

Unveiling the Role of Melatonin in Coronary Heart Disease: Identification and Experimental Validation of Novel Biomarkers

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Supplementary Table 1. everse Transcription-quantitative Polymerase Chain Reaction (RT-qPCR) primer sequence list

primer		sequences
MAP2K2	F	GGAGGTGGGAGAGAGTCAGG
MAP2K2	R	GCACGTGTTCCCAAGGTTTC
PGD	F	GCTCTTCGGTTCTGCTCTGT
PGD	R	TCGGCACCGTCTCAATTTCT
GAPDH	F	CGAAGGTGGAGTCAACGGATTT
GAPDH	R	ATGGGTGGAATCATATTGGAAC

Supplementary Table 2. Kyoto Encyclopedia of Genes and Genomes (KEGG) results of Results of PGD

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_GLYCOPHIN GOLIPID_BIOSYNTH ESIS_GLOBO_SERIE S	14	1.873 8734 4451 046	0.003790 7610677 7587	0.0276803 94132600 2	0.020744 4601336 992	GBGT1/NAGA/A4GALT/FUT1/ST3GAL2/HEXA/FUT2/B3GALNT1
KEGG_GLYCOSAMI NOGLYCAN_DEGRA DATION	20	1.717 4493 7871 716	0.019842 4536047 069	0.0864356 14432558 5	0.064777 2625324 094	GNS/HPSE/GUSB/GALNS/HGSNAT/SPAM1/SGSH/HEXA/NAGLU
KEGG_PRION_DISEA SES	34	1.938 0192 2945 174	0.000632 6948403 92926	0.0116415 85063229 8	0.008724 5288517 3404	NCAM1/MAP2K2/PRKACA/NOTCH1/STIP1/MAPK3/ELK1/C1QA/EGR1/C1QB/CCL5/C8A/IL1B/FYN/C6/NCAM2
KEGG_PENTOSE_PH OSPHATE_PATHWA Y	26	1.675 6187 3897 276	0.018728 3277015 459	0.0840490 80416693 7	0.062988 7273145 702	ALDOA/G6PD/PFKL/GPI/PGLS/FBP1/TALDO1/ALDOC/PFKM/PGD
KEGG_PORPHYRIN_ AND_CHLOROPHYL L_METABOLISM	28	1.646 8095 0427 713	0.009781 7187457 6359	0.0478212 92392048 5	0.035838 6115752 766	HMOX1/GUSB/BLVRB/ALAS2/CP/FECH
KEGG_LYSOSOME	116	1.998 1028 7534 172	1.108417 7754909 1e-06	6.7982956 8967758e- 05	5.094832 5820810 2e-05	CTSW/TPP1/CTSA/FUCA1/TCIRG1/LAMP1/GNS/GM2A/PSAP/ACP5/NPC1/IGF2R/ATP6V0D1/GAA/PPT1/GUSB/ATP6AP1/MAN2B1/ATP6V0C/GALNS/CTSH/CTSD/SORT1/NAGA/HGSNAT/GGA3/LAPTM5/SGSH/CD63/ARSA
KEGG_BLADDER_C ANCER	41	1.632 8847 9918 411	0.008128 0001228 9715	0.0427300 57788945	0.032023 0982285 572	MMP9/E2F2/THBS1/MAP2K2/CDKN1A/ARAF/ERBB2/MAPK3
KEGG_ARACHIDONI C_ACID_METABOLI	50	1.689 2921	0.004514 9040818	0.0307682 35224629	0.023058 5744532	PTGDS/ALOX12/PTGS1/GPX2/HPGDS/ALOX15/GPX1/PLA2G5/CYP4A11/GGT5/CYP2U1/PLA2G2D/TBXAS1/PLA2G1B

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
SM		0368762	749		402	
KEGG_GRAFT_VERSUS_HOST_DISEASE	32	1.48930029282357	0.0453596618067701	0.163650544557759	0.122644286825323	HLA-DQA1/PRF1/GZMB/KIR2DL1/HLA-DMA/IL1B/KIR2DL3/HLA-DPB1/KIR3DL1
KEGG_DILATED_CARDIOMYOPATHY	88	1.71234618872097	0.00085107848670528	0.0118262792465691	0.00886294382895056	ITGB3/TGFB1/ITGA2B/DES/PRKACA/DMD/ITGA3/TPM1/ADCY9/ITGB7/CACNG6/LMNA/CACNG4/ACTC1/CACNA1C/TGFB3/RYR2/DAG1/ADCY8/TPM3/ITGA5/ITGB5/ITGA8/ADCY5/CACNA1D
KEGG_VIRAL_MYOCARDITIS	64	1.61338250191992	0.00326211368082178	0.0260969094465742	0.0195577525028674	HLA-DQA1/PRF1/ITGAL/ITGB2/MYH9/RAC1/DMD/EIF4G1
KEGG_HYPERTROPHIC_CARDIOMYOPATHY_HCM	81	1.66137745253734	0.00149984435951331	0.017248210134403	0.0129262902037002	ITGB3/TGFB1/ITGA2B/DES/DMD/ACE/ITGA3/TPM1/ITGB7/CACNG6/LMNA/CACNG4/ACTC1/CACNA1C/PRKAB1/TGFB3/RYR2/DAG1/TPM3/ITGA5/ITGB5/ITGA8
KEGG_ARRHYTHMOGENIC_RIGHT_VENTRICULAR_CARDIOMYOPATHY_ARVC	72	1.63078709295058	0.00264906896995617	0.0240091341252004	0.0179931153913115	ITGB3/ITGA2B/ACTN4/DES/DMD/ACTN1/ITGA3/TCF7L1/ITGB7/CACNG6/LMNA/CACNG4/CTNNA1/CACNA1C/RYR2/DAG1/ITGA5/ITGB5/ITGA8/CACNA1D/CACNB3/PKP2
KEGG_REGULATION_OF_ACTIN_CYTOSKELETON	207	1.91650960967126	7.49077031380196e-08	6.89150868869781e-06	5.16468900583188e-06	ITGB3/WASF2/MYL9/DIAPH1/GSN/ARHGEF12/PPP1CA/VCL/ITGA2B/ITGAL/ITGB2/TIAM2/MYLK/ACTN4/MAP2K2/ARPC1B/PDGFC/CYFIP1/MYH9/PIP5K1C/RAC1/EZR/CD14/CYFIP2/ITGAM/ACTN1/ARAF/PXN/IQGAP1/ITGA3/CSK/FGD3/ITGB7/WAS/MAPK3/VAV2/APC2/ITGAX/SSH1/MSN/BAIAP2/PIK3R2/RRAS/EGFR/MYLK2/SSH3/PFN1/SICIN/FGF9/PAK4/PAK3/PIP4K2A/SLC9A1/FN1/ITGAD/PIP4K2B/PIK3CB/ITGA5/ITGB5/NCKAP1L/PIK3CD/ITGA8
KEGG_ADHERENS_J	66	1.582	0.005336	0.0334390	0.025060	WASF2/VCL/INSR/ACTN4/RAC1/ACTN1/ERBB2/IQGAP1/TCF7L1/PT

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
UNCTION		5728 3888 766	4461808 4437	07744257 9	1259410 628	PRJ/SRC/WAS/MAPK3/PTPN6/BAIAP2/EGFR/CTNNA1/CSNK2A1/CR EBBP/SNAI1/CSNK2B/PTPN1/FYN
KEGG_LEUKOCYTE _TRANSENDOTHELI AL_MIGRATION	111	1.730 3169 8282 755	0.000137 7545729 5828	0.0042244 73570720 58	0.003165 9384311 4643	MMP9/MYL9/GNAI2/VCL/ITGAL/ITGB2/ACTN4/RAC1/F11R/EZR/M APK12/ITGAM/ACTN1/PXN/CLDN5/CLDN10/VASP/VAV2/CD99/CYB A/MSN/CLDN11/PIK3R2/RASSF5/CTNNA1
KEGG_COMPLEMEN T_AND_COAGULATI ON_CASCADES	67	1.559 0134 5684 441	0.002971 5566362 106	0.0248530 19139215 9	0.018625 5463800 76	F13A1/SERPINA1/F5/C3AR1/VWF/F10/C1QA/C5AR1/F9/C2/TFPI/C4B PB/MASP1/C1QB/C8A/PLAUR/CFB
KEGG_ACUTE_MYE LOID_LEUKEMIA	56	1.526 4379 8085 096	0.020199 6272858 697	0.0864356 14432558 5	0.064777 2625324 094	STAT3/MAP2K2/CEBPA/ARAF/RELA/TCF7L1/PIM1/STAT5A/MAPK3 /PIK3R2/IKBKG/NFKB1/PIK3CB/AKT3/RARA/PIK3CD/PML/SPI1/PIK 3R3/EIF4EBP1/TCF7/GRB2/PPARD/AKT1/RPS6KB2/STAT5B/BAD
KEGG_BASAL_CELL _CARCINOMA	52	1.470 4293 1851 248	0.024046 2479130 959	0.0983224 35911325 7	0.073685 5784003 642	WNT9B/TCF7L1/WNT7B/APC2/WNT5B/FZD2/TP53/STK36/FZD3/WN T1/AXIN1/WNT10A/FZD4/DVL3/TCF7/WNT10B/SMO/DVL2/WNT7A/ SUFU/WNT2/BMP4/GLI3/WNT9A/WNT11/WNT4
KEGG_ECM_RECEPT OR_INTERACTION	81	1.561 4025 4097 867	0.003911 3600404 7612	0.0276803 94132600 2	0.020744 4601336 992	CD36/ITGB3/THBS1/ITGA2B/SPP1/ITGA3/ITGB7/COMP/COL4A1/VW F/GP9/HSPG2/DAG1/COL11A2/FN1/COL11A1/ITGA5/ITGB5/ITGA8/C OL6A1/TNN/GP1BA/LAMC2/THBS3/RELN/ITGA2/THBS4/IBSP
KEGG_CELL_ADHES ION_MOLECULES_C AMS	124	1.687 8521 4741 362	0.000255 1945776 81792	0.0058694 75286681 22	0.004398 7486416 2036	HLA-DQA1/GLG1/SELPLG/SELP/VCAN/NCAM1/ITGAL/ITGB2/F11R/ ITGAM/CLDN5/ITGB7/CLDN10/CD99/CD276/CD4/MPZL1/CLDN11/P VR/PECAM1/MADCAM1/ICAM3/HLA-DMA/HLA-DPB1/NRXN2/NCA M2/ICOSLG/ITGA8/NFASC/CD6/CLDN17/MPZ/CD34
KEGG_ENDOMETRI AL_CANCER	52	1.412 3583 1757	0.037863 7786376 196	0.1421823 52435143	0.106555 4243078 02	MAP2K2/ILK/ARAF/ERBB2/TCF7L1/MAPK3/APC2/ELK1/PIK3R2/EG FR/CTNNA1/TP53/PIK3CB/AKT3/AXIN1/PIK3CD

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_LEISHMANIA_INFECTION	65	114 1.402 5544 4931 744	0.028228 2040718 952	0.1129128 16287581	0.084620 0167830 269	HLA-DQA1/TGFB1/ITGB2/MARCKSL1/MAPK12/ITGAM/RELA/MAPK3/ELK1/CYBA/PTPN6/TRAF6/NFKB1/TGFB3/HLA-DMA/IL1B/NCF1/IL4/HLA-DPB1
KEGG_FOCAL_ADHESION	193	1.666 9278 6005 028	4.681037 6925675 5e-05	0.0017226 21870864 86	0.001290 9809215 2916	ITGB3/FLNA/MYL9/DIAPH1/THBS1/PPP1CA/VCL/ITGA2B/SPP1/MYLK/CCND3/ACTN4/PDGFC/ILK/PIP5K1C/RAC1/ZYX/ACTN1/PXN/ERBB2/ITGA3/SRC/ITGB7/VASP/MAPK3/VAV2/RAPGEF1/COMP/COLA1/ELK1/VWF/PIK3R2/EGFR/MYLK2/PAK4/PAK3/CAV3/COL11A2/TLN1/FN1/COL11A1/PIK3CB/AKT3/ITGA5/ITGB5/FYN/PARVG/SHC1/PIK3CD/ITGA8/BCL2
KEGG_HEMATOPOIETIC_CELL_LINEAGE	82	1.445 0398 7751 387	0.022252 2183422 532	0.0930547 31249422 5	0.069737 8134649 563	CD36/ITGB3/ANPEP/ITGA2B/IL5RA/CSF1R/CD14/ITGAM/ITGA3/CD9/IL1R1/EPOR/CD5/CD1A/CD4/IL6R/FLT3LG/IL3/GP9/CSF1/IL2RA/IL1B/IL4/CSF2/ITGA5/IL11
KEGG_AXON_GUIDANCE	128	1.525 0707 9887 286	0.001126 3031850 3194	0.0138159 85736391 8	0.010354 0854202 937	PLXNB2/GNAI2/ARHGEF12/NFATC2/RAC1/SEMA4A/DPYSL2/MAPK3/SEMA4D/ABLM3/PLXNB3/NTN4/CDK5/EFNB1/SEMA4G/SLIT1/EPHA1/ABLM1/ROBO2/PAK4/PAK3/CHP1/FES/UNC5C/EFNA1/NTNG1/EFNB3/SEMA6A/FYN/UNC5B/SEMA4C/NTN1/RGS3/EFNA5/NFATC1/NRP1/SEMA6D/EPHB6/RAC2/EPHA5/CHP2/PAK2/NFATC4/EPHA3/SEMA3G/SEMA3F/RHOA/SEMA4B/EPHA4/SRGAP1/EPHA8/PAK1PRF1/ITGAL/NFATC2/ITGB2/MAP2K2/GZMB/RAC1/SH2D1B/NCR3/ZAP70/ARAF/KIR2DL1/MICA/KLRC3/MAPK3/FCER1G/VAV2/PTPN6/PIK3R2/CD247/HGST/IFNA21/CHP1/PIK3CB/KIR2DL3/CSF2/KIR3DL1/FYN/CD244/SHC1/PIK3CD/IFNAR1/LCK/PIK3R3/PRKCG/TNFRSF10C/SYK/SHC2/NFATC1/IFNA14/IFNA17/IFNA10
KEGG_NATURAL_KILLER_CELL_MEDIATED_CYTOTOXICITY	122	1.512 3808 6218 715	0.002740 1729164 6309	0.0240091 34125200 4	0.017993 1153913 115	NFATC2/MAP2K2/RAC1/MAPK12/PXN/SH2D2A/SRC/MAPK3/PLA2G5/MAPKAPK3/PIK3R2/MAPKAPK2/PLA2G2D/CHP1/PIK3CB/AKT3/PLA2G1B/PIK3CD/HSPB1/PLA2G12A/PIK3R3/PRKCG/SHC2/NFATC1/RAC2/NOS3/AKT1/BAD/CHP2/PLA2G12B/NFATC4
KEGG_VEGF_SIGNALING_PATHWAY	71	1.333 7806 9346 499	0.049491 5041989 334	0.1718195 61747241	0.128766 3763666 39	

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_ENDOCYTOSIS	170	1.503 3190 8626 051	0.000899 8255948 47653	0.0118262 79246569 1	0.008862 9438289 5056	LDLR/SMAP2/IL2RB/SH3KBP1/PIP5K1C/CSF1R/CXCR1/PRKCI/ARRB1/ARFGAP2/EHD2/RAB11FIP3/DAB2/SRC/AP2B1/CHMP2A/ACAP1/RAB11FIP5/HGS/IL2RG/ASAP3/NTRK1/ARRB2/PSD3/EHD3/CBL/TRAF6/EHD4/RNF41/EGFR/RAB11B/EPN3/EHD1/ERBB4/SH3GL1/AP2M1/VPS37C/PLD2/DNM1/IL2RA/CHMP4C/VPS4A/VPS37B/ACAP3/PIP4K2B/SH3GL2/IQSEC1/AP2A1/MVB12A/PRKCZMYL9/ARHGEF12/PPP1CA/MYLK/MAP2K2/PRKACA/ARAF/ADCY9/MAPK3/KCNMB3/PLA2G5/PTGIR/MYLK2/CYP4A11/CACNA1C/CALCRL/CALML3/ADCY8/PLA2G2D/ARHGEF11/PLA2G1B/KCNMA1/KCNMB1/ADCY5/CALM1/AVPR1A/CACNA1D/PLA2G12A/PRKCG/KCNMB2/ADORA2B/PRKCD/NPR2/RAMP1/PLCB2
KEGG_VASCULAR_SMOOTH_MUSCLE_CONTRACTION	103	1.388 1859 7280 482	0.015184 4937142 066	0.0698486 71085350 3	0.052346 5441200 28	MYL9/CTTN/GNAI2/SPTAN1/ACTN4/LLGL1/MYH9/F11R/PRKCI/ACTN1/YBX3/SRC/CLDN5/CLDN10/PPP2R1A/CLDN11/HCLS1/RRAS/CTNNA1/CSNK2A1/EXOC4/CSNK2B/AKT3/EPB41L1/PRKCZ/TJP3/TJAP1/CLDN17/LLGL2/SYMPK/PRKCG/PPP2R2D
KEGG_TIGHT_JUNCTION	125	1.409 3546 5325 351	0.009876 1364722 7089	0.0478212 92392048 5	0.035838 6115752 766	PRKACA/GUCA1A/CNGB1/ARRB2/OR1A1/OR12D2/OR7A10/CALML3/OR1G1/OR51M1/CLCA4/OR52D1/OR10J1/OR12D3/CALM1/OR1D2/OR51E1/OR2K2/OR7E24/OR51B2/OR7D2/OR1J2/PDE1C/OR2H1/OR2B3/PRKG1/OR10H3/OR5I1/OR3A3/CAMK2B/OR5P3/OR2C3/OR8B8/OR5L2/OR4D1/OR10A4/PRKACG/OR51I1/OR1I1/GUCA1B/OR10C1/OR1A2/OR6A2/OR5K1/OR7A5/OR3A1/OR8D2/CALML6/CAMK2A
KEGG_OLFACTORY_TRANSDUCTION	108	1.313 5468 1155 632	0.044007 8044145 629	0.1619487 20245591	0.121368 8921749	PTAFR/ADORA3/PRL/CHRNE/UTS2R/P2RY4/C3AR1/GRPR/TSPO/OXTR/CHRNBI/GABBR2/GRM3/GABBR1/HTR1A/PTGIR/C5AR1/P2RX7/CALCRL/GRIA2/PTGER1/THRB/S1PR5/S1PR2/NPY1R/LEPR/GRM2/GRID2/NPBWR1/DRD5/NPFFR2/CNR2/GABRA1/S1PR4/HRH2/GABRB3/P2RX3/SSTR4/GLP1R/FPR1/P2RY2/GPR50/MC5R/GRIN2A/CHRM5/GRIN2D/AVPR1A/FPR3/GRID1/CHRNBI3/LHCGR/PRSS3/S1PR3/HTR4/GRM1/ADORA2B/GRIN1/ADCYAP1R1/NPFFR1/GABRA5/MCHR2/CHRNBI2/GALR2/MLNR/GLRA2/AGTR1/GRIA3/APLNR/SSTR3/CGA/P2RX2/PTGER3/HTR6/CHRM3/GHRHR/CHRNA4/HRH1/GABRR1/GRIN3
KEGG_NEUROACTIVE_LIGAND_RECEPTOR_INTERACTION	262	1.399 6376 4807 169	0.000600 3542031 29365	0.0116415 85063229 8	0.008724 5288517 3404	

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_CALCIIUM_SIGNALING_PATHWAY	172	1.348 8953 2006 452	0.006001 7721363 0014	0.0345101 89783725 8	0.025862 8996662 934	B/AGTR2/P2RX4/GPR35/P2RY6/GABRG3/GABRB2/GRIA1/TACR1/GLP2R/TAAR5/TAAR2/PLG/NMBR/PRLR/CRHR2/CHRM2/TAAR9/P2RY8/RXFP1/DRD2/CHRN4/GRIN3A/HRH4/TBXA2R/GIPR/CHRNA5/BR3/MC1R PTAFR/MYLK/PRKACA/ATP2A3/CACNA1I/ERBB2/GNA15/VDAC1/GRPR/ADCY9/SLC8A2/OXTR/CACNA1H/PHKA1/EGFR/MYLK2/CACNA1C/P2RX7/CALML3/ERBB4/PTGER1/RYR2/PLCD4/ATP2B4/ADCY8/DRD5/CHP1/HRH2/P2RX3/ATP2B3/ITPKB/GRIN2A/CHRM5/GRIN2D/CALM1/AVPR1A/CACNA1D/PLCD1/LHCGR/PRKCG/HTR4/GRM1/AORA2B/GRIN1/ATP2A1/PLCB2/VDAC2/PHKG2/AGTR1/PDE1C/NOS3/P2RX2/PTGER3/HTR6/CHRM3/HRH1/CHP2/ITPR3/P2RX4/CACNA1E/CAMK2B/PDGFRB/TACR1/PLCD3/CACNA1B STAT3/IL5RA/IL2RB/CCND3/MPL/IL10RA/SPRED2/PRL/JAK3/STAT6/PIM1/STAT5A/EPOR/CISH/IL2RG/PTPN6/PIAS3/IL12RB1/CBL/IL6R/PIK3R2/BCL2L1/IL3/LEPR/CREBBP/IL2RA/SPRY2/IFNA21/LIFR/IL4/PIK3CB/AKT3/CSF2/IL19/IL11/PIK3CD/IFNAR1/PIAS4/IFNW1/CTF1/PIK3R3/IFNA14/IFNA17/IFNA10/CSF3R TGFB1/PF4/IL5RA/IL2RB/MPL/PDGFC/CX3CR1/CSF1R/IL17RA/CXCR1/ACVR1B/IL10RA/AMHR2/PRL/IL1R1/EPOR/CXCL16/TNFSF13/TNFRSF1B/IL2RG/TNFRSF18/IL12RB1/IL6R/EGFR/FLT3LG/CCL23/LTA/INHBC/IL3/TGFB3/LEPR/CCR10/TNFRSF13B/CSF1/IL2RA/CCL24/TNFRSF4/PLEKHO2/IFNA21/CXCL5/CCL5/LIFR/IL1B/TNFRSF1A/IL4/RELT/NGFR/CSF2/IL19/IL11/IFNAR1/IFNW1/CD70/CXCR5/IL18/CTF1/BMP7/LTBR/TNFRSF10C/TNFRSF11A/IFNA14/IFNA17/IFNA10/CSF3R/TNFSF11/CCL22/PF4V1/TNFSF9/IL9/CD27/TNFRSF11B/KITLG/CCL19/CD40LG/CCR4 IDE/NDUFB8/SDHB/NDUFB10/NDUFA7/NDUFA9/NDUFC1/COX5A/COX7A2L/UQCRCF1/COX6A1/COX4I1/CACNA1F/CASP7/NDUFS3/FADD/NDUFA8/ITPR1/PPP3R1/MAPK1/NDUFB6/NDUFB5/ADAM10/ERN1/BID/NDUFB4/UQCRC11/NDUFV2/APAF1/ITPR2/NDUFA2/UQCRC2
KEGG_JAK_STAT_SIGNALING_PATHWAY	152	1.298 6545 1004 503	0.033748 8592063 652	0.1305022 58667345	0.097802 0359577 926	
KEGG_CYTOKINE_CYTOKINE_RECEPTOR_INTERACTION	250	1.189 9955 4858 851	0.049017 2839670 969	0.1718195 61747241	0.128766 3763666 39	
KEGG_ALZHEIMERS_DISEASE	138	-1.47 3624 352	0.007469 2145107 2856	0.0404216 31469825 1	0.030293 0990992 397	

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_HUNTINGTONS_DISEASE	152	-1.50 2151 596	0.005515 3649310 2858	0.0334390 0.07744257 9	0.025060 1259410 628	/PLCB1/CASP8/NDUFAB1/PPP3CC/CYCS/NDUFB2/UQCRQ/NDUFA1/FAS/NDUFA6/NAE1/SDHD/CDK5R1/NDUFS4/NDUFB1/CASP3/COX7A2/NDUFA4/COX7C/NDUFA5/COX6C/COX7B/NDUFB3/UQCRB NDUFB8/SDHB/VDAC3/NDUFB10/NDUFA7/NDUFA9/NDUFC1/COX5A/COX7A2L/UQCRFS1/COX6A1/COX4I1/SLC25A4/POLR2G/POLR2F/NDUFS3/NDUFA8/PPID/REST/CLTCL1/ITPR1/NDUFB6/POLR2C/NDUFB5/POLR2H/POLR2J/NDUFB4/TAF4B/UQCR11/NDUFV2/DCTN4/SOD1/CREB5/APAF1/NDUFA2/UQCRC2/PLCB1/TFAM/CASP8/NDUFA1/CYCS/CREB1/POLR2B/NDUFB2/IFT57/HDAC2/UQCRQ/NDUFA1/TBPL1/NDUFA6/SDHD/NDUFS4/NDUFB1/CASP3/COX7A2/NDUFA4/COX7C/NDUFA5/COX6C/COX7B/NDUFB3/POLR2K/UQCRB NUDT19/ACSL6/ABCD2/GNPAT/HSD17B4/ACOX1/PEX13/CROT/PEX11B/PEX12/SOD1/PXMP2/SCP2/PRDX1/ACSL1/PECR/SLC25A17/PEX1/PHYH/ACSL3/ACSL4/ABCD3/PEX3/PEX2/FAR1 CUL1/SMAD3/CCNE2/CDC7/RBL2/CDC26/CDC23/SKP2/YWHAZ/CCNH/SKP1/ORC5/CHEK1/CDK2/CDK7/DBF4/GADD45A/E2F5/YWHAQ/STAG1/MDM2/SMAD4/MCM6/ANAPC4/CDC14A/ORC6/ATR/ORC3/P CNA/RAD21/E2F3/BUB1B/GADD45B/CDK1/ATM/BUB3/HDAC2/TFDP1/TTK/SMC3/CCNA2/RB1/CDKN1B/ORC4/MAD2L1/STAG2/RBX1/ANAPC10 CDC26/CDC23/SKP2/SOCS1/WWP1/UBE2S/UBE4A/SKP1/SIAH1/CUL4B/PIAS1/UBE2Q2/RCHY1/UBE2G1/MDM2/UBE2D2/MID1/TRIM37/ANAPC4/RNF7/UBE2D1/UBE2D3/KLHL9/CUL4A/SMURF2/UBE2A/CUL2/CUL3/UBA6/FBXW7/UBE2J1/FANCL/UBA2/UBE2W/FBXO4/HERC4/CUL5/UBE2E1/BIRC3/RBX1/UBA3/BIRC2/ANAPC10 SESN3/CCNE2/PPM1D/CHEK1/SIAH1/CDK2/GADD45A/RCHY1/BID/MDM2/APAF1/ATR/CCNG1/CASP8/GADD45B/CDK1/ATM/PERP/CYCS/SESN1/RRM2/FAS/RRM2B/CCNG2/IGFBP3/CASP3/PMAIP1 POLR2G/POLR2F/POLR3B/POLR3GL/POLR3H/PRIM1/POLR3K/RRM1/POLR1D/POLR2C/POLR2H/NME7/POLR2J/DPYD/POLE4/NT5C2/UP
KEGG_PEROXISOME	77	-1.43 0287 202	0.034044 0674784 377	0.1305022 58667345	0.097802 0359577 926	
KEGG_CELL_CYCLE	122	-1.51 9537 281	0.004959 5642697 7998	0.0325914 22344268 4	0.024424 9217797 435	
KEGG_UBIQUITIN_MEDIATED_PROTEOLYSIS	124	-1.58 5838 664	0.001896 2233040 7682	0.0205238 28702949 1	0.015381 1302064 435	
KEGG_P53_SIGNALING_PATHWAY	65	-1.50 6175 1	0.011385 2747562 133	0.0537151 42439570 6	0.040255 6273431 565	
KEGG_PYRIMIDINE_METABOLISM	91	-1.60 2418	0.005633 7458699	0.0334390 0.07744257	0.025060 1259410	

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
		448	5649	9	628	RT/ENTPD4/POLE2/TYMP/NT5C3A/POLR3F/TYMS/NT5E/AK3/POLR2B/RRM2/PNP/NME1/DUT/RRM2B/DCK/CMPK1/PNPT1/POLR2K/CM PK2
KEGG_OXIDATIVE_ PHOSPHORYLATION	95	-1.61 7280 967	0.002726 3941086 7484	0.0240091 34125200 4	0.017993 1153913 115	NDUFB8/SDHB/NDUFB10/NDUFA7/NDUFA9/NDUFC1/COX5A/ATP6 V1C2/COX7A2L/UQCRFS1/COX6A1/COX4I1/NDUFS3/NDUFA8/ATP6 V0A2/ATP6V1E1/NDUFB6/NDUFB5/NDUFB4/UQCR11/NDUFV2/ATP 6V0E1/NDUFA2/UQCRC2/NDUFAB1/ATP6V1D/PPA1/NDUFB2/COX1 1/UQCRQ/PPA2/NDUFA1/ATP6V1G1/NDUFA6/SDHD/NDUFS4/NDUF B1/COX7A2/NDUFA4/COX7C/NDUFA5/COX6C/COX7B/NDUFB3/UQ CRB
KEGG_RIG_I LIKE_ RECEPTOR SIGNALI NG_PATHWAY	66	-1.61 9213 749	0.003772 9584390 9773	0.0276803 94132600 2	0.020744 4601336 992	CXCL10/IRF7/TBK1/TRIM25/ATG12/MAPK8/CHUK/CASP8/CYLD/M AP3K7/CXCL8/ATG5/DDX3X/SIKE1/AZI2/TANK/IFIH1/ISG15/DDX3 Y
KEGG_PARKINSONS _DISEASE	93	-1.81 4062 324	0.000253 5260536 19089	0.0058694 75286681 22	0.004398 7486416 2036	NDUFB8/SDHB/VDAC3/NDUFB10/NDUFA7/HTRA2/NDUFA9/NDUF C1/COX5A/COX7A2L/UQCRFS1/COX6A1/COX4I1/SLC25A4/NDUFS3 /NDUFA8/PPID/NDUFB6/NDUFB5/UBE2G1/NDUFB4/UQCR11/NDUF V2/PARK7/APAF1/NDUFA2/UQCRC2/LRRK2/NDUFAB1/CYCS/UBE2 J1/NDUFB2/UQCRQ/NDUFA1/NDUFA6/SDHD/NDUFS4/NDUFB1/CA SP3/COX7A2/NDUFA4/COX7C/NDUFA5/COX6C/COX7B/NDUFB3/U QCRB
KEGG_NUCLEOTIDE _EXCISION_REPAIR	43	-1.60 7844 734	0.008890 1353650 9224	0.0454384 69643804 8	0.034052 8576850 024	POLD1/GTF2H3/ERCC5/CETN2/GTF2H1/ERCC4/ERCC6/RPA4/RFC2/ XPA/CCNH/RFC5/GTF2H5/RFC4/CUL4B/CDK7/RPA2/POLE4/RFC3/LI G1/POLE2/PCNA/CUL4A/RPA3/RBX1
KEGG_SPLICEOSOM E	115	-1.92 2267 428	4.284835 0476279 2e-06	0.0001971 02412190 884	0.000147 7140503 2612	NCBP1/SNRPB2/DHX16/BUD31/CDC40/PRPF38A/NCBP2/PPIL1/CRN KL1/HNRNPA1/PRPF18/SRSF5/LSM6/HNRNPC/TCERG1/HSPA6/LSM 3/SLU7/MAGOHB/PRPF40A/CDC5L/SNRPA1/SNW1/THOC1/CWC15/ DDX5/SNRPF/SRSF1/TRA2A/PHF5A/TRA2B/HNRNPA3/DHX15/SRSF 8/SRSF6/SRSF3/LSM5/BCAS2/PRPF38B/PLRG1/SRSF10/U2SURP/LSM 7/SMNDC1/RBM25/SRSF7/SNRPD2/SF3B1/SNRPE/SF3B6/LSM8/SNRP G

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_RNA_DEGRADATION	51	-1.76 6188 8	0.000867 0832768 94772	0.0118262 79246569 1	0.008862 9438289 5056	PAPOLA/XRN1/LSM6/CNOT6/LSM3/EXOSC1/EXOSC3/CNOT7/PAPOLG/LSM5/LSM1/HSPD1/EXOSC8/C1D/LSM7/DCP2/CNOT8/PNPT1/DIS3/LSM8
KEGG_DNA_REPLICATION	36	-1.68 0283 54	0.006790 5050125 7558	0.0378622 09767088 1	0.028374 9970222 457	POLE3/PRIM2/POLD1/MCM3/FEN1/RNASEH2C/PRIM1/RPA4/RFC2/RFC5/RFC4/SSBP1/RPA2/MCM6/POLE4/RFC3/LIG1/POLE2/PCNA/DNA2/RPA3
KEGG_MISMATCH_REPAIR	22	-1.76 2987 479	0.002689 5053131 5025	0.0240091 34125200 4	0.017993 1153913 115	RPA4/RFC2/RFC5/RFC4/SSBP1/RPA2/MSH6/RFC3/LIG1/PCNA/RPA3/MSH2
KEGG_RIBOSOME	69	-2.24 7776 545	3.200574 6333050 4e-09	5.8890573 2528128e- 07	4.413423 9680311 6e-07	RPL11/RPL27/RPL3/FAU/RPL36/RPS9/RPS25/RPL22/RPL15/RPS17/RPL6/RPL9/RPL36AL/RPS21/RPL24/RPL36A/MRPL13/RPL35A/RPL35/RPLS7/RPL26L1/RPL34/RPL31/RPS24/RSL24D1/RPS27L/RPL22L1/RPS4Y1
KEGG_PROTEIN_EXPORT	22	-1.85 6264 881	0.000734 2714896 52679	0.0118262 79246569 1	0.008862 9438289 5056	SEC63/SRPRB/SPCS2/SEC62/SEC61G/SRP54/SEC11A/SRP14/SRP72/SEC61B/SRP19/SRP9/SEC11C/IMMP1L

Supplementary Table 3. KEGG results of MAP2K2

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_LEISHMANIA_INFECTION	65	2.559 7646 6461 823	1e-10	3.7951549 4898615e-09	2.518523 8791899 e-09	CR1/TLR2/FCGR2A/ITGB2/NCF2/PTPN6/NCF4/MYD88/JAK1/IL1B/STAT1/MARCKSL1/IFNGR2/PRKCB/MAPK14/RELA/NFKBIA/NFKB1/TGFB1/ITGAM/TLR4/MAPK1/HLA-DQB1/HLA-DQA1/CYBA/NCF1/HLA-DRA/IL1A/HLA-DPA1/FOS/IFNGR1/TAB2/IRAK1 LYN/SYK/PTPN6/GRB2/SOS1/PIK3CD/PPP3CA/GSK3B/PLCG2/PIK3AP1/PRKCB/RELA/NFKBIA/NFKB1/VAV1/AKT1/RAC1/BCL10/MAP2K1/SOS2/PIK3R5/CR2/IKBKB/PIK3CG/PIK3CA/LILRB3/RAC2/PIK3CB/MAPK1/DAPP1/VAV2/BLNK/FOS/NFAT5/IFITM1/NFATC2/KRAS/NFATC1/CD22/BTK/CHP1/CD19/FCGR2B/CD81/INPP5D
KEGG_B_CELL_RECEPTOR_SIGNALING_PATHWAY	75	2.606 3694 1840 587	1e-10	3.7951549 4898615e-09	2.518523 8791899 e-09	STAT3/RARA/GRB2/SOS1/PIK3CD/STAT5B/TCF7L2/MYC/RELA/NFKB1/AKT1/MAP2K1/SOS2/TCF7/LEF1/PIK3R5/IKBKB/PIK3CG/PIM2/PIK3CA/PIK3CB/MAPK1/STAT5A/PML/CEBPA/BRAF/KRAS/SPI1
KEGG_ACUTE_MYELOID_LEUKEMIA	56	2.412 0780 6202 822	1.583948 9802618 9e-10	4.7258793 0996488e-09	3.136167 0478027 8e-09	LYN/HCK/MARCKS/FCGR2A/ASAP1/SYK/LIMK2/PIK3CD/ARPC1B/PLD1/PLCG2/VASP/PRKCD/MARCKSL1/PRKCB/DOCK2/VAV1/AKT1/GSN/RAC1/MAP2K1/GAB2/PAK1/PIK3R5/PIK3CG/PIK3CA/RAC2/PIK3CB/ASAP2/MAPK1/CRKL/NCF1/ARPC5/VAV2/ARPC4/PIKFYVE/WAS/WASF2/PRKCA/DNM2/FCGR2B/PTPRC/ARPC2/PRKCE/INPP5D/DNM3
KEGG_FC_GAMMA_R_MEDIATED_PHAGOCYTOSIS	89	2.550 8208 1810 533	1e-10	3.7951549 4898615e-09	2.518523 8791899 e-09	NOTCH2/GRB2/SOS1/ETS2/MAP2K1/SOS2/ETV6/MAPK1/NOTCH1/KRAS
KEGG_DORSO_VENTRAL_AXIS_FORMATION	23	1.973 8394 1808 659	0.000219 3412724 27928	0.0010348 40875044 58	0.000686 7365074 66657	GRB2/SOS1/PTEN/PIK3CD/GSK3B/TCF7L2/MYC/AKT1/MAP2K1/SOS2/TCF7/LEF1/PIK3R5/CTNNA1/PIK3CG/PIK3CA/PIK3CB/MAPK1/ERBB2/TP53/BRAF/APC/KRAS
KEGG_ENDOMETRIAL_CANCER	52	2.320 0942 2289 436	4.101570 7765152 4e-09	6.6682049 6152995e-08	4.425124 5740130 1e-08	CHST11/CHST13/PAPSS1
KEGG_SULFUR_METABOLISM	11	1.596 8684 4426	0.029555 4178053 448	0.0877128 52841668 3	0.058207 6140139 218	

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
		069				
KEGG_GLYCOSAMINOGLYCAN_BIOSYNTHESIS_CHONDROITIN_SULFATE	22	1.87394186259137	0.000811529555195618	0.00331825418124431	0.00220204510883489	CHSY1/CHST11/CHST15/CHST7/CHST13/XYL1/CSGALNACT1
KEGG_PATHOGENIC_ESCHERICHIA_COLI_INFECTION	50	2.21533823342125	6.86236251646878e-08	7.0148594612792e-07	4.65516989421274e-07	TUBB2A/TUBB1/TUBA1A/ARPC1B/TUBA1B/HCLS1/TLR5/TUBA1C/CD14/RHOA/TUBB3/YWHAZ/ARHGEF2/TLR4/TUBA4A/ARPC5/YWHAQ/CTTN/ARPC4/WAS/PRKCA/ARPC2/NCK2
KEGG_COLORECTAL_CANCER	62	2.20523233277663	3.94793321855032e-08	4.64577920975858e-07	3.083011374897e-07	PIK3CD/GSK3B/TCF7L2/TGFB2/MYC/TGFB1/AKT1/RAC1/RHOA/MAP2K1/TCF7/LEF1/PIK3R5/SMAD2/PIK3CG/PIK3CA/RAC2/PIK3CB/MAPK1/BAX/TP53/FOS/BRAF/APC/BCL2/MSH6/KRAS
KEGG_THYROID_CANCER	29	1.91995170232534	0.000585783383963353	0.00250660796858737	0.00166342405238064	TCF7L2/MYC/TPM3/MAP2K1/TPR/TCF7/LEF1/RXRA/MAPK1/TP53/CDC6/BRAF/KRAS/TFG
KEGG_NON_SMALL_CELL_LUNG_CANCER	54	2.10403865747037	2.68054421411471e-06	1.97288054158843e-05	1.3092342266834e-05	GRB2/SOS1/PIK3CD/RASSF5/PLCG2/TGFA/PRKCB/STK4/E2F3/AKT1/MAP2K1/SOS2/RXRA/PIK3R5/PIK3CG/PIK3CA/PIK3CB/MAPK1/ERBB2/TP53/BRAF/KRAS/PRKCA
KEGG_APOPTOSIS	87	2.21528729839158	3.09245243234376e-09	5.69011247551253e-08	3.77604718054607e-08	TNFRSF10C/CSF2RB/MYD88/PIK3CD/PPP3CA/IL1B/TNFRSF1A/XIAP/RELA/NFKBIA/NFKB1/AKT1/PRKACA/BID/CFLAR/FADD/PIK3R5/IKBKB/IL1RAP/PIK3CG/PIK3CA/PIK3CB/TNFSF10/PRKAR1A/BAX/APAF1/IL1A/TP53/BCL2/IRAK1/TNFRSF10A/CHP1/AIFM1/IL1R1/FAS/IRAK3/CAPN2/DFFA/PRKAR2B/PRKX
KEGG_CHRONIC_MYELOID_LEUKEMIA	72	2.14534004260627	9.41877562536919e-08	9.12134060562069e-07	6.05306355979405e-07	GRB2/SOS1/PIK3CD/CBL/STAT5B/TGFB2/MYC/E2F3/RELA/NFKBIA/NFKB1/TGFB1/AKT1/MAP2K1/GAB2/SOS2/PIK3R5/IKBKB/PIK3CG/PIK3CA/CTBP2/PIK3CB/MAPK1/CRKL/STAT5A/CDKN1A/TP53/CTBP1/BRAF/KRAS/BCR/CDKN1B

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_PANCREATIC_CANCER	69	2.119 9804 1820 802	5.041305 8539559 5e-07	4.4171441 767995e-06	2.931285 6093177 5e-06	STAT3/JAK1/PIK3CD/PLD1/TGFA/TGFBR2/STAT1/E2F3/RELA/NFKB1/TGFB1/AKT1/RALB/RAC1/MAP2K1/PIK3R5/SMAD2/IKBKB/PIK3CG/PIK3CA/RAC2/PIK3CB/MAPK1/ERBB2/TP53/BRAF/ARHGEF6/KRAS
KEGG_TOLL_LIKE_RECEPTOR_SIGNALING_PATHWAY	97	2.188 6875 2066 637	4.348829 3227369 3e-09	6.6682049 6152995e-08	4.425124 5740130 1e-08	TLR2/TLR1/MYD88/TLR8/PIK3CD/IRF5/IFNAR1/IL1B/STAT1/TLR5/PP1/IRF7/MAPK14/RELA/NFKBIA/NFKB1/CD14/AKT1/RAC1/MAP2K1/FADD/TLR4/MAP2K4/PIK3R5/IKBKB/PIK3CG/PIK3CA/IFNAR2/PIK3CB/MAPK1
KEGG_ADHERENS_JUNCTION	66	2.089 2926 6102 976	1.687027 0884737 7e-06	1.2933874 3449656e-05	8.583120 2746911 2e-06	ACTN1/IQGAP1/PTPRJ/PTPN6/CREBBP/TCF7L2/TGFBR2/ACTN4/IGF1R/RAC1/RHOA/VCL/TCF7/LEF1/CTNNA1/SMAD2/RAC2/MAPK1/ERBB2/CSNK2B/WAS/WASF2/EP300
KEGG_NOTCH_SIGNALING_PATHWAY	46	1.960 3742 0211 961	8.284036 1857067 7e-05	0.0004483 12546520 602	0.000297 5071819 01543	DTX3L/NOTCH2/RBPJ/MAML3/CREBBP/MAML2/NUMB/CTBP2/NOTCH1/LFNG/PSENEN/APH1A/MFNG/CTBP1/MAML1/ADAM17/EP300/NCOR2/NUMBL/NCSTN/DVL3/CIR1/HDAC1
KEGG_NATURAL_KILLER_CELL_MEDIATED_CYTOTOXICITY	122	2.216 7642 7721 243	1.797888 8679214 2e-10	4.7258793 0996488e-09	3.136167 0478027 8e-09	TNFRSF10C/ITGB2/SYK/PTPN6/GRB2/SOS1/PIK3CD/PPP3CA/IFNAR1/LCP2/PLCG2/IFNGR2/PRKCB/KLRC3/VAV1/FCER1G/BID/RAC1/MAP2K1/PAK1/SOS2/MICA/SH2D1B/PIK3R5/TYROBP/PIK3CG/PIK3CA/RAC2/IFNAR2/PRF1/PIK3CB/MAPK1/TNFSF10/VAV2/ICAM2/MICB/NFAT5/IFNGR1/BRAF/NFATC2/KRAS/TNFRSF10A/CD247/PRKCA/NFATC1/CHP1/FAS/LCK/HLA-E
KEGG_LEUKOCYTE_TRANSENDOTHELIAL_MIGRATION	111	2.164 3449 9427 074	2.034875 4035788 8e-09	4.1601897 139835e-08	2.760766 6294169 7e-08	ACTN1/ITGB2/NCF2/NCF4/PIK3CD/PECAM1/RASSF5/PLCG2/VASP/TXK/F11R/PXN/MMP9/MSN/PRKCB/ACTN4/MAPK14/VAV1/ITGAM/RAC1/RHOA/GNAI2/VCL/PIK3R5/CTNNA1/PIK3CG/PIK3CA/RAC2/PIK3CB/SIPA1/CYBB/CYBA/NCF1/VAV2
KEGG_CHEMOKINE_SIGNALING_PATHWAY	179	2.308 6925 1168 94	1e-10	3.7951549 4898615e-09	2.518523 8791899 e-09	LYN/HCK/CXCL5/CXCR1/STAT3/CCR1/CXCR2/PF4V1/GRB2/SOS1/PIK3CD/STAT2/GSK3B/GNG5/FGR/STAT5B/CCR3/PXN/PRKCD/STAT1/JAK3/PRKCB/GNB2/DOCK2/RELA/NFKBIA/CX3CR1/NFKB1/VAV1/AKT1/GNB1/PRKACA/RAC1/RHOA/CCR6/MAP2K1/ARRB2/GNAI2/

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_FC_EPSILON_RI_SIGNALING_PATHWAY	73	2.04030807405263	3.06398139746563e-06	2.16835606589875e-05	1.43895482634013e-05	CCR7/ELMO1/PAK1/PREX1/SOS2/PIK3R5/IKBKB/GNB4/PIK3CG/PIK3CA/RAC2/TIAM1/PIK3CB/MAPK1/CRKL/NCF1/VAV2/TIAM2/PF4/CSK/BRAF/WAS/CXCR4/KRAS/RAP1A LYN/SYK/GRB2/SOS1/PIK3CD/LCP2/PLCG2/PRKCD/PRKCB/MAPK14/VAV1/AKT1/FCER1G/RAC1/MAP2K1/GAB2/MAP2K4/SOS2/PIK3R5/PIK3CG/PIK3CA/RAC2/PIK3CB/MAPK1/VAV2/KRAS/PRKCA/BTK/PRKCE/INPP5D
KEGG_ERBB_SIGNALING_PATHWAY	86	2.06913712830796	2.64083050691508e-07	2.42956406636188e-06	1.61229652001131e-06	PAK2/GRB2/SOS1/PIK3CD/GSK3B/CBL/STAT5B/PLCG2/TGFA/MYC/PRKCB/AKT1/MAP2K1/CAMK2G/PAK1/MAP2K4/SOS2/PIK3R5/PIK3CG/PIK3CA/PIK3CB/MAPK1/ERBB2/CRKL/STAT5A/CDKN1A/BRAF/KRAS/ABL2/PRKCA
KEGG_PROSTATE_CANCER	89	2.03281839091233	9.18454911479186e-07	7.34763929183349e-06	4.87600776803595e-06	GRB2/SOS1/PTEN/PIK3CD/GSK3B/CREBBP/TGFA/TCF7L2/E2F3/IGF1R/RELA/NFKBIA/NFKB1/AKT1/MAP2K1/FOXO1/SOS2/TCF7/LEF1/PIK3R5/IKBKB/CREB5/PIK3CG/PIK3CA/PIK3CB/MAPK1/ERBB2/CDK2/CDKN1A/TP53/BRAF/BCL2/KRAS/EP300/CDKN1B/HSP90AB1
KEGG_STARCH_AND_SUCROSE_METABOLISM	34	1.75089011232796	0.00425849845438063	0.0153639944236478	0.0101957857731301	MGAM/PYGL/HK2/PGM1/GPI/GUSB/UXS1/HK3/GAA/GANC/GBE1/UGP2
KEGG_EPITHELIAL_CELL_SIGNALING_IN_HELICOBACTER_PYLORI_INFECTION	67	1.95026120367092	2.7069970066497e-05	0.000164716880868672	0.000109308685244656	LYN/CXCR1/CXCR2/ATP6V1B2/PLCG2/F11R/ATP6V0D1/MAPK14/RELA/NFKBIA/NFKB1/ATP6V1A/RAC1/PAK1/ATP6V0B/MAP2K4/ATP6V1C1/IKBKB/ATP6V1H/CSK/ATP6AP1/ADAM17
KEGG_NEUROTROPIN_SIGNALING_PATHWAY	122	2.07095755652978	2.41534954119133e-08	3.17445939699431e-07	2.10662065246762e-07	GRB2/SOS1/PIK3CD/GSK3B/PLCG2/PRKCD/MAPK14/RELA/NFKBIA/NFKB1/AKT1/RAC1/MAP3K1/RHOA/MAP2K1/YWHAZ/MAP3K5/CAMK2G/YWHAB/SOS2/PIK3R5/IKBKB/PIK3CG/PIK3CA/PIK3CB/MAPK1/CRKL/MAP3K3/YWHAH/BAX/YWHAQ/RPS6KA1/TP53/RPS6KA5/CSK/BRAF/BCL2/KRAS/RAP1A/IRAK1/MAGED1/SH2B2/RPS6KA3/CAMK4/IRAK3/KIDINS220/RIPK2/ZNF274/MAPKAPK2/YWHAG/NFKBIE/MAP2K5

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_RENAL_CELL_CARCINOMA	66	1.908 6776 1498 133	6.229565 7600821 8e-05	0.0003473 45484804 582	0.000230 5038686 3462	EGLN1/PAK2/GRB2/SOS1/PIK3CD/CREBBP/TGFA/TGFB1/AKT1/RAC1/MAP2K1/PAK1/SOS2/PIK3R5/HIF1A/PIK3CG/PIK3CA/PIK3CB/MAPK1/CRKL/BRAF/KRAS/RAP1A/EP300
KEGG_GALACTOSE_METABOLISM	24	1.578 6280 0295 123	0.039393 0112568 224	0.1076795 28807672	0.071457 8108792 331	MGAM/HK2/PGM1/HK3/GAA/B4GALT1/GANC/GALK2/UGP2/PFKM
KEGG_ADIPOCYTOKINE_SIGNALING_PATHWAY	65	1.881 3505 8369 243	5.757326 3091592 2e-05	0.0003310 46262776 655	0.000219 6874512 70549	CD36/ACSL1/STAT3/CAMKK2/SOCS3/TNFRSF1A/RELA/NFKBIA/NFKB1/AKT1/RXRA/TNFRSF1B/IKBKB
KEGG_GLIOMA	63	1.840 9578 5522 943	0.000393 7764889 83769	0.0017671 92048122 28	0.001172 7361417 7451	GRB2/SOS1/PTEN/PIK3CD/PLCG2/TGFA/PRKCB/E2F3/IGF1R/AKT1/MAP2K1/CAMK2G/SOS2/PIK3R5/PIK3CG/PIK3CA/PIK3CB/MAPK1/CDKN1A/TP53/BRAF/KRAS/PRKCA
KEGG_CITRATE_CYCLE_TCA_CYCLE	30	1.619 4880 4509 267	0.013073 6769718 601	0.0407721 45132580 8	0.027057 0299506 829	ACLY/CS/IDH3G/DLST/IDH3B/OGDH/ACO1/MDH2/PDHB/DLAT/SDHA/PCK2/SDHB/FH/SUCLG2/IDH3A/PC/SDHC/ACO2/SDHD/IDH1
KEGG_T_CELL_RECEPTOR_SIGNALING_PATHWAY	107	1.914 3703 2044 385	4.083613 8819217 1e-06	2.7829072 3805035e-05	1.846780 5469899 3e-05	PTPN6/PAK2/GRB2/SOS1/PIK3CD/PPP3CA/GSK3B/CBL/LCP2/MAPK14/RELA/NFKBIA/NFKB1/VAV1/AKT1/BCL10/RHOA/MAP2K1/PAK1/SOS2/PIK3R5/IKBKB/PIK3CG/PIK3CA/PIK3CB/MAPK1/VAV2/FOS/NFAT5/NFATC2/KRAS/CD247/NFATC1/CHP1/PTPRC/NCK2/LCK/CXCR1/ASAP1/CXCR2/SMAP2/RAB11FIP1/CBL/RAB31/SH3GLB1/PLD1/GIT2/CHMP2A/SH3KBP1/IGF1R/ARAP3/PRKCI/VPS37C/CLTC/ARRB2/IQSEC1/HSPA6/ARAP1/IL2RB/VPS37B/ACAP2/ASAP2/RAB11FIP3/CHMP4B/IL2RG/SMAP1/PSD4/PDCD6IP/ARFGAP3/ITCH/CSF1R/EPS15/PIKFYVE/RAB5B/EHD1/LDLR/CXCR4/VPS4B/RAB5A/ACAP1/RNF41/RAB11A/RAB5C/DNM2/RAB11FIP4/GRK5/STAM/HLA-E/DN
KEGG_ENDOCYTOSIS	170	2.036 3260 9930 393	7.705070 3131136e-09	1.0905637 9816377e-07	7.237151 0633293 7e-08	

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_JAK_STAT_SIGNALING_PATHWAY	152	1.98374883203557	4.29229600901608e-08	4.64577920975858e-07	3.083011374897e-07	M3/TSG101/HSPA1L/SMURF1/RUFY1 CSF2RB/STAT3/PTPN6/SOCS3/GRB2/SOS1/CSF2RA/JAK1/PIK3CD/STAT2/IL13RA1/IL4R/CREBBP/CBL/IRF9/IFNAR1/IL6R/STAT5B/STAT1/MYC/IFNGR2/JAK3/STAT6/AKT1/IL5RA/CISH/SOS2/PIK3R5/IL10RB/IL2RB/PIK3CG/PIK3CA/IFNAR2/PIK3CB/IL12RB1/IL2RG/STAT5A/IFNGR1/CCND3/SPRY2/EP300/PIAS1/SOCS2/JAK2/TYK2/CCND2/STATAM/SOCS7/SOCS1/IL6ST/PIM1/CSF3R
KEGG_RIG_I LIKE_RECEPTOR_SIGNALING_PATHWAY	66	1.7775217005544	0.000713494319485485	0.00298370351784839	0.00198003208278269	ISG15/DDX3Y/TRIM25/IFIH1/IRF7/MAPK14/RELA/NFKBIA/NFKB1/MAP3K1/FADD/IKBKB
KEGG_INSULIN_SIGNALING_PATHWAY	133	1.92905003673143	6.12648451405005e-07	5.1239688662964e-06	3.40034547191295e-06	PPP1R3B/PYGL/SOCS3/GRB2/HK2/SOS1/PIK3CD/GSK3B/CBL/FLOT1/FLOT2/MKNK2/AKT1/PRKACA/PRKCI/MAP2K1/PPP1R3D/FOXO1/SOS2/PPP1CA/PIK3R5/IKBKB/PIK3CG/PIK3CA/PIK3CB/MAPK1/CRKL/PRKAR1A/PRKAG2/BRAF/EIF4E2/KRAS/RHOQ/SOCS2/MKNK1/SH2B2/HK3/INPP5D/PTPN1/SOCS1/PHKA2/PRKAR2B/PRKX/SREBF1/IGF2R/PPT1/LIPA/ARSB/ATP6V0D1/AP1M1/CLTC/IDS/LAMP2/SLC11A1/LAMP1/LAMP3/ATP6V0B/AP1G1/GM2A/CTS/CTSS/LAPTM5/P SAP/PPP1/GUSB/FUCA1/MANBA/GNS/ATP6V1H/ASA1/CTSD/ATP6AP1/CTSA/ARSG/ENTPD4/SCARB2/SUMF1/CD63/AP3M1/AP3D1/GNPTAB/TCIRG1/AP3B1/GAA/ATP6V0A2/MAN2B1/AP4S1/HGSNAT/NPC2/SLC17A5/CTSK/NEU1/GGA3/AP4B1/LAPTM4B/GALNS/CLN3/CTSO/AP3M2
KEGG_LYSOSOME	116	1.88628150307807	7.70362468881472e-06	5.06238193836396e-05	3.35947542820491e-05	NCAM1/IL1B/PRKACA/MAP2K1/MAPK1/NOTCH1/BAX/IL1A
KEGG_PRION_DISEASES	34	1.55514215384368	0.0385756676557863	0.107544285585829	0.0713680613727467	CD36/CR1/CSF2RA/MME/IL1R2/IL4R/IL6R/IL1B/ANPEP/CD9/CD37/CD14/ITGAM/IL5RA/MS4A1/CR2/CD55/HLA-DRA/IL1A/CSF1R/CD44/CD7/ITGA1/CD22/CD19/IL1R1/ITGA6/CSF3R/FLT3LG/IL7R
KEGG_HEMATOPOIETIC_CELL_LINEAGE	82	1.7914192	0.000129940587007659	0.00064619102728133	0.000428822420850311	

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_INOSITOL_PHOSPHATE_METABOLISM	54	1.67709621457509	0.0052642747029975	0.0186274335644527	0.0123614547681723	PTEN/PIK3CD/PLCG2/IMP2/ITPK1/PI4KA/ALDH6A1/PIK3CG/PIK3CA/PIK3CB/PIP4K2C/PIK3C2B/PIKFYVE/INPP4A/INPP5B/SYNJ1/ITPKB/INPP5A
KEGG_BLADDER_CANCER	41	1.59431162950972	0.00983424939626246	0.0323125337305766	0.0214431001873392	DAPK1/MYC/MMP9/E2F3/MAP2K1/MAPK1/ERBB2/TYMP/THBS1/CDCN1A/TP53/RPS6KA5/BRAF/KRAS
KEGG_NOD_LIKE_RECEPTOR_SIGNALING_PATHWAY	60	1.68636102410419	0.00206306129885287	0.00774700569365159	0.00514103352667955	NOD2/IL1B/XIAP/MAPK14/RELA/NFKBIA/NFKB1/PYCARD/CARD6/IKBKB/NAIP/MAPK1/MEFV/NLRP3/TAB2/NLRC4/HSP90AB1/CASP5/CARD8/CCL2/RIPK2
KEGG_TYPE_II_DIABETES_MELLITUS	45	1.58807402626793	0.0119989457338013	0.0380656209486109	0.02526093838695	SOCS3/HK2/PIK3CD/PRKCD/PIK3R5/IKBKB/PIK3CG/PIK3CA/PIK3CB/MAPK1/SOCS2/HK3/PRKCE/PKM/SOCS1
KEGG_GAP_JUNCTION	83	1.74220059737927	0.000545063594090116	0.00238789765029955	0.00158464603795623	TUBB2A/TUBB1/GRB2/SOS1/TUBA1A/GNAQ/TUBA1B/MAP3K2/PRKCB/TUBA1C/PRKACA/TUBB3/MAP2K1/GNAI2/SOS2/CSNK1D/TUBA4A/MAPK1
KEGG_MTOR_SIGNALING_PATHWAY	50	1.59568889159166	0.00703127491438876	0.0239584182268062	0.0158991791436471	PIK3CD/AKT1/PIK3R5/HIF1A/PIK3CG/CAB39/PIK3CA/PIK3CB/MAPK1/RICTOR/RPS6KA1/STRADA/BRAF/EIF4E2/ULK2/ULK1
KEGG_REGULATION_OF_ACTIN_CYTOSKELETON	207	1.92407432458785	4.09695798704888e-08	4.64577920975858e-07	3.083011374897e-07	ACTN1/SSH2/IQGAP1/ITGB2/LIMK2/PAK2/SOS1/PIK3CD/ITGAX/ARPC1B/PXN/DIAPH1/MSN/ACTN4/PFN1/CD14/VAV1/ITGAM/GSN/RAC1/RHOA/MAP2K1/FGD3/GNA13/DIAPH2/PAK1/CYFIP2/VCL/SOS2/PPP1CA/PIK3R5/PIK3CG/PIK3CA/RAC2/NCKAP1L/TIAM1/PIK3CB/MAPK1/CRKL/SSH1/MYLK/ARPC5/VAV2/TIAM2/PIP4K2C/CSK/ARPC4/PIKFYVE/ARHGEF7/BRAF/APC/ARHGEF6/WAS/KRAS/WASF2/I

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
						TGA1/CYFIP1/MRAS/ARPC2
KEGG_PHOSPHATIDYLINOSITOL_SIGNALING_SYSTEM	74	1.64198753666049	0.00172362223070688	0.00660721855104303	0.00438465304302627	PTEN/PIK3CD/PLCG2/IMP2/ITPK1/PRKCB/PI4KA/PIK3R5/CDS2/PIK3CG/PIK3CA/PIK3CB/PIP4K2C/ITPR3/PIK3C2B/PIKFYVE/PRKCA/INPP4A/INPP5B/SYNJ1/ITPKB/ITPR1/INPP5D/INPP5A
KEGG_VEGF_SIGNALING_PATHWAY	71	1.61066182327834	0.00347522752214442	0.0127888372814915	0.00848687142250006	PIK3CD/PPP3CA/PLCG2/PXN/PRKCB/MAPK14/AKT1/RAC1/MAP2K1/PIK3R5/PIK3CG/PIK3CA/RAC2/PIK3CB/MAPK1/NFAT5/NFATC2/KRAS/PRKCA/NFATC1/CHP1
KEGG_PATHWAYS_IN_CANCER	318	1.90793756017487	1.70429191320603e-09	3.91987140037386e-08	2.60128765699867e-08	STAT3/EGLN1/RARA/GRB2/SOS1/CSF2RA/PTEN/JAK1/DAPK1/PIK3CD/GSK3B/CREBBP/CBL/RASSF5/STAT5B/PLD1/PLCG2/TGFA/TCF7L2/TGFBR2/STAT1/MYC/MMP9/PRKCB/STK4/E2F3/XIAP/IGF1R/RELA/NFKBIA/NFKB1/TGFB1/AKT1/TPM3/RALB/BID/RAC1/RHOA/MAP2K1/TPR/FADD/FOXO1/SOS2/TCF7/LEF1/RXRA/PIK3R5/HIF1A/CNN1A/SMAD2/IKBKB/PIK3CG/PIK3CA/RAC2/CTBP2/PIK3CB/MAPK1/ERBB2/CRKL/CDK2/BAX/STAT5A/CDKN1A/PML/TP53/CEBPA/CSF1R/FOS/FZD1/MAX/CTBP1/CCDC6/BRAF/APC/BCL2/MSH6/KRAS/EP300/PRKCA/TFG/PIAS1/BCR/SPI1/APPL1/CDKN1B/HSP90AB1/DVL3/ARNT/TRAF3/ITGA6/FAS/PPARD/HDAC1/CSF3R/GSTP1/FLT3LG/MDM2/NCOA4
KEGG_ANTIGEN_PROCESSING_AND_PRESENTATION	67	1.54161983720341	0.0136661028205027	0.0419093819828748	0.0278117180206721	TAP1/KLRC3/HSPA6/TAPBP/TAP2/PSME1/CTSS/NFYC/HLA-DQB1/HLA-DQA1/NFYA/HLA-DRA/CD74/PDIA3/HLA-DPA1/PSME3/HSPA4/HSP90AB1/HSPA5/HLA-E/HSPA1L
KEGG_SMALL_CELL_LUNG_CANCER	84	1.51653702939684	0.0104586651214085	0.0337613049533188	0.0224045273145594	PTEN/PIK3CD/MYC/E2F3/XIAP/RELA/NFKBIA/NFKB1/AKT1/RXRA/PIK3R5/IKBKB/PIK3CG/PIK3CA/PIK3CB/CDK2/APAF1/TP53/MAX/BCL2/PIAS1/CDKN1B/TRAF3/ITGA6
KEGG_FOCAL_ADHESION	193	1.6854433	2.7751213624613	0.000164716880868	0.0001093086852	ACTN1/PAK2/GRB2/SOS1/PTEN/PIK3CD/GSK3B/VASP/PXN/DIAPH1/PRKCB/ACTN4/XIAP/SPP1/IGF1R/VAV1/AKT1/RAC1/RHOA/MAP2

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_WNT_SIGNALING_PATHWAY	146	6076 693 1.572 4710 6546 213	2e-05 0.001632 0070847 3572	672 0.0063891 34118965 35	44656 0.004239 9288203 6602	K1/PAK1/ZYX/VCL/SOS2/PPP1CA/PIK3R5/PIK3CG/PIK3CA/RAC2/PIK3CB/MAPK1/ERBB2/CRKL/THBS1/MYLK/VAV2/BRAF/BCL2/CCND3/RAP1A/PARVG/PRKCA/ITGA1 FRAT2/PPP3CA/GSK3B/CREBBP/TBL1X/TCF7L2/MYC/PRKCB/PRKACA/RAC1/RHOA/CAMK2G/TCF7/LEF1/SMAD2/FRAT1/RAC2/CTBP2/TP53/FZD1/NFAT5/CTBP1/PPP2R5A/PPP2R5E/APC/NFATC2/CCND3/FBXW11/CSNK2B/CHD8/TBL1XR1/EP300/PRKCA/NFATC1/PPP2R5C/CHP1/DVL3/CSNK1A1/CCND2/PPP2CA/PPARD/VANG1/PRKX/PLCB2/MAP3K7/PPP2R1A/CUL1/NFATC3/SIAH1/PRICKLE1/CAMK2D/ROCK2/RUVBL1/PPP3R1/WNT5A/SMAD4 PAK2/GRB2/SOS1/IL1R2/PPP3CA/MAP4K4/IL1B/RAPGEF2/DUSP6/TGFB2/MYC/MAP3K2/TNFRSF1A/PRKCB/STK4/MKNK2/MAPK14/RELA/NFKB1/CD14/TGFB1/AKT1/PRKACA/RAC1/MAP3K1/MAP2K1/ARRB2/HSPA6/MAP3K5/PAK1/TAOK3/MAP2K4/SOS2/IKBKB/DUSP1/RAC2/MAPK1/CRKL/DUSP7/MAP3K3/GADD45B/IL1A/RPS6KA1/TAOK1/TP53/RPS6KA5/FOS/MAX/BRAF/NFATC2/TAB2/KRAS/RAP1A/PRKCA/CDC25B/MKNK1/RELB/CHP1/MRAS/STK3/RASGRP2/IL1R1/RPS6KA3/FAS/HSPA1L/MAPKAPK2/PLA2G12A/DUSP16/PRKX/MAP2K5/MAP4K2 TNFRSF10C/CXCL5/CSF2RB/CXCR1/CCR1/CXCR2/PF4V1/TNFSF13B/CSF2RA/IL17RA/IL13RA1/IL1R2/IL4R/IFNAR1/IL6R/LTB/IL1B/CCR3/TGFB2/IFNGR2/TNFRSF1A/CX3CR1/TGFB1/IL5RA/ACVR1/CCR6/CCR7/IL10RB/TNFRSF1B/IL2RB/IL1RAP/PLEKHO2/IFNAR2/IL12RB1/IL2RG/TNFSF10/ACVR1B/IL1A/PF4/CSF1R/TNFSF4/IFNGR1/CXCR4/TNFSF13/TNFRSF10A SOCS3/UBE2R2/CBL/UBE2L6/XIAP/MAP3K1/MGRN1/UBE2J1/UBE2Q1/UBA1/UBE2D1/UBE3C/UBR5/CUL3/UBE2I/PML/ITCH/UBE2G1/FBXW11/DDB2/BIRC6/PIAS1/WWP2/HERC1/SOCS1/UBE2B/SMURF1/HERC2/KEAP1/MDM2/ANAPC7/UBE2K/PIAS2/UBE4A/UBE2J2/UBE2L3/UBE4B/CUL1/SMURF2/KLHL13/PIAS3/SIAH1/TRIM37/UBE3A/A
KEGG_MAPK_SIGNALING_PATHWAY	254	1.699 6754 0297 654	8.213998 8583930 6e-06	5.2116406 5498043e-05	3.458525 8351128 7e-05	
KEGG_CYTOKINE_CYTOKINE_RECEPTOR_INTERACTION	250	1.555 8283 7516 858	0.000244 1902265 58317	0.0011232 75042168 26	0.000745 4227968 6223	
KEGG_UBIQUITIN_MEDIATED_PROTEOLYSIS	124	1.355 0842 2158 609	0.039794 6084724 005	0.1076795 28807672	0.071457 8108792 331	

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
KEGG_NEUROACTIVE_LIGAND_RECEPTOR_INTERACTION	262	-1.360802516	0.00628564546924793	0.0218218635158796	0.014481328191316	NAPC13/UBE2D3 GRIA4/EDNRA/GRIK2/TACR1/MC5R/PTGER3/CHRNA10/HTR1D/CHRNA4/ADRA2C/CCKAR/ADCYAP1R1/GRM2/GIPR/MC2R/F2RL3/CSH1/DRD5/NPBWR1/CHRM1/LHCGR/CHRM5/OPRL1/SSTR1/GALR3/GRIA2/TRHR/GRIN3B/AGTR1/AVPR2/VIPR2/PRLHR/GABRQ/GRM1/HTR5A/CHRN2/P2RY4/TACR2/PRSS2/AVPR1A/GABRG3/EDNRB/PLG/GABRG2/PRSS3/GABRP/PTH1R/THRA/PTGER1/HTR7/TACR3/MTNR1A/ADRA1B/AVPR1B/NMUR2/GRIK5/GRID1/HCRTR2/P2RY6/HTR2A/DRD2/GRID2/GABRA5/HTR6/NPFFR1/GH1/UTS2R/SSTR5/GCGR/NPY2R/GLRB/MC1R/GHSR/F2R/CHRNA/CGA/SSTR3/GRIN2A/HTR1A/ADRA2A/LTB4R2/CTSG/LPAR6/CHRNA/BDKRB1/GZMA
KEGG_ALZHEIMERS_DISEASE	138	-1.37393665	0.0151741196833677	0.0457711151104862	0.0303744242151968	NDUFB1/UQCR11/GRIN2A/PLCB1/NDUFS4/COX7A2/NDUFB2/CALML6/UQCRQ/NDUFA1/NDUFB3/NDUFA6/COX7C/NDUFA4/COX6C/NDUFA5/COX7B/UQCRB
KEGG_OLFACTORY_TRANSDUCTION	108	-1.501243948	0.00779289647388635	0.0260707809308198	0.0173009759037477	OR12D2/OR51E2/OR2W1/OR2K2/OR2C3/OR10C1/OR10H2/OR2H1/OR7A10/OR8D2/OR4D1/OR1C1/OR11A1/PRKACG/GUCA1B/CAMK2A/OR14J1/OR3A2/OR2B2/OR51I2/OR51B5/OR10A4/GNAL/OR5J2/CAMK2B/OR4D2/OR5V1/OR1D5/OR1Q1/ADCY3/GUCA1A/CLCA1/OR7A5/OR1E1/OR1G1/CNGA3/OR8B8/OR2H2/OR1F1/PRKG1/OR5P3/OR2L13/OR2L2/OR3A1/OR5K1/CALML5/OR12D3/CALML3/CNGB1/OR13C4/OR7D2/OR1J4/OR51B6/CNGA4/GUCY2D/OR52D1/OR52A1/OR7C2/OR1J2/OR10J1/OR10H1/OR1D2/PRKACB/OR2S2/CALML6
KEGG_DRUG_METABOLISM_CYTOCHROME_P450	56	-1.405111	0.0353383897328546	0.100034826320696	0.0663846673524069	GSTA3/CYP2D6/UGT2B15/GSTO2/ADH1A/GSTM5/GSTM3/GSTZ1/CYP1A2/GSTK1/CYP2A6/UGT2B17/FMO3/ALDH3B1/UGT1A1/GSTA1/AOX1/GSTA4/CYP3A4/ADH1C/FMO2/FMO1/CYP2B6/UGT2B28/CYP2C8/MGST1/CYP2C9/ADH5/CYP2C18/FMO4/MAOB/ADH7/CYP2A7/ALDH1A3/CYP3A43
KEGG_HUNTINGTONS_DISEASE	152	-1.718153068	0.000128856511891181	0.00064619102728133	0.000428822420850311	COX6A1/AP2S1/COX7A2L/POLR2H/SOD1/HAP1/TFAM/PPARG/SLC25A4/DNAI1/DNALI1/AP2M1/DNAH2/NDUFB1/UQCR11/TGM2/PLCB1/NDUFS4/COX7A2/NDUFB2/UQCRQ/NDUFA1/IFT57/NDUFB3/CLT

Description	setSize	NES	pvalue	p.adjust	qvalue	core_enrichment
						CL1/NDUFA6/COX7C/NDUFA4/POLR2K/COX6C/NDUFA5/COX7B/UQCRB
KEGG_TYROSINE_METABOLISM	40	-1.50 0198 969	0.030239 8870921 761	0.0883196 70237466 7	0.058610 3074802 411	HGD/ALDH3B1/METTL6/AOC2/TAT/FAH/AOX1/IL4I1/ADH1C/TH/T RMT11/ADH5/DDC/MAOB/HPD/ADH7/ALDH1A3/DBH/PNMT/TPO
KEGG_CARDIAC_MUSCLE_CONTRACTION	70	-1.71 5748 025	0.001624 2903516 7042	0.0063891 34118965 35	0.004239 9288203 6602	COX7A1/MYH6/CACNG6/CACNB2/UQCR10/TPM1/COX6A1/COX7A 2L/TNNC1/UQCR11/COX7A2/CACNA2D2/UQCRQ/COX7C/COX6C/C OX7B/UQCRB
KEGG_PARKINSONS_DISEASE	93	-1.80 8109 287	0.000144 5020800 56594	0.0006996 94282379 296	0.000464 3280134 78252	NDUFA2/UQCR10/COX6A1/COX7A2L/UCHL1/SLC25A4/NDUFB1/U QCR11/NDUFS4/COX7A2/NDUFB2/UQCRQ/NDUFA1/NDUFB3/NDU FA6/COX7C/NDUFA4/COX6C/NDUFA5/COX7B/UQCRB
KEGG_OXIDATIVE_PHOSPHORYLATION	95	-1.82 3337 311	0.000127 2707184 65283	0.0006461 91027281 33	0.000428 8224208 50311	ATP4A/PPA2/NDUFA2/UQCR10/PPA1/COX6A1/COX7A2L/ATP6V1D/ NDUFB1/UQCR11/NDUFS4/COX7A2/ATP6V0A1/NDUFB2/UQCRQ/N DUFA1/NDUFB3/NDUFA6/COX7C/NDUFA4/COX6C/NDUFA5/COX7 B/UQCRB
KEGG_LINOLEIC_ACID_METABOLISM	23	-1.60 4376 31	0.034417 6336159 697	0.0989506 96645912 9	0.065665 2220304 685	CYP3A4/PLA2G1B/PLA2G12B/CYP2J2/CYP2C8/PLA2G2E/CYP2C9/P LA2G6/CYP2C18/PLA2G2A/PLA2G2D/CYP3A43
KEGG_RIBOSOME	69	-2.60 7651 996	1.031292 1057027 6e-10	3.7951549 4898615e- 09	2.518523 8791899 e-09	RPS9/RPL10L/RPL24/RPL3/RPS27A/RPS17/RPL36AL/RPL35A/RPL6/R PL22/RPL9/RPL7/RPS25/RPL11/MRPL13/RPL35/RPL22L1/RPL26L1/R PS7/RSL24D1/RPL34/RPS27L/RPL31/RPS24