

Figure S1. Identification of DEGs in GSE14905 and GSE78097. Principal component analysis of the samples in (A) GSE14905 and (C) GSE78097. Orange dots represent normal samples and gray dots represent psoriasis samples. Hierarchical cluster analysis of DEGs in (B) GSE14905 and (D) GSE78097. The orange area represents normal samples and the gray area represents psoriasis samples. A  $|\log_2FC| > 1$  and  $P < 0.05$  were set as the cut-off criteria. DEGs, differently expressed genes.

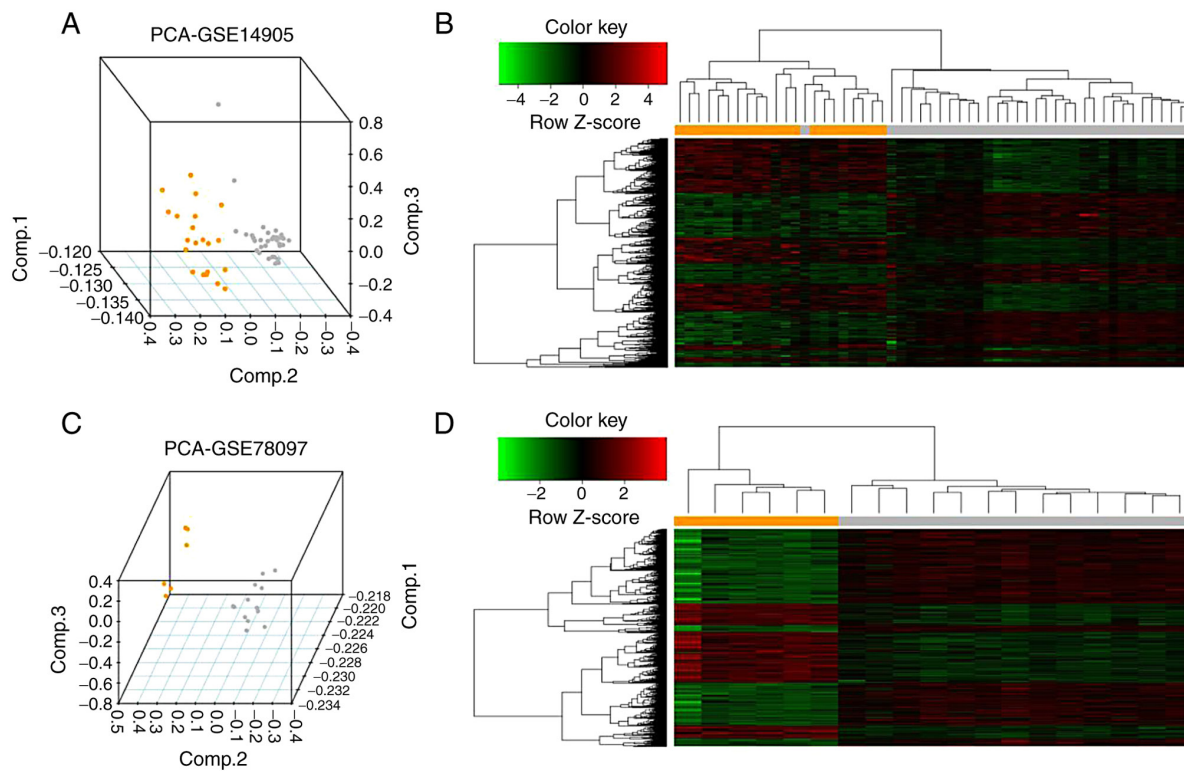


Figure S2. DEGs PPI network. The protein network was established by the Cytoscape software, including 475 nodes and 2556 edges. Blue nodes represent upregulated genes, and orange nodes represent downregulated genes. A combined score of  $>0.4$  was set as the cut-off criteria. DEGs, differently expressed genes; PPI, protein-protein interaction.

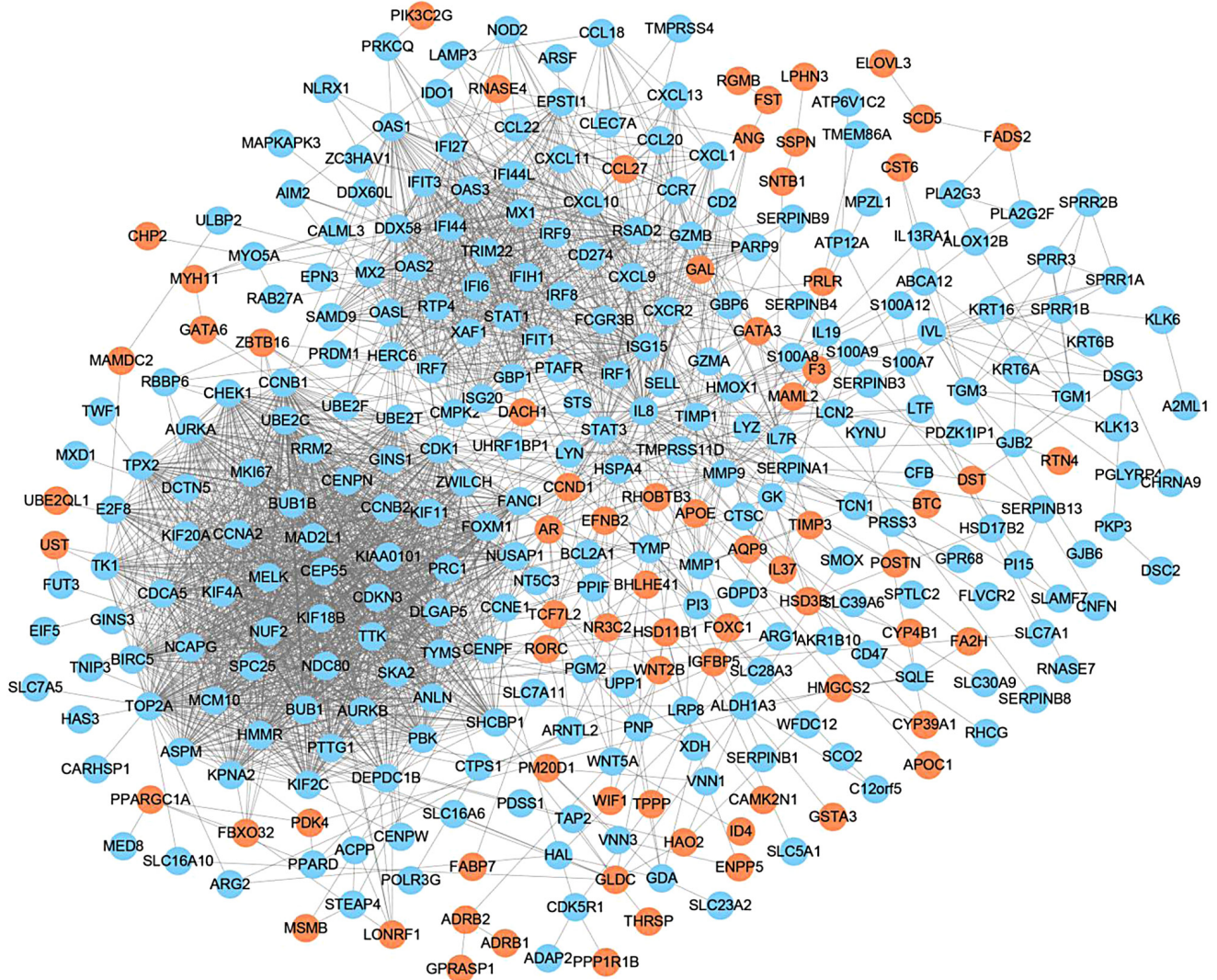


Figure S3. KEGG pathway analysis of Module 1 and Module 2 in the DEGs PPI network. The pathways involved in (A) module 1 and (B) module 2 were analyzed using ClueGO software in Cytoscape. KEGG, the Kyoto Encyclopedia of Genes and Genomes; DEGs, differentially expressed genes; PPI, protein-protein interaction.

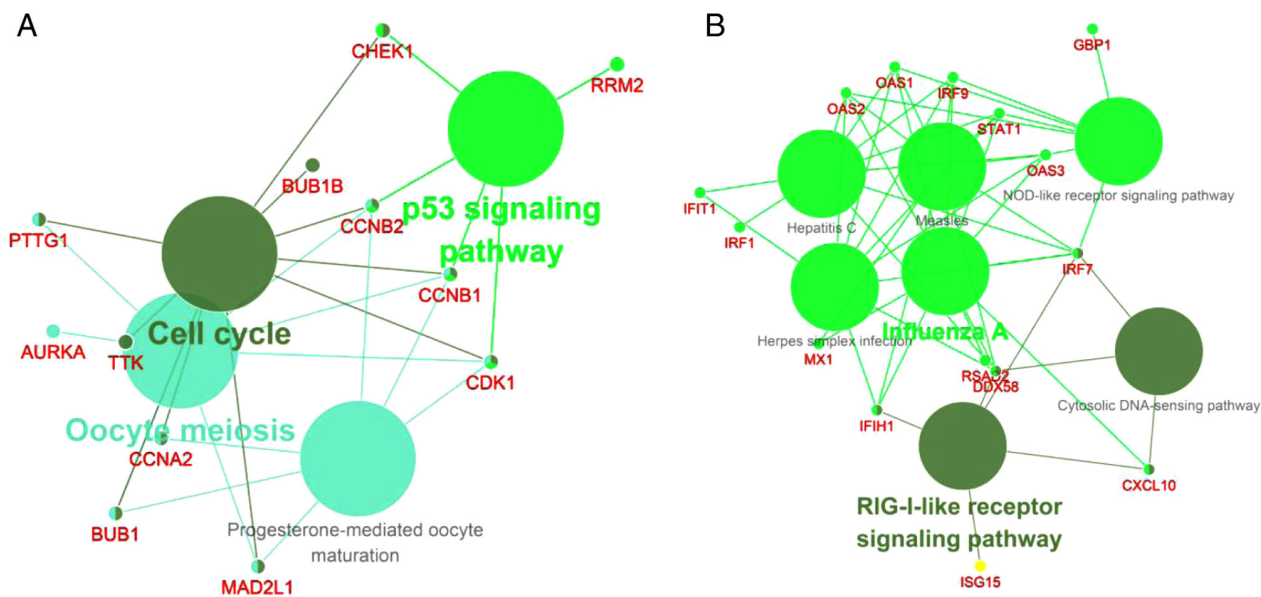


Figure S4. Biological process analysis of methylated-differentially expressed genes using ClueGO software. The significant enriched signaling pathways ( $P < 0.05$ ) are shown.

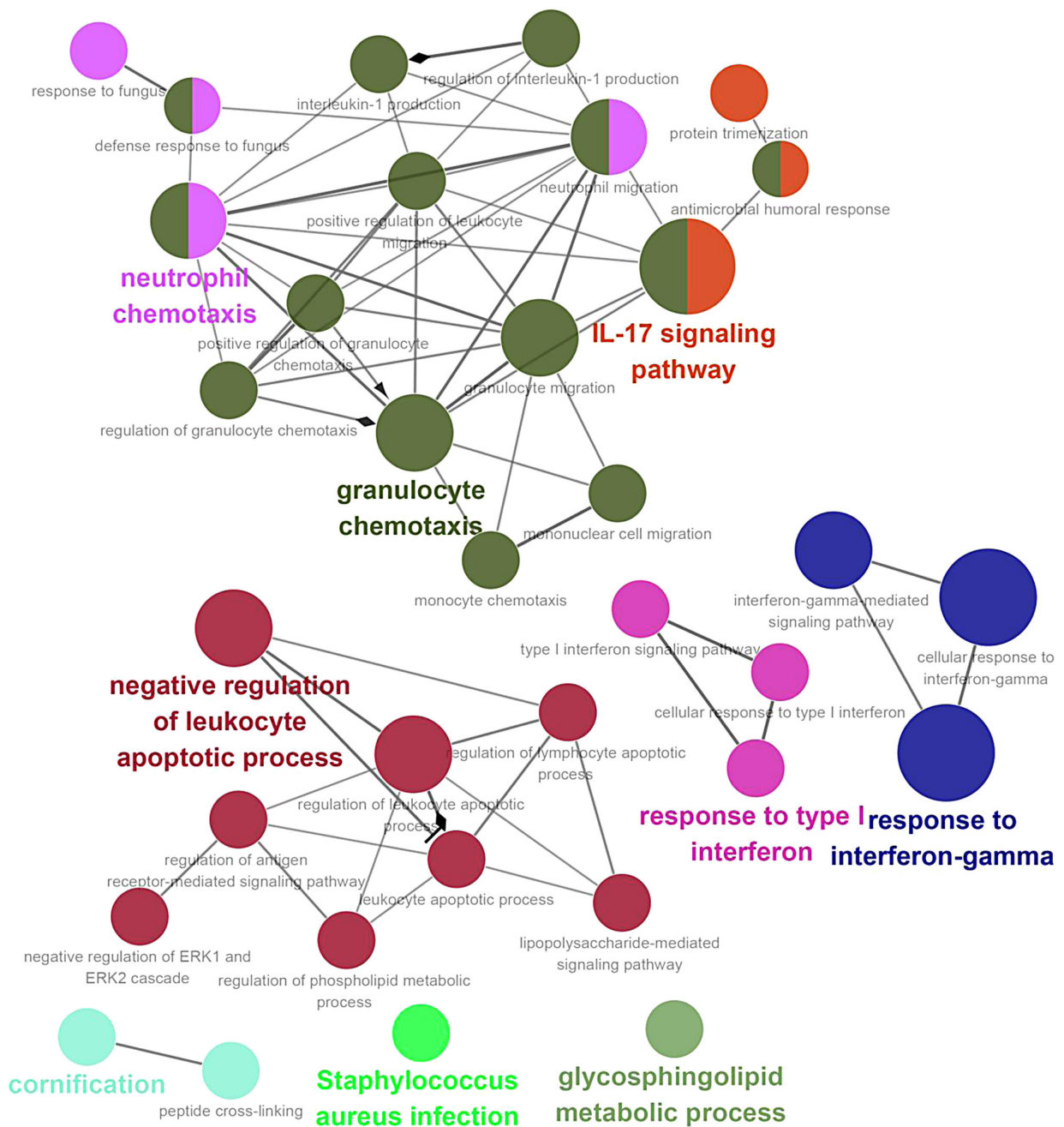


Figure S5. TET2 regulates the expression of partial hub genes in a model of psoriasiform dermatitis. (A-J) SELL, MMP9, IL7R, CXCL1, LCN2, FCGR3B, S100A7, IRF7, CCR7 and IFI44 mRNA levels in the skin lesions were evaluated using PCR. The results are presented as the means  $\pm$  standard deviation. All experiments were performed 3 times, and the representative results are presented. \* $P < 0.05$  and \*\* $P < 0.01$ ; ns, not significant.

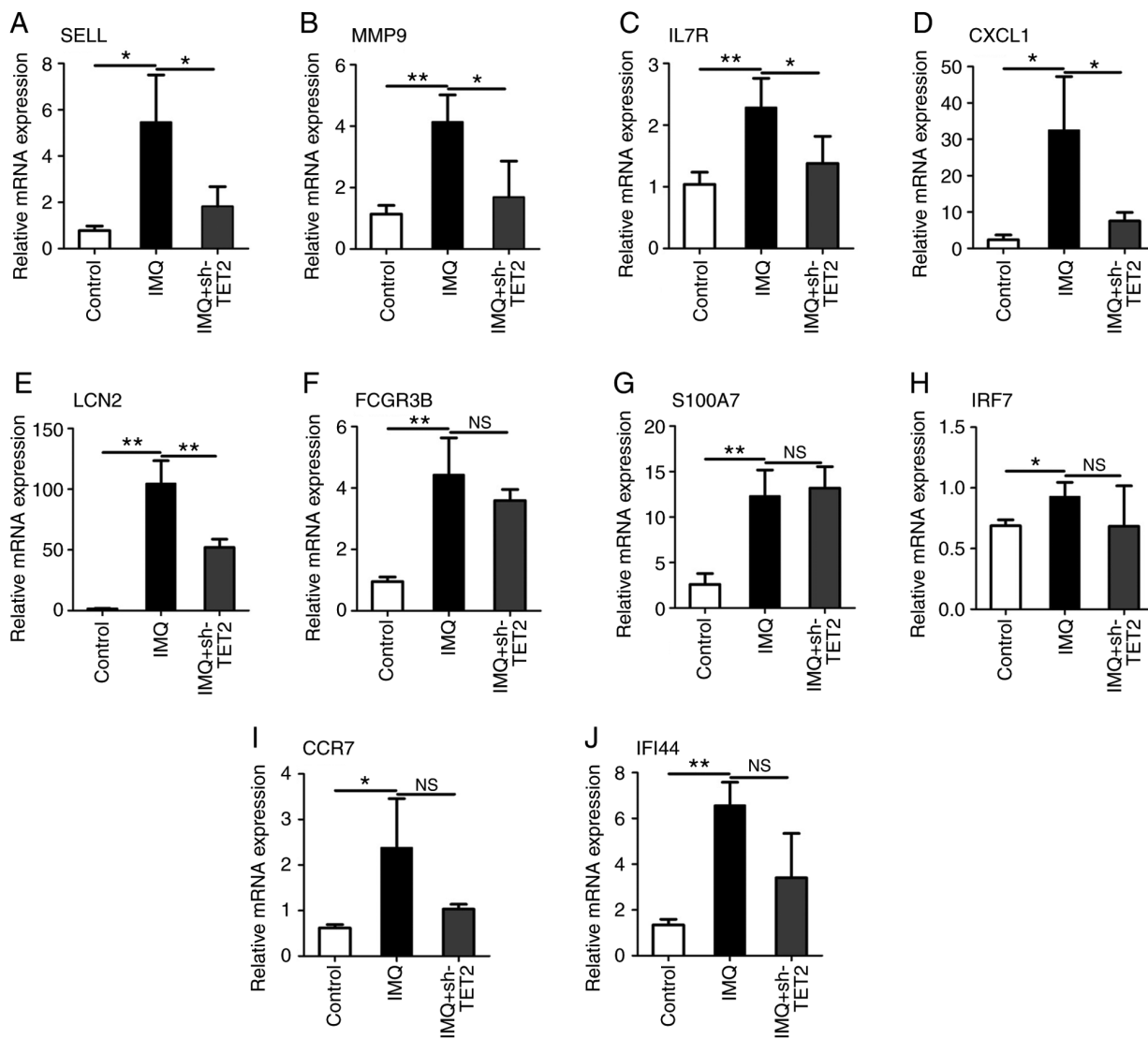


Table SI. Primers for used for RT-qPCR.

Gene name	Primer sequence (5'-3')
Mus-GAPDH	
Forward	TGGCCTTCCGTGTTCCCTAC
Reverse	GAGTTGCTGTTGAAGTCGCA
Mus-SELL	
Forward	TACATTGCCCAAAGCCCTTAT
Reverse	CCTCCTTGGACTTCTTGTTGTT
Mus-MMP9	
Forward	CTGGACAGCCAGACACTAAAG
Reverse	CTCGCGCAAGTCTTCAGAG
Mus-IL-7R	
Forward	GCGGACGATCACTCCTTCTG
Reverse	GCATTTCACTCGTAAAAGAGCCC
Mus-S100A7	
Forward	TGCTCTTGGATAGTGTGCCTC
Reverse	GCTCTGTGATGTAGTATGGCTG
Mus-IRF7	
Forward	CCCCAGCCGGTGATCTTTC
Reverse	CACAGTGACGGTCCTCGAAG
Mus-CCR7	
Forward	TGTACGAGTCGGTGTGCTTC
Reverse	GGTAGGTATCCGTCATGGTCTTG
Mus-IFI44	
Forward	AACTGACTGCTCGCAATAATGT
Reverse	GTAACACAGCAATGCCTCTTGT
Mus-CXCL1	
Forward	ACTGCACCCAAACCGAAGTC
Reverse	TGGGGACACCTTTTAGCATCTT
Mus-LCN2	
Forward	GCAGGTGGTACGTTGTGGG
Reverse	CTCTTGTAGTCATAGATGGTGC
Mus-FCGR3	
Forward	CAGAATGCACACTCTGGAAGC
Reverse	GGGTCCCTTCGCACATCAG
Mus-S100A9	
Forward	ATACTCTAGGAAGGAAGGACACC
Reverse	TCCATGATGTCATTTATGAGGGC
Mus-TET2	
Forward	AGAGAAGACAATCGAGAAGTCGG
Reverse	CCTTCCGTACTCCCAAACATCAT

Table SII. Total of 352 consistently upregulated DEGs and 137 consistently downregulated DEGs in psoriasis samples compared to normal samples.

DEGs	Gene name
Upregulated	PPARD, IL7R, LYNX1, ZC3HAV1, AURKB, SLC30A9, TNIP3, E2F8, PGM2, CARHSP1, CXCL10, TGM1, XDH, PLCXD1, PDZK1IP1, TK1, IL19, IL36RN, ZDHHC21, ARG2, CARD6, MKI67, STEAP4, STS, ADAP2, HSD17B2, MPZL2, IDO1, ALDH1A3, HAS3, EHF, SCO2, OAS3, PTAFR, ARSF, KLK6, ATP6V1C2, HMOX1, PLA2G3, TPX2, SLC28A3, MOXD1, OAS1, RSAD2, DEPDC1B, SERPINB8, TMEM45B, MX1, SDR9C7, PLA2G2F, ATP11B, CCNB1, PDSS1, SHCBP1, DDX60L, SPRR2C, RGS20, NETO2, KCNK6, GDA, IRF1, CCL18, ASPM, NT5C3A, SMOX, CRABP2, KLK10, PI15, GK, HMMR, SLC7A1, CD24, CXCL13, PRKCQ, KIF4A, TRIM22, POLR3G, GBAP1, GINS3, LYZ, ATP12A, IRF7, SPRR3, SERPINB13, CCL22, DUOXA1, CMPK2, AKR1B10, LYN, AFAP1L2, DDX58, CFB, LRG1, GINS1, TMPRSS4, C12orf56, IFI6, SLC23A2, ZBED2, PRSS2, GM2A, KYNU, HERC6, TCN1, STAT3, TMEM86A, UPP1, CCL20, SLC5A1, XAF1, MPZL1, EPN3, CD47, LOC100996579, KPNA2, SPIN4, IL13RA1, MXD1, WNT5A, IFIH1, INA, ADAMDEC1, SLC16A6, RAB27A, WFDC12, ANLN, FBXO45, EIF5, SLC7A5, ARG1, UBE2F, KIF2C, PON2, GZMA, BIRC5, KIF20A, SQLE, APOL6, GJB6, SELL, MYO5A, CD2, TAP2, MCM10, AIM2, IRF8, GALNT6, KLK13, UBE2C, CHRNA9, FOXE1, FAM65C, TGM3, SERPINB9, SPRR2G, CCNE1, S100A7, MAPKAPK3, C12orf5, A2ML1, LCE3D, SPTLC2, FOXM1, HPSE, CHI3L2, SERPINB4, JMY, CCNB2, GK3P, TTC39A, VNN1, PRC1, SAMD9, S100A7A, SERPINB1, LCN2, KRT6B, IFI44L, RNASE7, TRBC1, PKP3, CNFN, CDK1, GPD3, FUT3, CLEC7A, TYMS, SFT2D2, CALML3, IFIT1, LAMP3, CLCA2, DNASE1L3, CHEK1, MELK, NOD2, LRP8, CENPW, GPR68, CTA-384D8.35, KIF11, GBP1, S100A12, NFE2L3, CEP55, EPSTI1, MPHOSPH6, PRSS27, SAMSN1, CEMIP, TWF1, CENPN, DCTN5, TMC5, IL36A, OAS2, PRSS3, IL36G, ULBP2, KIF18B, UHRF1, ACPP, KRT16, RRM2, RAET1E, TMPRSS11D, LAD1, CTPS1, SLC7A11, NDC80, SERPINB3, TOP2A, KIAA0101, SYNCRIP, MFHAS1, PPIF, CXCR2, GJB2, TMEM40, RHCG, PCP4L1, UNC93A, SPRR1A, PGLYRP4, CXCL9, MED8, ESYT3, KCNJ15, FANCI, IRF9, PARP9, GBP6, KLHDC7B, CCNA2, PLBD1, GZMB, HYAL4, VSNL1, TNFRSF21, FCGR3B, TTK, KLHL18, PRSS53, OTUB2, S100A8, SMPD3, ERO1L, IVL, ABCA12, CDKN3, LTF, PI3, BUB1, SLC6A14, NUF2, PBK, HAL, KRT78, NCAPG, LOC101928100, ISG20, RALGPS2, CXCL1, CD274, KRT6A, SPC25, OASL, HSPA4, CDK5R1, PRR11, ZWILCH, DSC2, CXCL11, MMP1, SLC26A9, SERPINA1, STAT1, TYMP, FAM26F, PTTG1, RP11-295G20.2, SKA2, APOBEC3B, MMP12, FAM43A, FLVCR2, CDCA5, SPRR2B, LYPD5, CXCL8, RTP4, AURKA, WDR66, UBE2T, IFI44, CENPF, NUSAP1, CCR7, SLC16A10, CHAC1, FCHSD1, BCL2A1, C10orf99, NLRX1, C12orf29, PRDM1, DSG3, BUB1B, SPRR1B, SH3PXD2A-AS1, ALOX12B, SLAMF7, DHRS9, ISG15, MAD2L1, MX2, PNP, LRRC8B, ST6GALNAC1, IFIT3, S100A9, DLGAP5, CYSRT1, MMP9, IGFL1, RBBP6, FAM83A, IFI27, SLC39A6, ARNTL2, CTSC, VNN3
Downregulated	WIF1, FOXC1, PEG3, FIBIN, GREM2, PPP1R1B, NR3C2, RP11-757F18.5, PPARGC1A, RTN4, F3, ZSCAN18, PRELP, RGMB, RBMS3, CYP39A1, PAMR1, HAO2, MUC7, ADRB1, ZNF677, ANG, HMGCS2, FAM134B, LONRF1, C2orf88, ADRB2, BCAR3, TMEM47, FGF2, EDIL3, CRAT, CHL1, FA2H, PLLP, CST6, AHNAK2, COBL, MACROD2, CLDN23, MAMDC2, WDR72, CAMK2N1, AQP9, C11orf80, THRSP, FST, EFNB2, FXVD6, ARHGEF26, FABP7, RAI14, KRT77, SERPINA12, GATA3, CHP2, PM20D1, RAI2, ZBTB16, TCF7L2, OGN, FBXO32, SSPN, PWAR6, SCARA5, AR, LAMB4, TMEM56, SCGB2A1, HSD3B1, BHLHE41, WNT2B, ZNF667-AS1, KIAA1244, GAL, RHOBTB3, COCH, C5orf46, RNF128, SVIP, SLITRK6, SCD5, GSTA3, BTC, MFSD4, TIMP3, GLDC, PDK4, MAML2, CLDN8, TMEM116, HS3ST6, CRISPLD1, ID4, POSTN, ZBTB20, SOX5, RORC, MYH11, DACH1, APOC1, RNASE4, IGFBP5, FADS2, C1QTNF7, PRLR, PPFIBP1, ELOVL3, SLC2A13, LPHN3, CYP4B1, IL37, DST, CLDN1, ENPP5, STXBP6, UBE2QL1, FAR2, MSMB, CCND1, ISM1, PIK3C2G, TPPP, FAM189A2, MTURN, UST, SORBS2, APOE, GATA6, RAB3B, GPRASP1, SNTB1, SYBU, IGFBP6, CCL27, JADE1, HSD11B1

DEGs, differently expressed genes.