

GO results for differentially expressed genes.

Term	Count	PValue	Genes
GO:0005576~extracellular region	347	1.42E-42	EDN3, MASP1, S100A7, EDN2, NOTUM, LUZP2, DNASE1L2, DNASE1L3, SHH, OGN, DSPP, APOB, AGTR2, SERPINE1, COL12A1, IFNK, GUCA2A, MUC15, CFD, BRINP3, COL10A1, WFDC10A, MATN3, WFDC10B, TMEFF2, STC2, NODAL, COLEC10, F7, DHRS7C, CLEC4M, PRELP, WFDC8, VEGFD, CD163L1, PPBP, F5, TMPRSS11D, TMPRSS11E, F2, IL36B, PLA2G2C, TMPRSS11A, ADAMTS2, PLA2G2F, IBSP, ODAM, ENPP6, IL36G, ACP7, GAST, ESM1, FAM19A4, ITGBL1, AHSG, IL17C, METTL24, IL17A, IL23A, INS, IL17F, SPP1, MLN, BMP3, NTF4, IGFL4, HBA2, MUCL1, LAMA1, CEL, NPY, PENK, SFRP1, NPW, PSORS1C2, SFRP4, TREML4, IGFL2, PAPP2, IGFL3, MUC5AC, PYY, BMP7, PLAU, BMP5, NXPE1, TLL1, FGF8, MTRNR2L1, ASGR1, KISS1, CGREF1, MMP20, TNFRSF11B, SERPINA7, ERF2, CREG2, SERPINA4, SEMA3E, GPX3, COL11A1, FGF3, GHR, SPACA3, ELANE, SAA4, GIF, PSG1, IL6R, MMP13, FLNA, MMP11, SLIT3, INHBB, MMP10, INHBA, PSG9, CHRDL1, BGN, PSG7, EREG, PSG6, PSG5, OTOG, SERPINB2, SCGB3A2,

ADAM12, PLA2G3, PRSS48,  
PLA2G5, CXCL1, CER1, TG,  
CSF2, C7, CXCL5, CXCL3,  
CXCL2, JCHAIN, CXCL8,  
NMB, CXCL6, CCL28,  
IGSF10, CCL23, COL7A1,  
COL6A6, CCL21, COL6A5,  
THBS2, HGFAC, NMU,  
WNT8B, LCN15, HAPLN1,  
LCN12, CCL19, IGF2,  
LCN10, DKK4, ORM1,  
CCL13, WNT7B, CCL14,  
COL19A1, DKK1, CLEC3B,  
MAPK15, LRP8, CMA1,  
SERPIND1, PRSS22,  
WNT7A, ORM2, ENHO,  
FGF19, FDCSP, CGB5,  
CNDP1, WNT3A, OBP2A,  
F13A1, MMP8, OBP2B,  
MMP7, CGB7, MMP3,  
CXCL11, MMRN1, CXCL12,  
GDNF, MMP1, PSG11, IL11,  
APOA4, AADA2L2, WNT2,  
AZGP1, APOA2, APOA1,  
WNT3, PGLYRP4,  
PGLYRP3, TGFBI, EPPIN,  
LGI4, REG3G, LGI1, IL1A,  
SEMG1, BPIFA1, SCUBE2,  
SEMG2, FGF23, FGF21,  
FGF20, TCN1, PCOLCE2,  
UCN2, CST5, ANOS1,  
MFAP2, PAEP, COL1A1,  
MFAP4, MFAP5, FGFR2,  
BPIFB1, PPY, HIST1H4L,  
CLU, GREM2, TIMP1,  
ANGPTL7, SAA2-SAA4,  
CLPSL2, FOLR2, FGA,  
HIST1H4A, BCHE, FGB,  
HIST1H4B, APELA,  
CLPSL1, APOC3, GALP,  
SFTA3, HIST1H4E, SFTA2,  
SFTPC, HIST1H4F,  
HIST1H4C, HIST1H4D,  
DEFB1, ANGPTL5, SFTPB,

GO:0005615~extracellular space	301	9.97E-40	<p> PRB2, HIST1H3J, DAND5,  PRB1, PRB4, DMP1, EPHX3,  SELENOP, NTN1, MUC6,  HIST2H3D, LCN2, LCN1,  CXCL17, OMD, S100B,  LCN6, HIST1H3A,  HIST1H3B, HIST1H3C,  WIF1, HIST1H3D,  HIST1H3F, SST, HABP2,  HIST1H3I, PNLIP, INSL5,  NXPH4, SLURP1, CORIN,  REG4, CRP, RSPO4, WISP3,  SPINT4, RSPO2, CNTNAP3,  KLK10, NRG2, APLN, ITIH6,  NXPH1, LAIR2, INHA, GRP,  OSM, AMH, SIGLEC6,  CHST9, CA6, CEMIP,  CNTN4, WNT11, TREM1,  CTSG, VIP, HCRT, TSPEAR,  PRSS1, ISM2, C1QTNF9,  C1QTNF7, CALCA, CALCB,  C1QTNF8, COL9A3, NPTX2,  COMP, PRSS2, REN, SCG3,  ACAN, HBB, KLK6, KLK7,  VSTM2A, PLAC1, DHRS11,  PLAC9, A2ML1, COL4A6,  GCG, SCGN, PNOC,  C5ORF38, DSC3, IGFBP1,  GDF15, ADAMDEC1, LIPF  EDN3, CTHRC1, LYPD3,  GLDN, MASP1, PGC, EDN2,  LYPD8, CRHBP, SELENBP1,  SHH, OGN, ACTG2, APOB,  IFNE, FAP, PPP1R1A,  HIST1H2BI, HIST1H2BJ,  SERPINE1, CCBE1,  COL12A1, IFNK, CFD,  VNN3, INA, CELA3B,  CLCA1, STC2, ADAMTS20,  NODAL, PKHD1L1, F7,  PRELP, SCGB2A1, VEGFD,  CD36, PPBP, F5, TACSTD2,  F2, IL36B, STC1, IBSP,  ODAM, IL36G, SERPINA10, </p>
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GAST, AHSG, IL17C, IL17A,  
INS, IL17F, OLFM3, SPP1,  
BMP3, IGFL4, IL1RN,  
CHI3L1, KRT31, HILPDA,  
KRT34, KRT35, SFRP5,  
LAMA1, CEL, LGALS7B,  
NPY, SFRP1, SRPX2, SFRP4,  
FJX1, IGFL1, MUC5AC,  
PYY, BMP7, PLAU, BMP5,  
CSTL1, FGF8, PRH2,  
SPINK2, ANPEP, KISS1,  
SERPINA9, MMP20,  
TNFRSF11B, SERPINA7,  
SAA2, SMPDL3A, SCRG1,  
ERFE, SERPINA4, SEMA3E,  
GPX3, PRSS33, DPEP1,  
VWA2, GHR, SPACA3,  
EGFL6, ELANE, CPXM2,  
GIF, SAA4, IL6R, MMP13,  
SLIT3, INHBB, MMP10,  
EREG, SERPINB5,  
SERPINB7, OTOG, LYZL4,  
SERPINB2, SERPINB4,  
SERPINB3, EPYC, PLA2G3,  
CXCL1, CER1, TG, CSF2,  
CXCL5, CXCL3, CXCL2,  
JCHAIN, CXCL8, PSAPL1,  
CXCL6, CCL28, CCL26,  
CPN1, PCSK2, PCSK1,  
CCL23, COL7A1, CCL21,  
VWC2, PCSK9, SERPINB13,  
PCSK5, HGFAC, WNT8B,  
CES3, CES2, HIST1H2BE,  
HIST1H2BF, NLGN1,  
CCL19, IGF2, AFP, ORM1,  
CCL13, WNT7B, CCL14,  
DKK1, CLEC3B, EPGN,  
SERPIND1, WNT7A, ORM2,  
CMTM5, WNT3A, MMP8,  
MMP7, DLK1, MMP3,  
CXCL11, CXCL12, IL11,  
WNT2, APOA4, AZGP1,  
REG3A, APOA1, WNT3,  
SPX, TGFBI, TDGF1,

GO:0005887~integral  
component of plasma  
membrane

247

1.86E-16

MS4A1, EPPIN, LGI4, CPA1,  
LGI1, KRT83, IL1A, SEMG1,  
BPIFA1, SPARCL1,  
SCUBE1, SEMG2, CST2,  
FGF23, CST1, FGF21, TCN1,  
UCN2, CBLN2, CST6, CST4,  
CST5, CARTPT, ANOS1,  
RELN, COL1A1, XDH,  
ACTBL2, BPIFB1, PPY,  
BPIFB2, MSMB, CLU,  
DSCAML1, CCL8, GREM2,  
ABI3BP, TIMP1, FGA, FGB,  
APELA, MSLN, BTN1A1,  
APOC3, TFF2, SFTPC,  
ANGPTL1, ANGPTL3,  
DEFB1, SFTPB, DAND5,  
CPA4, LPO, UCN,  
SELENOP, C2ORF40, LCN2,  
LCN1, CXCL17, OMD,  
S100B, SPTBN2, SST,  
HABP2, INSL4, SLURP1,  
CRP, VGF, WISP2, WISP1,  
WISP3, KLK12, KLK11,  
NRG2, APLN, CILP, GRP,  
OSM, AMH, CHGA, CFL2,  
ULBP2, CA6, WNT11, CA2,  
CTSG, CPO, CPM, SPOCK3,  
VPREB3, KRT9, CALCA,  
REN, PRSS2, COMP, KRT1,  
PTN, FGFBP2, MYOC, DPT,  
SCG2, KLK6, KLK7,  
SECTM1, KLK8, TNXB,  
KLK5, TNFSF9, A2ML1,  
IL36RN, GCG, KRT78,  
MEP1A, MEP1B, GPT,  
IGFBP1, CELA2A, GDF15,  
KLHL34, MUC16  
CADM3, SLC52A1, AQP9,  
CADM2, AQP8, AQP5,  
LPAR1, AQP6, AQP2,  
AGTR1, ATP2B3, AGTR2,  
ATP2B4, KCNK9, GRIN2B,  
ADAM2, NPSR1, HTR1D,  
HCAR3, CLCA1, CLCA4,

ABCB11, PTPRH, GRIN2A,  
HTR4, LIFR, TMEM130,  
CLEC4M, SSTR5, CCR8,  
SSTR2, VSIG2, SSTR3,  
CD36, RHCG, TMPRSS11D,  
TACSTD2, HTR7,  
TMPRSS11E, CCR2,  
TMPRSS11A, CALHM3,  
CLEC5A, PRLHR, CALY,  
FCER2, ADRB3, SLC11A1,  
MUSK, UPK1A, SLC28A1,  
SLC28A3, FCER1A, TRPC5,  
TRPC7, CELSR1,  
DCSTAMP, KCNK3,  
ATP13A4, EPHA5, CEL,  
SEMA6A, EPHA7, EPHA6,  
SEMA6D, EPHA8, AVPR1B,  
CHRNA1, KCNJ16, KCNJ15,  
SLC15A1, TRPV3,  
SLC16A12, ANPEP,  
APCDD1, GPR87, GPR88,  
SLC26A2, KCNJ13, ASGR1,  
KISS1R, TNFRSF11B,  
SLC23A1, SLC22A3,  
MAS1L, TRPV6, CEACAM1,  
GHR, CACNG4, ACKR2,  
NECTIN4, GPER1, GRM4,  
SLC26A3, EREG, GRM8,  
SLC26A9, LRMP, GLRA4,  
KCNH8, SLC39A10, NPY2R,  
TFR2, BEST4, BEST2,  
BEST3, MAS1, FUT1,  
NPFFR1, SLC8A2, TRHDE,  
LRRN4, PTPRZ1, NLGN1,  
NPY1R, STAB2, P2RY12,  
EPGN, P2RY14, ADGRL3,  
HTR2C, CASR, SLC13A5,  
TSPAN1, SLC22A12,  
SLC6A20, GRIK3, GABRB1,  
SLC6A3, TSPAN7, TLR3,  
SLC7A9, SLC22A11, ENPEP,  
CNGB1, SLC7A5, GALR1,  
SLC2A4, SLC2A2, MS4A1,  
MS4A2, SLC4A4, RGR,

SLCO4A1, MRGPRE,  
 PROKR1, MRGPRF, CNGA3,  
 GPR50, GPR52, PTGDR2,  
 FXYD1, SLC38A5, FGFR2,  
 SLC38A3, FXYD4, DRD2,  
 ADCYAP1R1, DRD5,  
 KCNA1, PTK7, KCNA5,  
 SLC22A31, FXYD5,  
 SLCO2A1, P2RY4, FOLR1,  
 CNR1, P2RY1, CNR2,  
 BTN1A1, GRPR, SCN9A,  
 IFITM5, UPK2, GABRD,  
 HCN1, TLR10, SLCO4C1,  
 KLB, GABRA3,  
 TNFRSF13B, SLC6A14,  
 REEP2, SLC6A19, ABCB5,  
 SLC4A10, LYVE1, SLC4A11,  
 P2RX1, P2RX2, SLC13A1,  
 ADRA1A, SLC13A2, CD79B,  
 SLC13A3, CD79A, SCARA5,  
 SLC5A11, SLC5A12,  
 LRRC8E, CORIN, TACR2,  
 LGR6, LGR5, CXCR5,  
 GABRG2, NRXN1, NCR2,  
 SLC7A14, UGT1A1,  
 SLC7A11, TRPM1, SIGLEC6,  
 CHRM2, CLDN1, CNTN2,  
 GPR15, JAM2, GPR12,  
 PLPP4, RHBG, OXTR,  
 CLCNKB, GPR3, TPSG1,  
 SLCO1A2, SCNN1G,  
 SCNN1B, DCLK1, HPN,  
 MPZ, OLR1, MAL,  
 SLC10A2, RNF43, SLCO1B3,  
 FZD10, SLC17A4, SLC17A1,  
 SLCO1B1, SLC6A6, MEP1A,  
 MEP1B, SLC18A3, SLC5A7,  
 SLC14A2

GO:0005578~proteinaceous  
 extracellular matrix

77

2.66E-16

CTHRC1, GLDN, WNT3A,  
 MMP8, ENAM, MMP7,  
 MMP28, MMP3, MMP1,  
 SHH, CHAD, WNT2, OGN,  
 MMP20, WISP2,  
 TNFRSF11B, DSPP, WISP1,

			<p>CILP2, WNT3, WISP3,  CCBE1, TGFBI, COL11A1,  COL10A1, MATN3,  ADAMTS20, SPARCL1,  CILP, MMP13, PRELP,  SLIT3, MMP11, MMP10,  ADAMTS6, AMBN, BGN,  ANOS1, RELN, WNT11,  EPYC, ADAMTS2, CHL1,  ADAMTSL1, MAMDC2,  SPOCK3, ADAMTSL3, VIT,  TIMP1, COL9A3, HPSE2,  COL6A6, CCL21, COL6A5,  AMELX, RPTN, COMP,  ACAN, ADAMTS12, MYOC,  DPT, WNT8B, SBSPON,  HAPLN1, TNXB, PTPRZ1,  DMP1, CHI3L1, EMILIN3,  COL4A6, LAMA1, WNT7B,  OMD, COL19A1, SFRP1,  ZG16, WNT7A</p>
GO:0005198~structural molecule activity	69	7.13E-15	<p>CLDN8, PRPH, CLDN9,  CLDN6, LCE3D, KRT80,  DES, KRT40, SNTB1,  KRT222, KRT83, KRT13,  EPB41L3, KRTAP3-1,  CRCT1, PGM5, BVES,  KRT17, KRT16, KRTAP3-2,  KRT14, KRTAP3-3, OTOG,  SPRR3, CLDN1, CLDN2,  MAP7D2, SNTG2, CLDN16,  KRT6C, KRT6A, CLDN18,  SPRR2G, FLG2, SPRR2F,  CLDN10, SPRR2E, CLDN11,  CLDN14, KRT23, KRT24,  KRT9, FGA, KRT5, SPRR2D,  FGB, SPRR2A, KRT7, KRT1,  KRT3, KRT4, IVL, NEFL,  PRR9, NEFM, PLP1, MPZ,  KRT34, KRT35, CLDN23,  KRT32, KRT38, KRT75,  KRT37, KRT74, LCE1E,  SPRR1A, SPRR1B, KRT78</p>
GO:0016324~apical	73	2.32E-12	<p>ATP1B2, SLC22A12,</p>



plasma membrane

SLC6A20, SLC9A3, AQP5,  
SLC7A9, SLC22A11, AQP6,  
ENPEP, PRKG2, SLC7A5,  
AQP2, KISS1, SLC23A1,  
ANK2, SLC2A2, TDGF1,  
NPC1L1, ATP6V0D2,  
DPEP1, CEACAM1,  
KCNMA1, TRPM6, CLCA4,  
CDHR2, GIF, CDHR5, IL6R,  
SLC26A3, CD36, RHCG,  
MGAM, OTOG, SLC26A9,  
CLDN1, CD300LG, CA4,  
STC1, CPO, SHROOM4,  
KCNA1, OXTR, CNTFR,  
NAALADL1, ATP6V1B1,  
GPR143, P2RY4, FOLR1,  
UPK1A, P2RY1, SCNN1G,  
SCNN1B, UPK2, NOX4,  
HPN, PLET1, CUBN, SI,  
MAL, GJB6, SLC10A2,  
ABCG8, ABCG5, SLC17A4,  
DSG1, P2RX2, SPTBN2,  
S100G, ATP6V0A4, LRP2,  
PDZK1, SLC14A2, SLC5A12

GO:0008544~epidermis  
development

33 2.27E-11

S100A7, LCE3D, SPRR2G,  
SPRR2F, SPRR2E, KRT9,  
DCT, COL7A1, KRT5,  
SPRR2D, SPRR2A, ZNF750,  
POU3F2, CALML5, KRT83,  
KLK7, NTF4, KLK5, KRT31,  
GRHL3, GJB5, EDAR,  
GRHL1, KRT34, KRT32,  
CST6, KRT17, LCE1E,  
SPRR1A, KRT16, SPRR1B,  
KRT14, SPRR3

GO:0000786~nucleosome

35 3.09E-11

HIST1H2AB, HIST1H4L,  
HIST1H2AD, HIST1H2BO,  
HIST2H2AB, HIST1H2BM,  
HIST1H4A, HIST1H2BL,  
HIST1H4B, HIST2H2AC,  
HIST1H2BI, HIST1H2BJ,  
HIST1H4E, HIST1H4F,  
HIST1H4C, HIST1H4D,  
HIST1H3J, HIST1H2BB,

GO:0007267~cell-cell signaling	60	1.64E-09	HIST1H1E, HIST1H1D, HIST1H2BE, HIST1H2BF, HIST1H1B, HIST1H1A, HIST2H3D, HIST1H3A, HIST1H3B, HIST1H2AH, HIST1H3C, HIST1H3D, HIST1H2AJ, HIST1H3F, HIST1H2AM, HIST1H2AL, HIST1H3I EDN3, INSL4, FCRL2, ENPEP, CXCL11, SHH, IL11, GJA3, PGR, WNT2, WISP2, WISP1, WISP3, NMUR2, GATA4, FGF3, CHST4, FGF21, INHA, FGF20, AMH, INHBA, SSTR2, SSTR3, EREG, SIGLEC6, GPR50, CARTPT, FGFR2, IL36G, PPY, CXCL5, CCL8, NMB, CXCL6, CCL26, CALCA, IL17C, PCSK1, ADRB3, IL17A, CCL23, INS, LHX1, CCL21, PCSK5, MLN, BMP3, TRHDE, NTF4, TBX5, TNFSF9, CCL13, LVRN, FJX1, ADRA1A, PYY, GDF15, SST, NR5A1
GO:0005179~hormone activity	31	5.89E-09	TG, VIP, EDN3, PPY, INSL4, INSL5, EDN2, CGB7, GAST, NMB, VGF, C1QTNF9, CALCA, INS, ERFE, APELA, GALP, GUCA2A, APLN, MLN, STC2, IGF2, INHA, INHBB, GCG, INHBA, AMH, UCN2, STC1, PYY, SST
GO:0005886~plasma membrane	529	3.54E-08	SLC9A9, SCN3A, SLC9A3, SLC9A2, FRRS1L, GNG8, AGTR1, ADTRP, AGTR2, MALL, DIRAS2, KCNK9, GRIN2B, GRIN2D, ADAM2, FAP, SERPINE1, GNG3, HTR1D, GNG4, VNN3, GNG7, CLCA1, CLCA4, GRIN2A, LIFR, CDHR5, F7,

SSTR5, SSTR2, SSTR3,  
CD163L1, F5, F2, MGAM,  
MADCAM1, SLC30A10,  
LY6G6D, LY6G6F,  
ARHGEF25, LY6G6C,  
MAGEA1, SORCS3, ADRB3,  
DUSP15, UPK1A, SLC28A1,  
SLC28A3, PCDH10, IL1RN,  
ATP11A, KCNK3, GNGT1,  
PENK, PKP1, CD209,  
AVPR1B, TREML4, CHRND,  
RGS9, CHRNG, TRPV3,  
PRSS41, UNC93A, NBEA,  
LY9, GPR88, ST6GALNAC6,  
SLC23A1, KISS1R, MAPT,  
NMUR2, CEACAM7,  
SLC22A3, MAS1L, STRA6,  
TMEM100, TRPV6, KCNG3,  
DPP6, DPEP1, CEACAM1,  
GHR, PIK3C2G, CACNG8,  
CACNG4, NECTIN4, IL6R,  
CACNG1, FLNC, FLNA,  
EPB41L3, FMN2, CARD14,  
DOK7, CYBRD1, SERPINB2,  
KCNH8, SCN11A, ARL4D,  
KCNH4, NKD1, ALPI, FHL1,  
NPY2R, GNG13, DISP2,  
C2ORF88, ALPP, ITM2C,  
CLEC10A, ITM2A, HTR3E,  
IGSF11, SORBS1, HPSE2,  
MAS1, PCSK9, KCNE2,  
HTR3A, SNAP25, ACSL6,  
HTR3C, ABCA12, SLC8A2,  
IGF2, STAB2, NPY1R,  
TMPRSS5, P2RY12, WNT7B,  
CDH16, PTP4A3, PDE2A,  
P2RY14, CDH19, GFRA1,  
LRP8, LRP2, WNT7A,  
HTR2C, CDH10, GFRA2,  
GFRA3, SLC01B7, TSPAN1,  
SLC13A5, RAB9B,  
SLC6A20, GRIK3, ZAN,  
OR1J1, GRIK5, SLC7A9,  
OR1J4, ENPEP, CYP2W1,

SLC7A5, RELL2, AZGP1,  
APOA1, ANK2, SLC2A4,  
GALR1, UNC5A, SLC2A2,  
TGFB1, C14ORF180, TDGF1,  
UNC5D, UNC5C, SLC51B,  
SLC51A, SIX2, RPH3A,  
NCAM1, TAS2R50,  
ANKRD13B, C2CD4B,  
RELN, C2CD4A, PTGDR2,  
ABCA8, DRD2, TNFRSF12A,  
DRD5, KCNA1, KCNA3,  
CNTFR, KCNA5, SLCO2A1,  
PDE6A, GPR22, AMER2,  
FGA, P2RY4, FGB, P2RY1,  
GRPR, OR51B5, PRIMA1,  
SH3TC2, GABRP, HCN1,  
GABRD, GABRE, TLR10,  
CUBN, SYT10, OR5M11,  
KCNB1, TNFRSF13B,  
SLC6A14, SLC6A19,  
ABCB5, LYVE1, DSG4,  
P2RX1, DSG3, DSG1,  
P2RX2, SLC13A1, LVRN,  
SLC13A2, ADAM20,  
ADRA1A, SLC13A3,  
SLC5A11, CLDN8, LRRC8E,  
CLDN9, CORIN, OR1N2,  
SDCBP2, OR2T10,  
RASL10B, NPC1L1,  
RAET1L, ANO5, TREH,  
SCN7A, NRG2, EVA1A,  
TRPM6, SGK1, EDAR,  
SIGLEC15, SLC7A11,  
TRPM1, TAS2R13, ULBP3,  
CA9, TAS2R19, CHRM2,  
ULBP1, CNTN2, GPR15,  
CLDN2, CNTN1, CA4,  
CNTN4, TREM1, CNTN3,  
CA2, JAM2, GAP43, PLPP4,  
PTCHD1, CLCNKB, OXTR,  
CDH3, CDH7, RGMA,  
ANXA8, SLCO1A2,  
TAS2R46, REN, DNER,  
TAS2R43, SCNN1G,

SCNN1B, SECTM1, PLP1,  
VSTM2A, GNAO1, OLR1,  
TNFSF9, XPNPEP2, GDPD2,  
AJUBA, GCG, SLCO1B3,  
PNOC, TAS2R38, SLCO1B1,  
DSC3, SCN4B, MEP1B,  
PLEKHN1, TAS2R30,  
SLC14A2, SLC36A1,  
CADM3, SYT4, AQP9,  
GLDN, AQP8, CADM2,  
ATP1B2, LYPD8, ADCY5,  
FGFRL1, SYT8, AQP5,  
SYT9, LPAR1, SHH, AQP2,  
APOB, ATP2B3, ATP2B4,  
CLEC4G, IZUMO1, NPSR1,  
CHRNA6, HCAR3, MUC15,  
HCAR2, HCAR1, ADGRB3,  
PRAME, ABCB11, HTR4,  
CCR8, CD36, RHCG, HTR7,  
CCR2, OR2D2, CLEC5A,  
ENPP6, ENPP7, PRLHR,  
GSDMA, GSDMC, FCER2,  
GPR143, KCNMB1,  
CAMKV, SLC11A1, DMD,  
GAD1, FCER1A, CNKSR2,  
OR13H1, TRPC5, TRPC7,  
CELSR3, CELSR1,  
ATP13A4, ABCG2, EPHA5,  
ABCG8, EPHA7, EPHA6,  
ABCG5, SFRP1, SEMA6D,  
EPHA8, ERVW-1, PDZK1,  
PLAU, OR10A5, KCNJ16,  
JPH4, KCNJ15, JPH2,  
SLC15A1, OR10A2, TAS2R3,  
FCRL2, FCRL1, SLC26A2,  
FCRL4, TNFRSF11B,  
FAM129A, KCNMA1,  
PCDH11Y, ACKR1, CD160,  
ACKR2, GPER1, KCNA10,  
GRM4, SLC26A3, SGCG,  
GRM8, SLC26A9, SLC27A6,  
PLA2G3, ADAM12, CHL1,  
PLA2G5, CLDN16, CLDN18,  
LIMS2, SLC39A10, GPM6B,

CLDN10, XKRX, ZBTB16,  
CLDN11, CLDN14, LY6D,  
GPM6A, CD177, CT83,  
PLIN4, CLEC2A, CD22,  
NPFFR1, CAP2, PIRT, SI,  
NLGN1, CBARP, GRIA4,  
ATP1A2, KCNV2, CLDN23,  
DKK1, KREMEN2,  
SLC16A9, ATP6V0A4,  
CASR, SLC22A12, SLC6A3,  
WNT3A, GABRB1,  
SLC22A11, CNGB1, WNT2,  
WNT3, MS4A2, GLP2R,  
SLC4A4, NEGR1, SLCO4A1,  
CA12, CHP2, TNFRSF17,  
MRGPRF, PROKR1, PLCE1,  
LYNX1, CD300LG, ANOS1,  
CD300LD, FGFR2, FXYD1,  
SLC38A5, SLC38A3,  
SNAP91, FXYD4,  
ADCYAP1R1, DSCAML1,  
FXYD6, FOLR1, CNR1,  
CNR2, ENTPD8, MSLN,  
ENTPD3, SLC30A8, AXIN2,  
TESC, SLCO4C1, KLB,  
GABRA3, CPNE7, SLC4A10,  
DIO2, CD79B, CD79A,  
TACR2, LGR6, LGR5,  
CXCR5, CNTNAP3, TAAR1,  
GABRG2, PRKCG, NRXN1,  
NCR2, PRKCB, BVES, PSD,  
CEMIP, CTSG, AOC3, CPM,  
PPP1R12B, RHBG, TRIB3,  
GSG1L, KRT5, KRT1,  
PALM2, PALM3, PLCD1,  
HPN, GPR119, CR2, MPZ,  
MUC21, SLC10A2, GPRC6A,  
RGS16, RGS13, SLC17A7,  
RNF43, RGS20, RGS21,  
SLC17A1, KCNN3, SLC6A6,  
SLC18A3, SLC5A7, MUC16  
SLURP1, ATP1B2, MYBPC3,  
MMRN1, CXCL12, HMCN2,  
AZGP1, WISP2, CGREF1,

GO:0044267~cellular protein metabolic process	34	6.46E-08	<p>DSPP, WISP1, SRPX, WISP3, ADAM2, FAP, TGFBI, CNTNAP3, COL12A1, ROBO2, IZUMO1, CEACAM1, EGFL6, SIGLEC11, CDHR5, CHST4, NECTIN4, CTNNA3, NCAM1, CCR8, AMBN, PGM5, CD36, HEPACAM, SIGLEC6, SIGLEC8, CNTN2, ANOS1, CNTN1, RELN, MADCAM1, CNTN4, CNTN3, COL1A1, MFAP4, ADAM12, CHL1, AOC3, IBSP, CTNND2, PTK7, DSCAML1, CLDN10, CDH3, ITGBL1, IGSF11, LY6D, COL7A1, SORBS1, COL6A6, AMELX, COL6A5, COMP, MSLN, ACAN, CD22, THBS2, DPT, SPP1, HAPLN1, TNXB, OLR1, LRRN2, PCDH10, NLGN1, STAB2, COL4A6, LAMA1, LYVE1, OMD, COL19A1, CDH16, PKP1, EPHA8, DSC3, HABP2, MUC16, ODA, HIST1H4L, MMP1, APOA4, CALCA, APOA1, HIST1H4A, FGA, INS, HIST1H4B, TGFBI, SFTA3, HIST1H4E, SFTPC, HIST1H4F, HIST1H4C, HIST1H4D, SFTPB, NAT8, HIST1H3J, SEMG1, IGF2, MMP13, HIST2H3D, F2, HIST1H3A, HIST1H3B, HIST1H3C, HIST1H3D, PAPP2, IGFBP1, HIST1H3F, CTSG, HIST1H3I, FGF19, CXCL1, CSF2, FGF8, VGF, CXCL12, GDNF, MACC1, IL11, TIMP1, OGN, REG1A, WISP3, AMELX,</p>
GO:0008083~growth factor activity	41	7.10E-08	<p>FGF19, CXCL1, CSF2, FGF8, VGF, CXCL12, GDNF, MACC1, IL11, TIMP1, OGN, REG1A, WISP3, AMELX,</p>

GO:0006508~proteolysis	91	9.77E-08	<p>TDGF1, PTN, ANGPTL3,  NRG2, FGF3, BMP3, NTF4,  NODAL, FGF23, IGF2,  FGF21, INHA, FGF20, OSM,  INHBB, AMH, INHBA,  VEGFD, AMBN, DKK1,  EREG, PPBP, EPGN, F2,  GDF15, BMP7, BMP5  MASP1, CNDP1, PGC,  PRSS41, MMP8, MMP7,  MMP27, ANPEP, MMP28,  MMP3, MMP1, CASP5,  MMP20, ADAM2, FAP,  DPEP3, KLK12, KLK11,  KLK10, CPA1, PRSS33,  DPP6, CFD, LONRF2,  TMPRSS13, DPEP1,  TMPRSS15, CELA3B,  CLCA1, CLCA4,  ADAMTS20, ELANE,  PRSS50, COLEC10, CPXM2,  MMP13, MMP11, MMP10,  ADAMTS6, F5,  TMPRSS11D, TMPRSS11E,  F2, CAPN14, RELN,  TMPRSS11A, ADAM12,  PRSS48, CTSG, CPO,  ADAMTSL1, ADAMTSL3,  PRSS1, NAALADL1, TPSG1,  PCSK2, PCSK1, REN,  PRSS2, ACAN, ADAM33,  FGL2, HGFAC, PRSS55,  PRSS56, KLK7, CPA4, HPN,  KLK8, TRHDE, OLR1,  KLK5, FBXO2, KY,  TMPRSS5, TMPRSS3,  XPNPEP2, LCN1, SFRP1,  MEP1A, LVRN, MEP1B,  ADAM20, LRP8, PAPP2,  CELA2A, PRSS22,  ADAMDEC1, PLAU,  HABP2, TLL1</p>
GO:0004252~serine-type endopeptidase activity	55	1.15E-07	<p>CORIN, MASP1, PRSS41,  MMP8, MMP7, MMP3,</p>



GO:0007218~neuropeptide signaling pathway	30	2.15E-07	MMP1, MMP20, FAP, KLK12, KLK11, KLK10, PRSS33, CFD, TMPRSS13, TMPRSS15, CELA3B, PRSS50, ELANE, COLEC10, GZMB, F7, MMP13, MMP11, MMP10, F5, TMPRSS11D, TMPRSS11E, F2, TMPRSS11A, PRSS48, CTSG, PRSS1, TPSG1, PCSK2, PCSK1, PRSS2, PCSK9, HGFAC, PCSK5, PRSS55, KLK6, KLK7, PRSS56, KLK8, HPN, KLK5, TMPRSS5, TMPRSS3, CMA1, CELA2A, PRSS22, PLAU, HABP2, TLL1 HCRT, PPY, PRLHR, NXPH4, NPY2R, SORCS1, NMB, GPR143, SORCS3, CALCA, KISS1R, GALR1, NMUR2, GALP, NPFFR1, NPSR1, NMU, UCN, PROKR1, NPY1R, GRP, SSTR2, NPY, PENK, PNOC, NPW, CARTPT, GLRA4, PYY, PTGDR2
GO:0030018~Z disc	33	3.17E-07	JPH2, PPP1R12B, PDLIM3, KCNA5, MYOT, MYL9, DES, ATP2B4, ANK2, DMD, NOS1, CRYAB, LDB3, KY, SYNPO2, MYH6, HOMER1, FLNC, NEXN, FLNA, NEBL, IGFN1, MYO18B, TRIM54, PGM5, NEB, CFL2, MYPN, RYR3, ADRA1A, FBXL22, CASQ2, AKAP4
GO:0006814~sodium ion transport	26	3.22E-07	SLC38A3, SLC13A5, SCN3A, ATP1B2, SLC38A8, SLC23A1, SCN9A, SCN7A, SCNN1G, SCNN1B, SLC4A4, SGK1, ATP1A2, SLC10A2, SLC17A8, SLC4A10, SLC4A11, SLC17A4,

GO:0031225~anchored component of membrane	32	3.65E-07	SLC13A1, SCN4B, SLC13A2, SCN11A, SLC13A3, SLC5A7, SLC5A11, SLC5A12 LY6G6D, ENPP6, CPM, ALPI, LYPD8, ITLN1, LY6G6C, CNTFR, ALPP, RGMA, LY6D, CD177, TDGF1, MSLN, CEACAM7, DPEP3, RAET1L, NEGR1, DPEP1, VNN3, PLET1, XPNPEP2, NCAM1, LYNX1, CNTN2, CNTN1, CA4, GFRA1, CNTN4, CNTN3, GFRA2, GFRA3
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KEGG pathway enrichment results for differentially expressed genes.

I	Des	geneID
D	crip	
tion		
h	Neu	GLP2R/PYY/GRIK3/GRIN2D/TACR2/SST/INSL5/EDN3/P2RY1/NPY2
sa	roa	R/ADCYAP1R1/P2RY14/P2RX2/P2RX1/SSTR2/LPAR1/PPY/VIP/CNR
0	ctiv	1/EDN2/GRIK5/P2RY4/AGTR1/AVPR1B/NPY/APLN/CTSG/HTR7/TH
4	e	RB/GABRD/UCN2/GALR1/NMB/OXTR/GRIA4/GRIN2B/HTR4/ADRA
0	liga	1A/NPFFR1/GHR/CHRM2/UCN/SSTR3/PENK/CNR2/GABRE/HTR1D/
8	nd-r	GRIN2A/GABRG2/ADRB3/NPY1R/SSTR5/NMU/KISS1/GCG/F2/NPW/
0	ece	PRSS1/CALCA/HCRT/KISS1R/GABRP/DRD5/DRD2/GRPR/GRM8/CH
	ptor	RNA6/PRSS2/GRP/CHRND/CHRNG/AGTR2/NMUR2/HTR2C/GABRB
	inte	1/MAS1/CALCB/GRM4/PRLHR/TAAR1/GABRA3/GPR50/MLN
	ract	
	ion	
h	Alc	CREB3L3/GNAO1/GRIN2D/GNG7/ADCY5/GNG3/NPY/GRIN2B/GNG
sa	oho	8/MAOB/GRIN2A/TH/HIST1H3J/HIST1H4C/HIST1H2AH/HIST1H4E/
0	lis	HIST1H4B/HIST1H4D/GNG13/HIST3H2BB/HIST1H3B/HIST1H2BO/H
5	m	IST2H2BF/HIST1H2AB/HIST1H2AL/HIST1H3I/HIST1H2BI/HIST1H2
0		AJ/DRD2/GNGT1/HIST2H2AB/GNG4/HIST1H2BL/HIST1H2BE/HIST1
3		H4L/HIST1H2BF/CALML3/HIST2H2AC/HIST1H2AM/HIST1H4A/HIS
4		T1H2AD/HIST2H3D/HIST1H3F/HIST1H2BB/HIST1H2BM/HIST1H3D/
		HIST1H2BJ/SLC6A3/HIST1H3A/HIST1H3C/CALML5/HIST1H4F
h	Sys	ELANE/C7/CTSG/GRIN2B/GRIN2A/HIST1H3J/HIST1H4C/HIST1H2A
sa	tem	H/HIST1H4E/HIST1H4B/HIST1H4D/HIST3H2BB/HIST1H3B/HIST1H2
0	ic	BO/HIST2H2BF/HIST1H2AB/HIST1H2AL/HIST1H3I/HIST1H2BI/HIS
5	lup	T1H2AJ/HIST2H2AB/HIST1H2BL/HIST1H2BE/HIST1H4L/HIST1H2B
3	us	F/HIST2H2AC/HIST1H2AM/HIST1H4A/HIST1H2AD/HIST2H3D/HIST
2	eryt	1H3F/HIST1H2BB/HIST1H2BM/HIST1H3D/HIST1H2BJ/HIST1H3A/HI

2 he ST1H3C/HIST1H4F  
mat  
osu  
s

h Bile SLC51A/ABCG2/CA2/AQP8/SLC51B/ABCB11/SLC4A4/ATP1A2/CYP  
sa secr 3A4/SLC10A2/SLC9A3/ADCY5/NR1H4/ATP1B2/SLCO1B3/ABCG5/S  
0 etio ULT2A1/BAAT/ABCG8/SLCO1B1/SLCO1B7/SLCO1A2/AQP9/UGT2B  
4 n 4  
9  
7  
6

h Sali PRKG2/ATP1A2/ADCY5/ATP2B4/KCNMA1/ATP1B2/BEST2/PRKCB/  
sa var CST1/RYR3/CST2/NOS1/ADRA1A/CST4/LPO/ADRB3/PRKCG/AQP5/  
0 y CST5/ATP2B3/CALML3/PRB1/CALML5/PRB2/PRH2/TRPV6/MUC7  
4 secr  
9 etio  
7 n  
0

h Fat APOA1/APOB/APOA4/FABP2/MOGAT2/PLA2G2C/PLA2G5/FABP1/C  
sa dig D36/CEL/ABCG5/NPC1L1/ABCG8/PLA2G3/PLA2G2F/LIPF/PNLIP  
0 esti  
4 on  
9 and  
7 abs  
5 orpt  
ion

h Dru GSTA2/UGT1A8/HPGDS/GSTM5/CYP3A4/UGT1A10/ADH1C/GSTA1/  
sa g ADH1B/FMO5/UGT2B15/UGT2B17/CYP2D6/UGT2A3/MAOB/UGT1A  
0 met 1/UGT1A5/ALDH3B2/ADH1A/UGT1A9/UGT1A3/UGT1A4/UGT2B4  
0 abo  
9 lis  
8 m -  
2 cyt  
och  
rom  
e  
P45  
0

h Prot MEP1B/SLC36A1/ATP1A2/SLC6A19/SLC9A3/COL11A1/ATP1B2/SLC  
sa ein 7A9/COL10A1/MEP1A/COL7A1/SLC8A2/SLC15A1/COL4A6/COL6A5  
0 dig /COL1A1/XPNPEP2/COL12A1/COL9A3/KCNJ13/CELA3B/PRSS1/PRS  
4 esti S2/COL6A6/CELA2A/CPA1  
9 on  
7 and

4 abs  
 orpt  
 ion

h Che SULT1A2/GSTA2/UGT1A8/HPGDS/GSTM5/CYP3A4/UGT1A10/ADH  
 sa mic 1C/GSTA1/ADH1B/SULT1A1/UGT2B15/UGT2B17/UGT2A3/CYP2C18  
 0 al /UGT1A1/UGT1A5/ALDH3B2/ADH1A/UGT1A9/SULT2A1/UGT1A3/U  
 5 carc GT1A4/UGT2B4  
 2 ino  
 0 gen  
 4 esis

h Reti UGT1A8/CYP3A4/UGT1A10/RDH5/ADH1C/ADH1B/DHRS9/UGT2B1  
 sa nol 5/UGT2B17/LRAT/UGT2A3/CYP2C18/UGT1A1/UGT1A5/RDH16/AD  
 0 met H1A/UGT1A9/UGT1A3/UGT1A4/CYP26A1/UGT2B4  
 0 abo  
 8 lis  
 3 m  
 0

h Met GSTA2/UGT1A8/HPGDS/GSTM5/CYP3A4/UGT1A10/ADH1C/GSTA1/  
 sa abo ADH1B/UGT2B15/UGT2B17/CYP2D6/UGT2A3/UGT1A1/UGT1A5/AL  
 0 lis DH3B2/ADH1A/UGT1A9/SULT2A1/UGT1A3/UGT1A4/UGT2B4  
 0 m  
 9 of  
 8 xen  
 0 obi  
 otic  
 s by  
 cyt  
 och  
 rom  
 e  
 P45  
 0

h Ster UGT1A8/CYP3A4/DHRS11/UGT1A10/HSD3B2/HSD17B2/HSD11B2/U  
 sa oid GT2B15/UGT2B17/UGT2A3/SULT2B1/AKR1C4/UGT1A1/UGT1A5/U  
 0 hor GT1A9/UGT1A3/UGT1A4/CYP19A1/UGT2B4  
 0 mo  
 1 ne  
 4 bios  
 0 ynt  
 hesi  
 s

h Asc UGT1A8/UGT1A10/UGT2B15/UGT2B17/UGT2A3/UGT1A1/UGT1A5/  
 sa orb UGT1A9/MIOX/UGT1A3/UGT1A4/UGT2B4  
 0 ate

0 and  
 0 alda  
 5 rate  
 3 met  
 abo  
 lis  
 m  
 h Min TRPM6/ATP1A2/MT1M/MT1F/SLC26A3/SLC6A19/MT1G/MT1H/SLC  
 sa eral 9A3/MT1X/ATP1B2/MT2A/CYBRD1/MT1E/SLC26A9/S100G/TRPV6  
 0 abs  
 4 orpt  
 9 ion  
 7  
 8  
 h Pen UGP2/UGT1A8/UGT1A10/UGT2B15/AKR1B10/UGT2B17/UGT2A3/U  
 sa tose GT1A1/UGT1A5/UGT1A9/UGT1A3/UGT1A4/UGT2B4  
 0 and  
 0 glu  
 0 cur  
 4 ona  
 0 te  
 inte  
 rco  
 nve  
 rsio  
 ns  
 h Cyt IL6R/BMP3/LIFR/CCL23/CXCL12/TNFRSF13B/INHBA/TNFRSF17/C  
 sa oki CL14/CNTFR/TNFRSF12A/GDF15/CCL28/BMP5/IL11/CCR2/CCL8/C  
 0 ne- XCL3/GHR/CCL13/CXCL1/TNFSF9/CXCR5/IL23A/AMH/CCL21/CXC  
 4 cyt L2/CCL19/CXCL8/BMP7/IL1A/CXCL5/CSF2/PPBP/EDAR/CXCL17/C  
 0 oki CR8/IL1RN/IL17C/CXCL6/OSM/INHBB/TNFRSF11B/CXCL11/CCL26/  
 6 ne IFNE/IL36RN/INHA/NODAL/IL36G/IL17A/IL17F/IL36B/IFNK  
 0 rece  
 ptor  
 inte  
 ract  
 ion  
 h Tas SCNN1B/SCN9A/P2RY1/SCNN1G/P2RX2/P2RY4/HTR3E/SCN3A/HT  
 sa te R3A/HTR1D/TAS2R38/GNG13/HTR3C/TAS2R30/TAS2R19/TAS2R3/T  
 0 tran AS2R13/GRM4/TAS2R46/TAS2R43/TAS2R50/GABRA3  
 4 sdu  
 7 ctio  
 4 n  
 2

h Pan CA2/SLC4A4/ATP1A2/SLC26A3/CLCA4/ADCY5/ATP2B4/KCNMA1/  
sa crea ATP1B2/PRKCB/PLA2G2C/PLA2G5/CEL/PRKCG/CELA3B/PLA2G3/P  
0 tic RSS1/CLCA1/ATP2B3/PRSS2/PLA2G2F/CELA2A/PNLIP/CPA1  
4 secr  
9 etio  
7 n  
2

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