

Online Supplementary
Material

Term	Count	PValue	Genes
hsa05215:Prostate cancer	24	0.002664047	FGFR2, PIK3CG, E2F2, E2F3, CREB1, PIK3CD, CREBBP, FOXO1, CREB5, NFKB1, PTEN, CDK2, CCNE1, NRAS, CCND1, PDPK1, SOS1, BCL2, PDGFRA, TGFA, PDGFC, PDGFD, CHUK, AKT2
hsa05222:Small cell lung cancer	22	0.006075863	COL4A4, PIK3CG, E2F2, E2F3, PTGS2, CYCS, PIK3CD, NFKB1, PTEN, BIRC2, CDK2, CCNE1, CCND1, CDKN2B, ITGAV, BCL2, APAF1, LAMC1, TRAF5, CHUK, TRAF4, AKT2
hsa05220:Chronic myeloid leukemia	18	0.032533883	PIK3CG, E2F2, E2F3, STAT5A, TGFB1, STAT5B, PIK3CD, TGFB2, SMAD4, NFKB1, ACVR1C, PTPN11, NRAS, CBLB, CCND1, SOS1, CHUK, AKT2
hsa05212:Pancreatic cancer	16	0.08079836	PIK3CG, E2F2, E2F3, PLD1, TGFB1, PIK3CD, TGFB2, SMAD4, NFKB1, SMAD2, ACVR1C, CCND1, VEGFA, TGFA, CHUK, AKT2
hsa05223:Non-small cell lung cancer	13	0.07478868	PIK3CG, PRKCA, E2F2, E2F3, PIK3CD, FOXO3, NRAS, CCND1, PDPK1, RASSF5, SOS1, TGFA, AKT2
hsa04060:Cytokine-cytokine receptor interaction	49	0.036687845	IL17RB, CXCL10, ZFP91, TNFRSF11B, CXCR6, IFNG, IL1RAP, PDGFC, IL1A, GHR, LTBR, IL6R, IL24, EDAR, IL22, IFNAR1, CCNL2, INHBA, ACVR2A, ACVR2B, VEGFA, CX3CR1, PDGFRA, CXCL1, TNFRSF21, CSF2, IL1R1, CCL2, CCR1, BMPR2, CXCL9, CCL8, TNFRSF1B, TNFRSF19, BMP2, IL23R, TNFSF4, IL8, IL7, TGFB1, TNFRSF13B, TGFB2, TNFSF8, LEP, TSLP, CXCL14, BMP7, BMPR1B, BMPR1A, PRKAG3, PRKAG2, HK2, MKNK2, FOXO1, PDE3B, RPS6KB1, PPP1R3D, PDPK1, SLC2A4, SORBS1, SOS1, PRKAA2, AKT2, PIK3CG, IRS2, PTPRF, PIK3CD, PRKAB2, PRKAB1, PPARGC1A, IRS1, NRAS, CBLB, TSC1, PKLR
hsa04910:Insulin signaling pathway	26	0.0990648	E2F5, BMPR2, RPS6KB1, ACVR1C, CDKN2B, IFNG, THBS1, BMP2, TGFB1, TGFB2, CREBBP, SMAD4, SMAD2, SMAD1, SKP1, ACVR2A, INHBA, ACVR2B, ID2, SMURF2, ID4, BMP7, BMPR1B, BMPR1A, BMP6, PRKAG3, IRS2, PRKAB2, PRKAG2, PRKAB1, NFKB1, PPARGC1A, IRS1, CPT1A, PTPN11, LEP, TNFRSF1B, ACSL1, CD36, SLC2A4, SLC2A1, PRKAA2, CHUK, AKT2
hsa04920:Adipocytokine signaling pathway	19	0.004811937	BID, CYCS, RRM2B, PMAIP1, PTEN, ATM, CDK2, RFW2, CCNE1, CCND1, CCNB3, RRM2, SERPINE1, APAF1, RCHY1, THBS1
hsa04115:p53 signaling pathway	16	0.053100475	

hsa04520:Adherens junction	24	3.00E-04	ACTB, PTPRB, PTPRJ, PTPRM, WASF3, PTPRF, TGFB1, CREBBP, TGFB2, SMAD4, LMO7, CTNND1, CDH1, SMAD2, SNAI2, ACP1, IQGAP1, ACVR1C, ACTG1, SORBS1, PVRL2, SSX2IP, WASL, YES1
hsa04144:Endocytosis	34	0.093194903	FGFR2, ARFGAP3, ERBB4, CHMP4C, CHMP5, STAM2, ADRBK2, ZFYVE20, CLTC, CHMP2B, ACVR1C, AP2B1, SMAP1, VPS4B, VPS36, PARD6B, PLD1, TGFB1, VTA1, TGFB2, PSD3, PSD4, HLA-F, RAB11FIP4, RAB31, CBLB, ARRB2, PSD, NEDD4, RAB22A, PDGFRA, SMURF2, RAB11FIP1, F2R
hsa04120:Ubiquitin mediated proteolysis	29	0.028735581	UBA6, CUL3, PRPF19, CUL2, FBXW7, MGRN1, WWP2, FBXO4, RCHY1, UBE2D1, UBE4B, UBE2J1, CDC23, HERC3, UBE2H, SKP1, BIRC2, UBE2Q1, UBE2N, RFWD2, CBLB, RNF7, NEDD4, UBE2K, UBA3, UBE2W, SMURF2, CUL4B, UBE2E1
hsa04360:Axon guidance	26	0.06465053	NRP1, GNAI1, EPHB1, SEMA5A, PAK2, NFAT5, SEMA3D, SEMA3C, CHP, SEMA3A, UNC5C, RASA1, NGEF, EFNB2, NTN4, CHP2, DPYSL2, NTN1, EPHA3, SLIT3, NRAS, EPHA4, EPHA7, CFL2, SRGAP3, SRGAP2
hsa00512:O-Glycan biosynthesis	9	0.054256784	GALNT3, GCNT4, GALNT2, GALNT1, GCNT3, ST3GAL2, GALNTL2, OGT, GALNT12, GALNT13
hsa04320:Dorso-ventral axis formation	8	0.05521823	NOTCH3, NOTCH2, FMN2, ETS2, SOS1, NOTCH4, SPIRE1, ETV6