathways associated with genes overexpressed in BMPCs versus D30 LLPCs

Geneset	Number of protein in Geneset	Protein from network	P-value	FDR	Nodes
Metabolism of proteins(R)	201	22	0,0000	<2.50e-04	RPL18,RPL36A,RPL19,RPL13,RPLP2,RPL10,RPL11,RPS27A,RPL35A,RPS14,PFN5,RPS10,UBA52,RPL36,RPS20,RPL10A,RPS21,RPS9,RPL28,RPS7,RPL29,RPL23
Influenza Life Cycle(R)	187	23	0,0000	<2.50e-04	RPL18,RPL36A,RPL19,RPL13,SNRPD2,RPLP2,RPL10,RPL11,RPS27A,RPL35A,RPS14,RPS10,UBA52,POLR2L,RPL36,RPS20,RPL10A,RPS21,RPS9,RPL28,RPS7,RPL29,RPL23
Translation(R)	119	21	0,0000	<2.50e-04	RPL18,RPL36A,RPL19,RPL13,RPLP2,RPL10,RPL11,RPS27A,RPL35A,RPS14,RPS10,UBA52,RPL36,RPS20,RPL10A,RPS21,RPS9,RPL28,RPS7,RPL29,RPL23
IL12-mediated signaling events(N)	112	7	0,0000	1.82E-03	FOS,IL1B,JUN,HLA-DRA,HLA-DRB1,NFKBIA,IL2RG
Ribosome(K)	88	20	0,0000	<2.50e-04	RPL18,RPL36A,RPL19,RPL13,RPLP2,RPL10,RPL11,RPS27A,RPL35A,RPS14,RPS10,UBA52,RPL36,RPS20,RPL10A,RPS21,RPS9,RPL28,RPS7,RPL29,RPL23
Antigen processing and presentation(K)	78	8	0,0000	<2.00e-04	LGMN,CTSS,HLA-G,CTSB,HLA-DRA,HLA-DRB1,CD74,HLA-DPB1
Leishmaniasis(K)	73	7	0,0000	5.00E-04	FOS,IL1B,JUN,HLA-DRA,HLA-DRB1,NFKBIA,HLA-DPB1
Type 1 diabetes mellitus(K)	45	5	0,0000	1.90E-03	IL1B,HLA-G,HLA-DRA,HLA-DRB1,HLA-DPB1
Graft-versus-host disease(K)	43	5	0,0000	1.89E-03	IL1B,HLA-G,HLA-DRA,HLA-DRB1,HLA-DPB1
mechanism of gene regulation by peroxisome proliferators via ppara(B)	40	5	0,0000	1.63E-03	CITED2,MYC,JUN,NFKBIA,DUSP1
cadmium induces dna synthesis and proliferation in macrophages(B)	15	4	0,0000	1.00E-03	FOS,MYC,JUN,NFKBIA
TCR signaling(R)	59	5	0,0001	3.60E-03	RPS27A,HLA-DRA,HLA-DRB1,NFKBIA,HLA-DPB1
t cell receptor signaling pathway(B)	51	5	0,0001	2.31E-03	FOS,JUN,HLA-DRA,HLA-DRB1,DUSP1
Intestinal immune network for IgA production(K)	49	5	0,0001	2.33E-03	CXCL12,CXCR4,HLA-DRA,HLA-DRB1,HLA-DPB1
IL12 signaling mediated by STAT4(N)	30	4	0,0001	3.21E-03	FOS,JUN,HLA-DRA,HLA-DRB1
HIF-1-alpha transcription factor network(N)	66	5	0,0002	5.69E-03	CXCL12,CITED2,FOS,CXCR4,JUN
Allograft rejection(K)	39	4	0,0003	6.89E-03	HLA-G,HLA-DRA,HLA-DRB1,HLA-DPB1
il 4 signaling pathway(B)	15	3	0,0003	6.24E-03	HLA-DRA,HLA-DRB1,IL2RG
activation of csf by camp-dependent protein kinase inhibits signaling through the t cell receptor(B)	42	4	0,0004	9.26E-03	CXCL12,CXCR4,HLA-DRA,HLA-DRB1
Hypoxic and oxygen homeostasis regulation of HIF-1-alpha(N)	80	5	0,0006	1.15E-02	CXCL12,CITED2,FOS,CXCR4,JUN
Calcineurin-regulated NFAT-dependent transcription in lymphocytes(N)	46	4	0,0006	1.12E-02	FOS,EGR1,JUN,IL8
IL6-mediated signaling events(N)	47	4	0,0007	1.16E-02	FOS,MYC,JUN,TIMP1
Autoimmune thyroid disease(K)	54	4	0,0011	1.68E-02	HLA-G,HLA-DRA,HLA-DRB1,HLA-DPB1
inhibition of cellular proliferation by gleevec(B)	24	3	0,0011	1.73E-02	FOS,MYC,JUN
role of mef2d in t-cell apoptosis(B)	26	3	0,0014	1.84E-02	HLA-DRA,HLA-DRB1,DUSP1
nfb activation by nontypeable hemophilus influenzae(B)	26	3	0,0014	1.84E-02	IL1B,IL8,DUSP1
T cell activation(P)	100	5	0,0015	1.92E-02	FOS,JUN,HLA-DRA,NFKBIA,CD74
IL1-mediated signaling events(N)	204	7	0,0016	1.90E-02	FOS,IL1B,EGR1,JUN,NFKBIA,IL8,DUSP1
Toll-like receptor signaling pathway(K)	102	5	0,0017	1.93E-02	FOS,IL1B,JUN,NFKBIA,IL8
bcr signaling pathway(B)	28	3	0,0017	1.98E-02	FOS,JUN,DUSP1

**Supplementary Table 6. Top 30 pathways associated with genes overexpressed in D30 PCs versus BMPCs**

Geneset	Number of protein in Geneset	Protein from network	P-value	FDR	Nodes
Glycican pathway(N)	472	28	0,0000	4.00E-04	SYK,ARF6,RAC1,TCF4,TCF3,TGFBR2,CTBP1,RBBP4,GNB1,RAB5A,GADD45A,YWHAZ,CYLD,CSNK1A1,BIRC2,CALM1,RPS6KB1,CBFB,PAG1,MAPKAPK2,UBE2D3,CDKN1A,PLCG2,CASP3,KPNB1,NUP153,IRF7,IRF4
Glycican 1 network(N)	436	26	0,0000	6.25E-04	SYK,ARF6,RAC1,TCF3,TGFBR2,CTBP1,RBBP4,RAB5A,GADD45A,YWHAZ,CYLD,CSNK1A1,BIRC2,CALM1,RPS6KB1,CBFB,PAG1,MAPKAPK2,UBE2D3,CDKN1A,PLCG2,CASP3,KPNB1,NUP153,IRF7,IRF4
IFN-gamma pathway(N)	373	24	0,0000	2.86E-04	RAC1,TCF3,TGFBR2,CTBP1,RBBP4,RAB5A,GADD45A,YWHAZ,CSNK1A1,STAT1,CALM1,RPS6KB1,CBFB,SOCS3,MAPKAPK2,CDKN1A,RAP1B,CASP3,KPNB1,CRKL,NUP153,IRF7,JAK1,IRF4
Regulation of cytoplasmic and nuclear SMAD2/3 signaling(N)	289	19	0,0000	2.08E-03	RAC1,TCF3,TGFBR2,CTBP1,RBBP4,RAB5A,GADD45A,YWHAZ,CSNK1A1,CALM1,RPS6KB1,CBFB,MAPKAPK2,CDKN1A,CASP3,KPNB1,NUP153,IRF7,IRF4
Regulation of nuclear SMAD2/3 signaling(N)	289	19	0,0000	2.08E-03	RAC1,TCF3,TGFBR2,CTBP1,RBBP4,RAB5A,GADD45A,YWHAZ,CSNK1A1,CALM1,RPS6KB1,CBFB,MAPKAPK2,CDKN1A,CASP3,KPNB1,NUP153,IRF7,IRF4
TGF-beta receptor signaling(N)	289	19	0,0000	2.08E-03	RAC1,TCF3,TGFBR2,CTBP1,RBBP4,RAB5A,GADD45A,YWHAZ,CSNK1A1,CALM1,RPS6KB1,CBFB,MAPKAPK2,CDKN1A,CASP3,KPNB1,NUP153,IRF7,IRF4
Apoptosis(R)	128	13	0,0000	6.00E-04	ROCK1,GZMB,BIRC2,PSMD14,FN1,PSMA1,PSMA4,PSMA7,PSMB8,PSMC2,CASP3,PSMD2,KPNB1
Host Interactions of HIV factors(R)	120	13	0,0000	3.33E-04	CUL5,RAC1,NUP50,PSMD14,HLA-A,PSMA1,PSMA4,PSMA7,PSMB8,PSMC2,PSMD2,KPNB1,NUP153
IL2-mediated signaling events(N)	111	13	0,0000	3.33E-04	SYK,RAC1,CNND2,CYLD,STAT1,BIRC2,STAT3,CALM1,RPS6KB1,SOCS3,MAPKAPK2,UBE2D3,JAK1
Signaling by Wnt(R)	58	9	0,0000	6.67E-04	PPP2R5C,CSNK1A1,PSMD14,PSMA1,PSMA4,PSMA7,PSMB8,PSMC2,PSMD2
Insulin Synthesis and Secretion(R)	49	9	0,0000	2.50E-04	SRP68,SSR1,SRP72,TRAM1,RPN1,SEC61B,SEC61A1,SPCS1,SPCS2
Protein export(K)	24	7	0,0000	5.00E-04	SRP68,SRP72,SEC61B,SEC61A1,SPCS1,SPCS2,SEC63
Signaling events mediated by PRL(N)	22	7	0,0000	1.00E-03	ROCK1,RAC1,PTP4A3,PTP4A2,ITGB1,RABGGTB,CDKN1A
Protein processing in endoplasmic reticulum(K)	167	13	0,0001	4.67E-03	SSR1,TRAM1,PDIA3,PDIA4,EDEM1,RPN1,SAR1B,SEC61B,DERL1,UBE2D3,SEC61A1,SEC24C,SEC63
APC/C-mediated degradation of cell cycle proteins(R)	75	9	0,0001	2.86E-03	CDC27,BUB3,PSMD14,PSMA1,PSMA4,PSMA7,PSMB8,PSMC2,PSMD2
IL2 signaling events mediated by PI3K(N)	65	8	0,0001	4.47E-03	SYK,RAC1,CYLD,BIRC2,CALM1,RPS6KB1,UBE2D3,JAK1
Proteasome(K)	48	7	0,0001	4.88E-03	PSMD14,PSMA1,PSMA4,PSMA7,PSMB8,PSMC2,PSMD2
iI22 soluble receptor signaling pathway(B)	10	4	0,0001	3.75E-03	IL10RA,STAT1,STAT3,SOCS3
how does salmonella hijack a cell(B)	10	4	0,0001	3.75E-03	RAC1,ACTR3,ACTR2,ARPC2
TNF receptor signaling pathway(N)	272	17	0,0002	5.70E-03	SYK,ARF6,RAC1,YWHAZ,CYLD,CSNK1A1,STAT1,BIRC2,CALM1,TOP1,MAPKAPK2,UBE2D3,CASP3,KPNB1,IRF4
Class I PI3K signaling events(N)	251	16	0,0002	6.45E-03	SFRS9,SFRS2,GTTF2B,POLR2B,SF3B1,TCEA1,PAPOLA,RBM5,SRRM1,METTL3,RNPS1,GTTF2A1
Formation and Maturation of mRNA Transcript(R)	152	12	0,0002	6.24E-03	CDC27,BUB3,PSMD14,PSMA1,PSMA4,PSMA7,PSMB8,CDKN1A,PSMC2,PSMD2
Cell Cycle Checkpoints(R)	110	10	0,0002	6.74E-03	SYK,RAC1,TCF3,RAB5A,YWHAZ,CYLD,CSNK1A1,BIRC2,CALM1,MAPKAPK2,UBE2D3,CASP3,KPNB1,IRF4
IL1-mediated signaling events(N)	204	14	0,0003	7.50E-03	RAC1,RAB5A,TFRC,HLA-A,HLA-C,HLA-E,SEC61B,ITGB1,SEC61A1,ATP6V1A,TAP2,TAP1
Phagosome(K)	157	12	0,0003	7.54E-03	SYK,GZMB,CYLD,STAT1,BIRC2,STAT3,STAT2,HLA-A,UBE2D3,JAK1
IL12-mediated signaling events(N)	112	10	0,0003	7.52E-03	PDIA4,KDEL2,PRKACB,SEC61B,SEC61A1,PLCG2,ATP6V1A
Vibrio cholerae infection(K)	55	7	0,0003	7.70E-03	SYK,ARF6,RAC1,GZMB,YWHAZ,CYLD,CSNK1A1,BIRC2,CALM1,RPS6KB1,TOP1,PAG1,UBE2D3,CDKN1A,PLCG2,CASP3,KPNB1,IRF4
TRAIL signaling pathway(N)	323	18	0,0004	9.58E-03	ODC1,AZIN1,PSMD14,PSMA1,PSMA4,PSMA7,PSMB8,PSMC2,PSMD2
Metabolism of amino acids(R)	97	9	0,0004	9.57E-03	RAC1,ACTR3,ACTR2,ARPC2
role of pi3k subunit p85 in regulation of actin organization and cell migration(B)	15	4	0,0004	9.79E-03	