

Supplementary Table 2. GO analysis of mRNAs in GM-related CEN

Term	Count	PValue	Genes
GO:0030054~cell junction	67	2.37E-24	GABRB3, CYFIP2, GABRB2, SNAP25, CHRM3, PTPRR, TENM2, CHRM1, DOC2A, CLSTN1, RIMS2, ATCAY, NETO1, FRRS1L, RUSC1, PSD3, DLGAP1, HOMER3, BSN, DLGAP2, PRIMA1, UNC13C, EPHA4, SVOP, UNC13A, CXADR, KCNAB2, SYNGR3, GABRG2, SYN1, OLFM3, SNPH, SHANK2, KCTD16, GRIA1, NRN1, NRXN1, KCNA2, CAMK2A, TPRG1L, CABP1, HCAR3, GRIN2A, SV2B, STXBP5, SRGAP2, LRRC4C, GABRD, PACSIN1, KCNJ4, LGI1, SYT4, GABBR2, GABRA1, PRRT2, SYT1, KCNB1, ATP2B2, GRIN2B, ARHGAP32, GLRB, CDK5, LRFN1, GJB6, RIMBP2, CPEB3, FERMT3
GO:0014069~postsynaptic density	36	2.87E-17	GRIA1, CHRM1, CLSTN1, CAMK2A, ITPR1, CABP1, LRP8, NRGN, GRIN2A, GNG3, NETO1, RUSC1, PSD3, NPTN, DLGAP1, HOMER3, CTNNA2, SRGAP2, BSN, DLGAP2, CAP2, NTRK2, EPHA4, DMTN, IFNGR1, KCNAB2, SYN1, CNKSR2, ARHGAP32, DAB1, CDK5, LRFN1, CPEB3, CRYAB, SHANK2, CDK5R1
GO:0005886~plasma membrane	223	7.11E-16	EPHB6, SERPINE1, NUDT1, GLDN, ICAM1, EFR3A, HOMER3, B2M, EPHB1, SCN1A, CALN1, PRIMA1, UNC13C, EPHA4, CXADR, UNC5A, ENTPD3, DAPK1, SLC11A1, CACNA2D2, UNC5D, GABRG2, SYTL3, GPR162, KCNQ2, KCNQ5, UBA52, NRN1, PCDH10, MAGED1, STXBP1, BCL10, THY1, PCDH19, PPL, ABR, UGT8, GRIN2A, PRKAR2B, KCNMB2, STXBP5, RAB11FIP2, SCN3B, AFAP1L2, FZD3, PRRT2, MAGEE1, L1CAM, GRIN2B, SNAP91, PNOC, FXYD7, FAT3, GABRB3, PTPRT, GABRB2, TENM2, C2CD5, PTPRR, CLIC4, GPR26, DOC2A, TENM4, GPR22, LITAF, CAMKV, RAC2, CDV3, FCER1G, EXOC8, SLC32A1, IFNGR1, SLC2A12, RHOG, SLC39A10, PTH2R, GFRA2, ANO3, BACE1, CNKSR2, F8, GPRC5A, CDCP1, RGS7BP, PCYOX1, PTGER4, CD63, KCNA2, TRAK2, RELN, FLNA, CSMD3, FLNC, PAK3, GABRD, CD55, CAP2, GABBR2, GABRA1, DMTN, MOG, KCNB1, GAD1, STAT3, STXBP5L, VMP1, XK, RIT2, KCNS1, RIMBP2, CDK5R1, CHRM3, CHRM1, DGKB, IRS1, RGS4, IL18RAP, RGS3, FRRS1L, TBC1D30, CCRL2, CAPN3, SH3GL2,

			CD93, NPY1R, IPCEF1, RUNDC3A, DISP2, CACNB2, MAG, CACNB3, CACNB4, SLC9A6, SCN8A, MADD, ADAM8, LY6H, STEAP2, GRIA1, SHC3, C5AR1, GPR88, SLC1A1, GPR85, ITPR1, CACNA1B, SLC1A2, GPR83, CABP1, SLC1A6, EFNA5, CACNA1E, HSP90B1, RASGRP3, RHOBTB2, HCAR3, KCNV1, SRGAP2, KIAA0319, PACSIN1, RAP1GAP2, CD164, SYT4, VCAM1, SYT1, CAV1, NFKBIA, NBEA, CDK5, LRFN1, PI4KA, CNTN3, GNB5, ITGB1, SNAP25, ITGAM, TCIRG1, HTR2A, TREM1, SGIP1, PLAUR, SHROOM2, SSTR1, KCNAB2, FGR, ADORA2B, CDH12, BLVRB, CDH13, ITGA5, VSTM2A, CAMK1G, SHANK2, CDH18, CDH19, CAMK2B, NRXN1, CAMK2A, ASAP2, LRP8, GNG3, SV2B, SV2A, CNR1, CACNG2, KCNJ3, UBQLN2, OPCML, KCNJ4, KCNJ6, SLC12A5, PLCL1, KCNIP4, SYT16, ATP2B2, SYT13, ATP2B1, MAPK10, FAM155A, CLEC2B, GLRB, UNC79, HCN1
GO:0007268~chemical synaptic transmission	39	8.25E-16	GRIA1, GABRB2, SNAP25, DOC2A, NRXN1, SLC1A1, CACNA1B, SLC1A2, HTR2A, SLC1A6, CACNA1E, GRIN2A, KCNMB2, KIF5A, DLGAP1, BSN, GABRD, UNC13C, GABBR2, UNC13A, SLC12A5, SYT1, GAD1, SSTR1, GRIN2B, SYN1, SNAP91, CACNB2, CACNB3, CACNB4, RIT2, SYPL1, GLRB, CDK5, LRFN1, KCNQ2, PNOC, KCNQ5, SCN2B
GO:0045211~postsynaptic membrane	35	1.69E-14	GABRB3, GRIA1, GABRB2, CHRM3, TENM2, CHRM1, CLSTN1, CABP1, GRIN2A, NETO1, RUSC1, PSD3, DLGAP1, HOMER3, SRGAP2, LRRC4C, GABRD, DLGAP2, KCNJ4, GABBR2, NTRK2, GABRA1, EPHA4, MAGEE1, KCNB1, GRIN2B, GABRG2, CNKSR2, ARHGAP32, GLRB, CDK5, LRFN1, CPEB3, SHANK2, KCTD16
GO:0043005~neuron projection	32	6.59E-11	CYFIP2, SNAP25, TENM2, NRSN1, DOC2A, TENM4, STMN2, GRIN2A, ATCAY, SV2B, MAP2, SV2A, KIF5A, RAP1GAP2, GABBR2, NMB, UNC13A, CXADR, SLC32A1, SYT1, BCL11B, SSTR1, GRIN2B, CNKSR2, DAB1, RIT2, SNPH, CDH13, CPEB3, CAMK1G, SHANK2, ATF4
GO:0045202~synapse	27	2.94E-10	GABRB3, CYFIP2, GABRB2, CHRM3, TENM2, NRN1, CHRM1, ATCAY, FRRS1L, DLGAP1, WASF1, GABRD, PPFIA4, SH3GL2, PACSIN1, PRIMA1, LGI1, GABRA1, PRRT2, ATP2B2, NMNAT2, CACNB4, OLFM3, SLC9A6, RIMBP2, ITGA5, CPEB3
GO:0030425~dendrite	36	1.98E-09	PCSK2, GRIA1, CHRM3, TENM2, CHRM1, AMIGO1, KCNA2, CACNA1B, HTR2A, THY1,

			LRP8, GNG3, RELN, ATCAY, DPYSL5, NPTN, BSN, EPHB1, SYT4, EPHA4, FZD3, SLC32A1, MAGEE1, IFNGR1, KCNB1, PLK2, RAB27A, SYN1, SLC9A6, GLRB, CDK5, AGO2, PNO, CPEB3, CDK5R1, HCN1
GO:0030424~axon	26	9.67E-08	ATL1, AMIGO1, KCNA2, STMN2, HTR2A, LRP8, NRG, ATCAY, CNR1, NEFL, CTNNA2, LDLRAP1, BSN, EPHB1, SYT4, EPHA4, FZD3, UNC13A, KCNB1, GABRG2, BACE1, CDK5, SCN2A, CRYAB, CDK5R1, HCN1
GO:0007399~nervous system development	30	1.03E-07	PCSK2, CHRM3, NRSN1, NRN1, CHRM1, DOC2A, GDA, CXCL1, EFNA5, CHRDL1, NRG, DPYSL5, SCN3B, LGI1, MEF2C, SRRM4, RBFOX1, STAT3, L1CAM, GFRA2, NELL1, GJB1, FGF14, GLRB, SCN8A, KCNQ2, MPPED2, CNTN3, LY6H, SCN2B
GO:0008076~voltage-gated potassium channel complex	16	1.78E-07	KCNJ4, SNAP25, KCNJ6, CNTNAP1, KCNB1, AMIGO1, KCNIP4, KCNA2, KCNAB2, KCNV1, KCNS1, KCNT2, KCNMB2, KCNQ2, KCNQ5, KCNJ3
GO:0048786~presynaptic active zone	10	2.48E-07	RIMS2, UNC13C, FZD3, UNC13A, SLC32A1, SV2A, GAD1, BSN, PPFIA4, SYN1
GO:0017075~syntaxin-1 binding	8	9.28E-07	SNAP25, UNC13A, SYT1, SNPH, DAPK1, STXBP1, STXBP5, SYBU
GO:0034765~regulation of ion transmembrane transport	16	3.87E-06	KCNJ4, CLIC4, KCNJ6, KCNB1, KCNA2, CACNA1B, CACNA2D2, CACNA1E, KCNV1, SCN8A, KCNQ2, KCNQ5, SCN2A, KCNJ3, HCN1, SCN1A
GO:0042734~presynaptic membrane	12	5.21E-06	RIMS2, UNC13C, SNAP25, GRIN2A, UNC13A, SYT1, SNPH, NRXN1, KCNA2, CAMK2A, NPTN, KCTD16
GO:0005509~calcium ion binding	48	5.42E-06	TENM2, C2CD5, DOC2A, DGKB, PCDH10, NRXN1, CLSTN1, CACNA1B, ITPR1, CABP1, PCDH19, CACNA1E, THBS1, LRP8, NCALD, HSP90B1, RASGRP3, PRRG3, SPOCK3, SLIT1, CAPN3, CALN1, SYT4, TPM4, CD93, SYT1, KCNIP4, SYT16, ATP2B2, SYT13, HPCAL4, LRP1B, SYTL3, AIF1L, NELL2, PDP1, NELL1, VSNL1, PITPNM3, CDH12, CDH13, MICU3, ADAM8, FAT3, CD69, CDH18, CDK5R1, CDH19
GO:0007269~neurotransmitter secretion	11	5.58E-06	SNAP25, UNC13A, SLC32A1, SYT1, SNPH, NRXN1, GAD1, STXBP1, CACNA1B, PPFIA4, SYN1

GO:0007528~neuromuscular junction development	8	2.75E-05	NTRK2, CACNB2, CACNB3, UNC13A, CACNB4, COL4A1, CACNA2D2, CACNG2
GO:0014047~glutamate secretion	8	2.75E-05	NTRK2, SNAP25, SYT1, STXBP1, SLC1A1, SLC1A2, SLC1A6, PPFIA4
GO:0035584~calcium-mediated signaling using intracellular calcium source	7	3.38E-05	FIS1, NTRK2, TENM2, VCAM1, DMTN, CCL20, FKBP1B
GO:0071805~potassium ion transmembrane transport	15	4.82E-05	SLC12A5, KCNB1, KCNIP4, KCNA2, KCNAB2, KCNV1, KCNS1, SLC9A6, KCNT2, KCNMB2, KCNQ2, KCNQ5, TMEM38A, TMEM38B, HCN1
GO:0060078~regulation of postsynaptic membrane potential	7	6.15E-05	FGF14, SCN8A, SCN2A, SCN3B, HCN1, SCN1A, SCN2B
GO:0030426~growth cone	14	1.21E-04	SNAP25, TENM2, CXADR, NRSN1, TSHZ3, EXOC8, STMN2, THY1, TIAM2, CDK5, CNR1, NEFL, SHANK2, CDK5R1
GO:0009986~cell surface	36	1.34E-04	EPHB6, GRIA1, ROBO2, ITGB1, PTPRT, CD63, CLIC4, ITGAM, NRXN1, C5AR1, CLSTN1, SLC1A2, THBS1, ICAM1, GRIN2A, RSPO2, NPTN, BSN, PPFIA4, CD55, EPHA4, FZD3, FCER1G, VCAM1, CXADR, CD93, UNC5D, L1CAM, GRIN2B, PDIA4, BACE1, RTN4RL1, LRFN1, ADAM8, ITGA5, CRYAB
GO:0051899~membrane depolarization	7	1.34E-04	CACNB3, CACNB4, CAV1, CACNA1B, CACNG2, SCN3B, CACNA1E
GO:0043025~neuronal cell body	25	1.39E-04	GRIA1, NRSN1, NRXN1, STMN2, CACNA1B, HTR2A, LRP8, NRGN, DPYSL5, PRKAR2B, KIF5A, FLNA, PPARGC1A, SCN1A, FZD3, SLC12A5, ATP2B2, FBXO31, CNKSR2, DAB1, CDK5, SNPH, PNOC, SHANK2, CDK5R1
GO:0007157~heterophilic cell-cell adhesion via plasma membrane cell adhesion molecules	9	2.19E-04	CD164, TENM2, VCAM1, CXADR, TENM4, NRXN1, AMIGO1, ITGA5, ICAM1

GO:0008021~synaptic vesicle	12	2.25E-04	GRIA1, SNAP25, GRIN2A, SVOP, SYPL1, SYT1, SV2B, SV2A, TPRG1L, STXBP5, SYNGR3, SYN1
GO:0007411~axon guidance	16	2.69E-04	ROBO2, LGI1, TENM2, UNC5A, NRXN1, ARX, UNC5D, L1CAM, EFNA5, RELN, DPYSL5, ZNF280B, KIF5A, SLIT1, EPHB1, CDK5R1
GO:0005887~integral component of plasma membrane	72	2.73E-04	GABRB3, EPHB6, GABRB2, CHRM3, CNTNAP1, TENM2, CHRM1, TENM4, HTR2A, TCIRG1, PTPRH, ICAM1, CCRL2, EPHB1, EPHA4, FCER1G, CXADR, IFNGR1, SLC11A1, SLC2A12, NPY1R, PLAUR, SLC39A10, PTH2R, SSTR1, TMEM130, GABRG2, TM4SF1, BACE1, CACNB2, GPRC5A, SYPL1, NRG3, ADORA2B, ADAM8, STEAP2, PTGER4, CD63, NRXN1, KCNA2, C5AR1, GPR88, SLC1A1, GPR83, THY1, SLC1A6, TRHDE, RASGRP3, KCNV1, HCAR3, GRIN2A, CNR1, KCNMB2, GABRD, CD55, NTRK2, CD164, GABBR2, GABRA1, SLC12A5, CAV1, ATP2B2, ATP2B1, SYT13, GRIN2B, CLEC2B, GLRB, CALY, CD69, ATP13A3, SCN2A, HCN1
GO:0030276~clathrin binding	9	2.73E-04	SYT4, DOC2A, SYT1, SYT16, SYT13, LDLRAP1, SNAP91, NCALD, SYTL3
GO:0005891~voltage-gated calcium channel complex	7	3.17E-04	CACNB2, CACNB3, CACNB4, CACNA1B, CACNA2D2, CACNG2, CACNA1E
GO:0005248~voltage-gated sodium channel activity	6	3.88E-04	SCN8A, SCN2A, SCN3B, HCN1, SCN1A, SCN2B
GO:0030672~synaptic vesicle membrane	9	4.24E-04	SYT4, SVOP, DOC2A, SLC32A1, SYT1, SV2B, SV2A, SYNGR3, SYN1
GO:0005249~voltage-gated potassium channel activity	9	5.85E-04	KCNV1, KCNS1, KCNT2, KCNB1, KCNA2, KCNQ2, KCNQ5, KCNAB2, HCN1
GO:0006810~transport	25	6.13E-04	GABRB3, GABRB2, CACNA1B, CACNA1E, GRIN2A, ATCAY, CACNG2, LDLRAP1, GABRD, GABRA1, SLC12A5, ATP2B2, ATP2B1, GRIN2B, GABRG2, RBP7, SLC25A37, CACNB3, XK, GJB1, CACNB4, SYPL1, SLC9A6, PITPNM3, SFT2D2
GO:0007214~gamma-aminobutyric acid signaling	6	6.50E-04	GABBR2, GABRB2, GABRA1, PLCL1, GABRG2, ATF4

pathway			
GO:0001518~voltage-gated sodium channel complex	5	9.12E-04	SCN8A, SCN2A, SCN3B, SCN1A, SCN2B
GO:0043679~axon terminus	8	9.50E-04	CHRM3, EPHA4, CHRM1, SLC9A6, PNOC, KCNA2, KCNAB2, PACSIN1
GO:0051965~positive regulation of synapse assembly	9	9.74E-04	LINGO2, NTRK2, NRXN1, AMIGO1, SLITRK3, CLSTN1, EFNA5, EPHB1, CBLN2
GO:0090314~positive regulation of protein targeting to membrane	6	9.93E-04	FIS1, C2CD5, CDK5, KCNB1, MTCL1, CDK5R1
GO:0006614~SRP-dependent cotranslational protein targeting to membrane	11	0.001104535	RPS19, RPS5, RPL12, RPL11, RPL36, RPL35, RPL8, RPL29, RPS21, UBA52, RPL19
GO:0007165~signal transduction	59	0.001157602	GABRB3, PTPRT, CHRM3, CNTNAP1, TENM2, CHRM1, CXCL8, TENM4, IRS1, CXCL1, FGF1, LITAF, NRGN, DPYSL5, RAC2, CAPN3, SH3GL2, UNC5A, IFNGR1, DAPK1, PLAUR, UNC5D, HPCAL4, GPRC5A, EEF1D, CAMK2B, GRIA1, SHC3, NRXN1, C5AR1, PEX11B, GPR85, ITPR1, TRHDE, LRP8, ABR, CCL8, WIF1, MICAL1, SPOCK3, CHN1, SRGAP2, GABRD, CAP2, CD164, NMB, BCL11B, BCL11A, CCL20, STAT3, MAPK10, ARHGAP32, PLCXD3, FGF14, CAMK4, PNOC, PI4KA, GNB5, CD69
GO:0045055~regulated exocytosis	5	0.001221074	CDK5, RAB26, VPS41, RAB11FIP2, STEAP2
GO:2000310~regulation of N-methyl-D-aspartate selective glutamate receptor activity	5	0.001221074	MEF2C, RELN, DAPK1, NRXN1, PPARGC1A
GO:0005515~protein binding	325	0.001334181	CYFIP2, SLC35B4, FRMPD4, POP1, WIPF1, SERPINE1, STMN2, NUDT1, ICAM1, UXT, ZXDA, RASSF2, RPS19, DPYSL5, RUSC1, FAM19A1, HOMER3, B2M, EPHB1, CHGB, EPHA4, MEF2C, RBFOX1, CXADR, ENTPD3, DAPK1, SERPINF1, HPCAL4, RNASE1, GABRG2, RBP7, WDR82, PSME4, KCNQ5, UBA52, TSPYL4, TSPYL5, ATF4, TSHZ3,

		<p>MAGED1, STXBP1, MYCBP2, PEX11B, BCL10, THY1, GSPT2, PPL, KLK6, GRIN2A, MAP2, PRKAR2B, MICAL1, RAB11FIP2, PPARGC1A, SCAI, SNX6, CDK18, FIS1, NMB, FZD3, PHC2, MAGEE1, BCL11B, IQSEC1, PLK2, SETD1B, RAB27A, GRIN2B, SNAP91, CALY, AGO2, FXYD7, FBXL2, CPEB3, DZIP1, PCSK2, PTPRT, ROBO2, PTPRR, CLIC4, WDR47, NRSN1, DOC2A, OTUD7B, PTPRH, PRPF19, LITAF, AACS, CTSL, TNFAIP8L1, RSPO2, NEFL, DLGAP1, LDLRAP1, GPRASP1, DLGAP2, FCER1G, ELOVL4, EXOC8, IFNGR1, RHOG, PTH2R, SORCS1, SERPINB9, PROX1, SYN1, PNMA6A, BACE1, F8, TUBB2A, GPRC5A, CDCP1, VSNL1, PITPNM3, MPPED2, PELI1, ARHGEF3, MAPRE1, CRYAB, PTGER4, NAPB, CD63, SP100, SATB1, PELI3, ATL1, RPL12, KCNA2, RPL11, NPL, PRICKLE1, BEGAIN, TRAK2, NEURL1B, PNMA1, WIF1, CHN1, MICALL1, SPP1, STAT4, PAK6, FLNA, FLNC, CTNNA2, MAP4K5, PAK3, GABRD, CD55, ZNF223, CAP2, RUNX1T1, RPL19, GABBR2, TRMT10C, DMTN, KCNB1, CCL20, GAD1, STAT3, SPRYD7, G0S2, PNMA2, BLCAP, VMP1, PDP1, KBTBD6, XK, RIT2, KCNS1, KLHL6, FKBP1B, CD69, CDK5R1, CHRM3, NCF2, IRS1, CLSTN1, PLOD3, JADE3, OGDHL, FGF1, TMEM140, RIMS2, ATCAY, RGS3, CFL2, KIF5A, CAPN3, MAP3K9, PPFIA4, SH3GL2, SYBU, C11ORF87, TPM4, CD93, LMO4, RPS5, LMO3, NPY1R, RUNDC3A, LZTFL1, PDIA4, CACNB2, PLA2G16, OLFM3, COL4A1, DOK6, SCN8A, DNAJB11, MADD, ADAM8, ZNF436, LY6H, FTL, GRIA1, SHC3, FAM114A1, CUL3, SLC1A1, GPR85, ITPR1, CACNA1B, SLC1A2, CABP1, HSP90B1, RASGRP3, NEUROD1, IP6K1, SRGAP2, LRRC4C, KIAA0319, PACSIN1, RAP1GAP2, ZNF540, CD164, MOAP1, SYT4, KLHDC3, CBX6, SYT1, CAV1, ESRRG, FBXO33, REEP1, NFKBIA, ARHGAP32, C1ORF216, RALYL, IL6, DAB1, FGF14, CDK5, HOOK1, PI4KA, GNB5, ITGB1, SNAP25, CNTNAP1, ITGAM, CXCL8, PLEK, NGLY1, TNFAIP3, YBX1, LDB2, HK2, ELAVL2, ADAMTS3, CYTIP, SRGN, SGIP1, PLAUR, NGB, SHROOM2, VSTM2L, UBE2QL1, FGR, GFOD1, RTN4RL1, EEF1D, ELF4, CRY2, ITGA5, SSX2IP, SHANK2, CAMK2B, BCL2A1, USP11, NRXN1, CAMK2A, ASAP2, LRP8, THBS1, NCALD, DDN, GNG3, SV2B, RAB26, MAL2, CACNG2, FNIP1, WASF1, CRYM, KCNJ3, UBQLN2, KCNJ4,</p>
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			LGII, KCNJ6, SYT16, NAP1L2, CABLES1, ATP2B2, ATP2B1, ATOX1, NELL2, MAPK10, NELL1, GLRB, ALOX5AP, VPS41, LNX1, EIF3G, VIP, PFKM, PTPN5
GO:0060291~long-term synaptic potentiation	7	0.001449515	NTRK2, SNAP25, GRIN2A, RELN, PLK2, NPTN, SHANK2
GO:0071333~cellular response to glucose stimulus	8	0.001559601	NEUROD1, MEF2C, KCNB1, GJB6, SERPINF1, PPARGC1A, AACS, ICAM1
GO:0045956~positive regulation of calcium ion-dependent exocytosis	5	0.00158572	SYT4, SYT1, CDK5, KCNB1, STXBP1
GO:0048791~calcium ion-regulated exocytosis of neurotransmitter	7	0.001665801	RIMS2, SYT4, DOC2A, SYT1, SYT16, SYT13, SYTL3
GO:0034220~ion transmembrane transport	17	0.00178228	GABRB3, GRIA1, GABRB2, GABRA1, ATP2B2, TCIRG1, ATP2B1, GRIN2B, GABRG2, NCALD, ANO3, ARHGEF9, GLRB, FKBP1B, FXYD7, UBA52, UNC79
GO:0005883~neurofilament	4	0.001782366	NEFL, LDLRAP1, DLGAP2, SHANK2
GO:0071420~cellular response to histamine	4	0.001794515	GABRB3, GABRB2, GABRA1, GABRG2
GO:0005245~voltage-gated calcium channel activity	7	0.001822166	CACNB2, CACNB3, CACNB4, CACNA1B, CACNA2D2, CACNG2, CACNA1E
GO:0015459~potassium channel regulator activity	7	0.001822166	KCNV1, KCNS1, AMIGO1, KCNMB2, KCNIP4, FLNA, KCNAB2
GO:0000184~nuclear-transcribed mRNA catabolic process, nonsense-mediated decay	12	0.00201612	RPS19, RPS5, RPL12, RPL11, RPL36, RPL35, RPL8, RPL29, RPS21, GSPT2, UBA52, RPL19
GO:0006413~translational	13	0.002034959	RPS5, RPL12, RPL11, RPL8, RPS19, AGO2, RPL36, EIF3G, RPL35, RPL29, UBA52, RPS21,

initiation			RPL19
GO:0086010~membrane depolarization during action potential	6	0.002058612	SCN8A, CACNA1B, SCN2A, SCN3B, CACNA1E, SCN1A
GO:0019228~neuronal action potential	6	0.002058612	SCN8A, GPR88, KCNMB2, KCNA2, SCN2A, SCN1A
GO:0031594~neuromuscular junction	8	0.002145544	ITGB1, EPHA4, UNC13A, CXADR, CDK5, SV2A, SYNGR3, CDK5R1
GO:0051260~protein homooligomerization	15	0.002360294	LGI1, FIS1, SYT1, KCNB1, ATL1, CAV1, SLC1A1, KCNA2, PEX11B, BCL10, KCNV1, KCNS1, LNX1, CRYAB, KCTD16
GO:0043547~positive regulation of GTPase activity	33	0.002365244	ITGB1, CAMK2B, SHC3, IRS1, CAMK2A, ASAP2, THY1, FGF1, RASGRP3, ICAM1, RGS4, ABR, GRIN2A, CCL8, RGS3, PSD3, CHN1, NEFL, STXBP5, FNIP1, SRGAP2, RAP1GAP2, IQSEC1, CCL20, GRIN2B, GFRA2, STXBP5L, TIAM2, ARHGAP32, ARHGEF9, MADD, ARHGEF3, GNB5
GO:1902711~GABA-A receptor complex	5	0.002508178	GABRB3, GABRB2, GABRA1, GABRD, GABRG2
GO:0032809~neuronal cell body membrane	5	0.002508178	UNC5A, KCNB1, AMIGO1, KCNA2, ATP2B1
GO:0010976~positive regulation of neuron projection development	10	0.002745331	CAMK2B, NTRK2, IL6, RELN, RIT2, CNR1, BCL11A, SERPINF1, STMN2, NPTN
GO:0004890~GABA-A receptor activity	5	0.003022365	GABRB3, GABRB2, GABRA1, GABRD, GABRG2
GO:0004871~signal transducer activity	16	0.003121369	UNC13C, SHC3, UNC13A, IRS1, PLK2, PLCL1, STAT3, LITAF, RASGRP3, GNG3, PLCXD3, EEF1D, STAT4, FLNA, CAPN3, GNB5
GO:0007568~aging	14	0.003441305	VCAM1, SLC32A1, BCL2A1, SERPINF1, STAT3, NUDT1, ATP2B1, HTR2A, LITAF, IL6,

			CNR1, GJB6, CRYAB, PPARGC1A
GO:0061337~cardiac conduction	7	0.003517434	KCNJ4, CACNB2, CACNB3, CACNB4, KCNIP4, CACNA2D2, CACNG2
GO:0008331~high voltage-gated calcium channel activity	4	0.003568369	CACNB2, CACNB3, CACNA1B, CACNA1E
GO:0045121~membrane raft	16	0.003646354	ITGB1, CXADR, UNC5A, CAV1, ATP2B1, BCL10, THY1, ICAM1, BACE1, RIT2, PRKAR2B, RTN4RL1, CNR1, MAL2, EPHB1, CD55
GO:1902476~chloride transmembrane transport	10	0.003698681	GABRB3, GABRB2, GABRA1, CLIC4, SLC12A5, GLRB, GABRD, GABRG2, PCYOX1, ANO3
GO:0019905~syntaxin binding	9	0.003730038	NAPB, SYT4, DOC2A, STXBP1, SYT16, STXBP5, SYT13, SYTL3, STXBP5L
GO:0048167~regulation of synaptic plasticity	6	0.003782887	MEF2C, FGF14, CDK5, PLK2, ATP2B2, CPEB3
GO:0050885~neuromuscular process controlling balance	7	0.003933989	ABR, CNTNAP1, RBFOX1, NRXN1, GPR88, NEFL, ATP2B2
GO:0005516~calmodulin binding	15	0.003953602	CAMK2B, UNC13A, SYT1, DAPK1, CAMK2A, ATP2B2, ATP2B1, NRG1, RGS4, RIT2, CAMKV, MAP2, CAMK4, FBXL2, CAMK1G
GO:0019083~viral transcription	11	0.004077226	RPS19, RPS5, RPL12, RPL11, RPL36, RPL35, RPL8, RPL29, RPS21, UBA52, RPL19
GO:0050839~cell adhesion molecule binding	8	0.00411281	ITGB1, TENM2, VCAM1, CXADR, TENM4, NRXN1, NPTN, ADAM8
GO:0051015~actin filament binding	12	0.004222916	UXT, CACNB2, TPM4, WIPF1, CFL2, WIPF3, SHROOM2, FLNA, CTNNA2, FLNC, PKNOX2, AIF1L
GO:0071222~cellular response to lipopolysaccharide	11	0.00434417	MEF2C, IL6, CXCL8, CCL20, SERPINE1, CMPK2, TNFAIP3, B2M, PPARGC1A, LITAF, ICAM1
GO:0043524~negative regulation of neuron apoptotic process	12	0.004510543	GABRB3, GABRB2, DLX1, NTRK2, MEF2C, STXBP1, C5AR1, VSTM2L, NEFL, ADAM8, NES, PPARGC1A

GO:0072659~protein localization to plasma membrane	8	0.004720359	CACNB3, C2CD5, FCER1G, STXBP1, KCNIP4, ZDHHC23, FLNA, SCN3B
GO:0001886~endothelial cell morphogenesis	4	0.004908223	COL18A1, CLIC4, PLOD3, STC1
GO:1900273~positive regulation of long-term synaptic potentiation	4	0.004908223	GRIN2A, RELN, NPTN, NRGN
GO:0004683~calmodulin-dependent protein kinase activity	5	0.005276203	CAMK2B, DAPK1, CAMK4, CAMK2A, CAMK1G
GO:0019894~kinesin binding	6	0.005416372	ATCAY, CLSTN1, KIF5A, KCNA2, LRP8, SYBU
GO:0090023~positive regulation of neutrophil chemotaxis	5	0.00544417	CXCL8, C5AR1, RAC2, CXCL1, CXCL3
GO:0007229~integrin-mediated signaling pathway	10	0.005594234	ITGB1, FGR, ADAMTS3, ITGAM, FCER1G, CUL3, PLEK, ADAM8, ITGA5, FERMT3
GO:0017158~regulation of calcium ion-dependent exocytosis	6	0.00562147	SYT4, DOC2A, SYT1, SYT16, SYT13, SYTL3
GO:0005925~focal adhesion	24	0.005678336	ITGB1, TPM4, RPS5, RPL12, CAV1, RHOG, PLAUR, THY1, RPL8, L1CAM, HSP90B1, AIF1L, ICAM1, RPS19, PNMA1, PI4KA, RAC2, FLNA, CDH13, FLNC, ITGA5, WASF1, B2M, RPL19
GO:0006813~potassium ion transport	9	0.005774584	KCNJ4, KCNV1, KCNJ6, KCNS1, KCNMB2, KCNA2, KCNQ2, KCNJ3, HCN1
GO:0007155~cell adhesion	27	0.005785999	ROBO2, PTPRT, COL18A1, CNTNAP1, ITGAM, PCDH10, CLSTN1, THY1, HAPLN4, THBS1, ICAM1, RELN, SPP1, CTNNA2, OPCML, CD164, EPHA4, VCAM1, MOG, L1CAM, MAG, COL6A3, CDH13, CNTN3, ITGA5, SSX2IP, FREM3
GO:0043197~dendritic spine	10	0.005891149	ITGB1, GRIA1, EPHA4, ARHGAP32, TENM2, PRKAR2B, FRMPD4, CRYAB, SHANK2, CDK5R1

GO:0016021~integral component of membrane	200	0.006038137	EPHB6, SLC35B4, GLDN, HS6ST2, ICAM1, RNF112, NDST3, EPHB1, SCN1A, CALN1, PRIMA1, EPHA4, UNC5A, ENTPD3, SLC11A1, GLCE, MCEMP1, UNC5D, TMEM170B, FNDC9, GABRG2, TM4SF1, GPR162, WDR82, ASPHD2, CTXN3, FREM3, ASTN1, PCDH10, SLC35D2, PCDH19, UGT8, GRIN2A, CYP4X1, PGBD5, KCNMB2, STXBP5, SCN3B, SCAI, PRRT3, FZD3, PRRT2, ST8SIA1, L1CAM, BRI3BP, GJB1, NCEH1, TMEM98, GJB6, FXYD7, TMCC3, FAT3, SCN2A, GABRB3, PTPRT, ROBO2, GABRB2, PTPRR, GPR26, NRSN1, GPR22, NAT14, LITAF, KCNT2, FCER1G, SSR4, SLC32A1, IFNGR1, SLC39A10, PTH2R, SORCS1, ANO3, BACE1, F8, GPRC5A, CDCP1, PITPNM3, MICU3, PTGER4, GRAMD1B, CD63, SLC43A3, FAXC, ATL1, ZDHHC23, CSMD3, GABRD, WDR17, GABBR2, GABRA1, MOG, ATRNL1, LHFPL4, FAM189A1, BLCAP, STXBP5L, VMP1, DPY19L2, KBTBD6, XK, CD69, CLSTN1, TMEM140, SERTM1, ABHD13, IL18RAP, ATCAY, FRRS1L, CCRL2, TMEM38A, MAP3K9, TMEM38B, SYBU, C11ORF87, TMEM178B, CD93, NPY1R, TMEM130, LZTFL1, DISP2, PLA2G16, MAG, C1ORF115, SYPL1, SLC9A6, SCN8A, MADD, ADAM8, STEAP2, GRIA1, SLC1A1, GPR85, ITPR1, SLC1A2, GPR83, SLC1A6, EFNA5, LRRC4C, KIAA0319, CD164, TMEM132C, SYT4, VCAM1, SYT1, CAV1, EPHX4, TVP23A, LRP1B, REEP1, LRFN1, MANS1, CNTNAP1, ITGAM, TCIRG1, TREM1, NETO1, NPTN, SVOP, PLAUR, KCNAB2, SYNGR3, C15ORF48, NRG3, SNPH, ADORA2B, CDH12, ITGA5, B4GALT6, SFT2D2, VSTM2A, SHANK2, CDH18, CDH19, NRXN1, LRP8, PRRG3, SV2B, SV2A, CNR1, CLMN, SLITRK3, MAL2, CHSY3, KCNJ3, KCNJ4, LINGO2, CMTM7, NTRK2, SLC12A5, KIAA1549L, ATP2B2, ATP2B1, NELL2, SLC25A37, FAM155A, ALOX5AP, ATP13A3, PTPN5, UNC79, HCN1
GO:0030593~neutrophil chemotaxis	8	0.0061043	CCL8, CXADR, CXCL8, FCER1G, CCL20, C5AR1, CXCL3, TREM1
GO:0005251~delayed rectifier potassium channel activity	6	0.00612334	KCNV1, KCNS1, KCNB1, KCNA2, KCNQ2, KCNQ5
GO:0006887~exocytosis	9	0.006210223	VMP1, UNC13C, SYT4, CCL8, SYT16, RAB27A, STXBP5, SYTL3, STXBP5L

GO:0042593~glucose homeostasis	10	0.006369513	NEUROD1, IL6, NMB, KCNB1, IRS1, CNR1, CRY2, STAT3, PFKM, STXBP5L
GO:0007156~homophilic cell adhesion via plasma membrane adhesion molecules	13	0.006468921	ITGB1, ROBO2, PTPRT, PCDH10, AMIGO1, CLSTN1, PCDH19, NPTN, CDH12, CDH13, FAT3, CDH18, CDH19
GO:0005267~potassium channel activity	6	0.00689271	KCNA2, KCNQ2, KCNIP4, TMEM38A, TMEM38B, HCN1
GO:0022625~cytosolic large ribosomal subunit	8	0.007098254	RPL12, RPL11, RPL36, RPL35, RPL8, RPL29, UBA52, RPL19
GO:0048813~dendrite morphogenesis	6	0.00715033	ITGB1, CDK5, MAP2, CAMK2A, ELAVL4, CTNNA2
GO:0008022~protein C-terminus binding	14	0.007249272	RBFOX1, SYT1, NCF2, CACNA1B, ATP2B2, BCL10, HPCAL4, SNTG1, AGO2, NEFL, HOMER3, MAPRE1, PFKM, ATF4
GO:0050900~leukocyte migration	11	0.007415393	ITGB1, MAG, ITGAM, CXADR, FCER1G, CAV1, C5AR1, ITGA5, L1CAM, TREM1, ICAM1
GO:0007010~cytoskeleton organization	13	0.007480438	CNTNAP1, DMTN, ACTL6B, THY1, PPL, UGT8, TUBB6, FMNL2, TUBB2A, MICAL1, PAK6, CTNNA2, CAP2
GO:0035418~protein localization to synapse	4	0.00809757	RELN, CDK5, NRXN1, BSN
GO:0060996~dendritic spine development	4	0.00809757	SLC12A5, SLC9A6, SRGAP2, EPHB1
GO:0005829~cytosol	134	0.008203923	EPHB6, CYFIP2, WIPF1, DGKB, NCF2, IRS1, PANK1, GDA, WIPF3, NUDT1, OGDHL, FGF1, RPL8, RGS4, NUDT11, EFR3A, RGS3, RPS19, DPYSL5, KIF5A, RPL36, CAPN3, RPL35, HOMER3, PPFIA4, EPHB1, SH3GL2, MEF2C, TPM4, RPS5, IPCEF1, RUNDC3A, LZTFL1, TIAM2, PLA2G16, CACNB3, CACNB4, HECW1, MADD, PSME4, CMPK2, RPL29, STEAP2, UBA52, FTL, SHC3, CUL3, STXBP1, THY1, BCL10, GSPT2, HSP90B1, RHOBTB2, ABR,

			PRKAR2B, IP6K1, SRGAP2, PACSIN1, LHPP, SNX6, RAP1GAP2, MOAP1, KLHDC3, PLK2, FBXO31, NFKBIA, ARHGAP32, DAB1, NBEA, CDK5, HOOK1, GJB6, AGO2, PI4KA, GNB5, RPS21, GABRB2, SNAP25, CLIC4, NGLY1, PLEK, TNFAIP3, HTR2A, HK2, AACS, RAC2, NEFL, UPP1, LDLRAP1, EXOC8, RHOG, SERPINB9, KCNAB2, SYN1, FGR, ARHGEF9, VSNL1, EEF1D, PELI1, ARHGEF3, BLVRB, MAPRE1, CRYAB, TRIM56, CAMK2B, PELI3, RPL12, CAMK2A, RPL11, NPL, PRICKLE1, NCALD, CHN1, FLNA, FLNC, CTNNA2, PAK3, RPL19, NTRK2, PPP1R14A, DMTN, STAT3, KCNIP4, CABLES1, ATOX1, MAPK10, FMNL2, CAMK4, VPS41, FKBP1B, ALOX5AP, EIF3G, PFKM, CDK5R1
GO:0043204~perikaryon	10	0.008553884	PCSK2, EPHA4, CDK5, KCNB1, AMIGO1, KCNA2, NGB, CRYAB, DDN, ASTN1
GO:0007159~leukocyte cell-cell adhesion	5	0.008705175	ITGB1, VCAM1, ITGA5, ICAM1, FERMT3
GO:0046875~ephrin receptor binding	5	0.009723004	EPHA4, CDK5, CHN1, EFNA5, CDK5R1
GO:0031012~extracellular matrix	19	0.00995177	COL18A1, CD93, RPS5, SERPINF1, RPL12, TFPI2, RPL11, SERPINE1, THBS1, HSP90B1, ADAMTS3, RPS19, COL4A1, COL5A2, SPOCK3, FLNA, COL6A3, NES, FREM3
GO:1901215~negative regulation of neuron death	6	0.009953651	CHGA, IL6, CDK5, SERPINF1, STAT3, PPARGC1A
GO:0017157~regulation of exocytosis	5	0.010023358	RIMS2, SYT1, RAB26, STXBP5, STXBP5L
GO:0005314~high-affinity glutamate transmembrane transporter activity	3	0.010100423	SLC1A1, SLC1A2, SLC1A6
GO:2001046~positive regulation of integrin-mediated signaling pathway	3	0.010275427	CD63, DMTN, FLNA
GO:0043065~positive regulation	19	0.011539118	ITGB1, MOAP1, CSRNP3, BCL2A1, PNMA3, PNMA2, TIAM2, NEUROD1, ABR, IL6,

of apoptotic process			GRIN2A, ARHGEF9, RASSF2, PNMA1, CNR1, ARHGEF3, MAP3K9, UBA52, ATF4
GO:0005544~calcium-dependent phospholipid binding	7	0.011707385	SYT4, C2CD5, DOC2A, SYT1, SYT16, SYT13, SYTL3
GO:0033268~node of Ranvier	4	0.012185209	SCN8A, KCNQ2, SCN2A, SCN1A
GO:0007215~glutamate receptor signaling pathway	4	0.012263792	GRIN2A, KCNB1, SSTR1, GRIN2B
GO:0061003~positive regulation of dendritic spine morphogenesis	4	0.012263792	CAMK2B, RELN, PAK3, LRP8
GO:0004872~receptor activity	15	0.012774348	EPHB6, ITGB1, CHRM3, UNC13C, CNTNAP1, UNC13A, CD93, NRXN1, PLAUR, TREM1, GFRA2, ICAM1, IL18RAP, RTN4RL1, SV2A
GO:0006906~vesicle fusion	7	0.013202173	SYT4, C2CD5, DOC2A, SYT1, SYT16, SYT13, SYTL3
GO:0031623~receptor internalization	6	0.013430966	ITGB1, GRIA1, CXCL8, FCER1G, CAV1, LDLRAP1
GO:0005088~Ras guanyl-nucleotide exchange factor activity	10	0.013591016	CAMK2B, GRIN2A, SHC3, IRS1, CAMK2A, NEFL, FGF1, GFRA2, GRIN2B, RASGRP3
GO:0051056~regulation of small GTPase mediated signal transduction	11	0.013842061	RAP1GAP2, TIAM2, ABR, ARHGAP32, ARHGEF9, CHN1, RHOG, RAC2, ARHGEF3, SRGAP2, RHOBTB2
GO:0000165~MAPK cascade	17	0.014305631	CAMK2B, MEF2C, SHC3, IRS1, CUL3, CAV1, CAMK2A, FGF1, GFRA2, GRIN2B, RASGRP3, GRIN2A, RIT2, PSME4, NEFL, PAK3, UBA52
GO:0048488~synaptic vesicle endocytosis	4	0.014727962	SYT1, CDK5, SH3GL2, PACSIN1
GO:0060292~long term synaptic depression	4	0.014727962	GRIA1, PLK2, STXBP1, SHANK2
GO:0048471~perinuclear region	32	0.015508091	ITGB1, CYFIP2, SNAP25, CLIC4, PTPRR, STMN2, CABP1, BCL10, HSP90B1, RASGRP3,

of cytoplasm			PRKAR2B, KIF5A, SPP1, MAL2, FLNA, PACSIN1, CALN1, RAP1GAP2, CHGA, SYT4, DMTN, MAGEE1, CAV1, SERPINF1, SLC2A12, NELL1, PLA2G16, DAB1, KCNS1, EIF3G, CDH13, CDK5R1
GO:0043195~terminal bouton	7	0.016417875	UNC13C, NTRK2, UNC13A, SYT1, SV2A, STXBP1, SYN1
GO:0055072~iron ion homeostasis	5	0.016561011	SLC25A37, SLC11A1, STEAP2, B2M, FTL
GO:0007613~memory	7	0.016584877	GRIN2A, NETO1, CNR1, PLK2, HTR2A, ITGA5, SHANK2
GO:2000811~negative regulation of anoikis	4	0.017451157	ITGB1, NTRK2, CAV1, ITGA5
GO:0042789~mRNA transcription from RNA polymerase II promoter	4	0.017451157	STAT3, C5AR1, FLNA, ATF4
GO:0042552~myelination	6	0.017645608	XK, AMIGO1, SCN8A, MAL2, SCN2A, KLK6
GO:0031175~neuron projection development	9	0.018052701	LG11, IL6, ATCAY, UNC5A, CDK5, MAP2, CLMN, MICALL1, CDK5R1
GO:0007417~central nervous system development	10	0.018455869	ROBO2, UGT8, RELN, SHC3, MOG, HPCAL4, HAPLN4, NES, SH3GL2, KLK6
GO:0032587~ruffle membrane	8	0.018802151	ITGB1, FGR, C2CD5, SNTG1, PLEK, ITGA5, AIF1L, PACSIN1
GO:0016337~single organismal cell-cell adhesion	9	0.019057707	VMP1, CYFIP2, TENM2, VCAM1, CD93, ADAM8, CTNNA2, THY1, ICAM1
GO:0030574~collagen catabolic process	7	0.019145653	COL18A1, ADAMTS3, COL4A1, CTSL, COL5A2, COL6A3, KLK6
GO:0015269~calcium-activated potassium channel activity	4	0.019963293	KCNT2, KCNMB2, TMEM38A, TMEM38B
GO:0005884~actin filament	7	0.020318267	DMTN, TPM4, WIPF1, WIPF3, RAC2, FLNA, AIF1L
GO:0006935~chemotaxis	10	0.020328309	CMTM7, CCL8, CXCL8, CCL20, C5AR1, CCRL2, PLAUR, RAC2, CXCL1, L1CAM

GO:1903861~positive regulation of dendrite extension	4	0.020435518	RIMS2, SYT4, UNC13A, SYT1
GO:0010596~negative regulation of endothelial cell migration	4	0.020435518	SP100, SERPINF1, STC1, THBS1
GO:0060326~cell chemotaxis	7	0.020521835	CCL8, VCAM1, CCL20, C5AR1, RHOG, CXCL1, EPHB1
GO:0060998~regulation of dendritic spine development	3	0.020646913	CAMK2B, MEF2C, CPEB3
GO:0019227~neuronal action potential propagation	3	0.020646913	CNTNAP1, FKBP1B, SCN1A
GO:0051932~synaptic transmission, GABAergic	3	0.020646913	GABRB2, GABRA1, GABRG2
GO:1901385~regulation of voltage-gated calcium channel activity	3	0.020646913	CACNB2, CACNB3, CACNB4
GO:0097264~self proteolysis	3	0.020646913	TENM2, TENM4, CAPN3
GO:0048812~neuron projection morphogenesis	6	0.020892629	UGT8, CNTNAP1, SLC9A6, NEFL, SRGAP2, PACSIN1
GO:0005230~extracellular ligand-gated ion channel activity	5	0.022232205	GABRB3, GABRB2, GABRA1, GABRD, GABRG2
GO:0005178~integrin binding	9	0.022411052	ITGB1, VCAM1, CXADR, ITGA5, THY1, FGF1, THBS1, ICAM1, FERMT3
GO:0034707~chloride channel complex	6	0.022453611	GABRB3, GABRB2, GABRA1, CLIC4, GABRD, GABRG2
GO:0002931~response to ischemia	5	0.022882883	MEF2C, CAV1, CAMK2A, PPARGC1A, HK2
GO:0050796~regulation of	7	0.023472131	NEUROD1, SNAP25, KCNB1, CNR1, ITPR1, CACNA2D2, CACNA1E

insulin secretion			
GO:0042802~identical protein binding	36	0.023650379	ROBO2, COL18A1, SP100, MAGED1, STXBP1, ATL1, TPRG1L, TNFAIP3, NPL, BCL10, PRPF19, THBS1, MICALL1, NEFL, B2M, SH3GL2, CAP2, EPHA4, PHC2, CXADR, SYT1, DAPK1, CAV1, STAT3, LZTFL1, CNKSR2, NFKBIA, RALYL, RIT2, HOOK1, VPS41, MAPRE1, CRYAB, PFKM, FTL, HCN1
GO:0046716~muscle cell cellular homeostasis	4	0.023682039	IL6, CFL2, CAPN3, PFKM
GO:0008045~motor neuron axon guidance	4	0.023682039	EPHA4, CDK5, CHN1, SLIT1
GO:0031290~retinal ganglion cell axon guidance	4	0.023682039	ROBO2, SLIT1, EFNA5, EPHB1
GO:0048260~positive regulation of receptor-mediated endocytosis	4	0.023682039	SGIP1, SERPINE1, LDLRAP1, B2M
GO:0048013~ephrin receptor signaling pathway	8	0.02402974	EPHB6, EPHA4, CHN1, PAK3, EFNA5, GRIN2B, EPHB1, CDK5R1
GO:0030659~cytoplasmic vesicle membrane	10	0.02417517	KCNJ4, BACE1, C2CD5, CLIC4, GPRC5A, CAMKV, CALY, STXBP5, RAB11FIP2, PACSIN1
GO:0007420~brain development	13	0.024853389	ROBO2, SYT4, SYT1, SHROOM2, ATP2B1, PROX1, PCDH19, ABR, RELN, COL4A1, SNPH, NES, CDK5R1
GO:0009897~external side of plasma membrane	14	0.024901835	ITGB1, VCAM1, FCER1G, THY1, THBS1, ICAM1, IL6, RTN4RL1, CDH13, CD69, ITGA5, B2M, ASTN1, KCNJ3
GO:0016020~membrane	90	0.025151449	PCSK2, ITGB1, PTPRT, CYFIP2, SNAP25, CHRM1, DOC2A, PLEK, STMN2, CHD5, PRPF19, RPL8, HK2, ICAM1, ABHD13, RAB42, KCNT2, RPS19, NKIRAS1, KIF5A, RPL36, RAC2, RPL35, TMEM38B, B2M, SERPINB1, TPM4, EXOC8, IFNGR1, SLC11A1, RPS5, SERPINB9, PTH2R, SORCS1, KSR2, KCNAB2, CNKSR2, TIAM2, CACNB3, VSNL1, DNAJB11, ASPHD2,

			RPL29, SFT2D2, FTL, GRAMD1B, CUL3, RPL12, MYCBP2, PEX11B, SLC1A1, RPL11, SLC1A2, ITPR1, EFNA5, SLC1A6, TRHDE, LRP8, HSP90B1, BEGAIN, ABR, SV2B, KCNMB2, FLNA, LRRC4C, RPL19, CMTM7, SYT4, FIS1, PRRT2, VCAM1, ATRNL1, IQSEC1, CAV1, ATP2B1, VMP1, REEP1, DAB1, NCEH1, RIT2, CDK5, AGO2, VPS41, FKBP1B, ALOX5AP, PI4KA, ATP13A3, FBXL2, CDK5R1, FERMT3
GO:0000187~activation of MAPK activity	9	0.025939045	MAPK10, GNG3, ADORA2B, MADD, C5AR1, FGF1, PAK3, THBS1, UBA52
GO:0071277~cellular response to calcium ion	6	0.026454415	MEF2C, CLIC4, DMTN, SYT1, ALOX5AP, CAPN3
GO:0005242~inward rectifier potassium channel activity	4	0.02657362	KCNJ4, KCNJ6, KCNQ5, KCNJ3
GO:0061202~clathrin-sculpted gamma-aminobutyric acid transport vesicle membrane	3	0.026809039	SLC32A1, SYT1, GAD1
GO:0016081~synaptic vesicle docking	3	0.026931046	SNAP25, UNC13A, SNPH
GO:0021707~cerebellar granule cell differentiation	3	0.026931046	NRXN1, ATP2B2, PROX1
GO:0001504~neurotransmitter uptake	3	0.026931046	SNAP25, SV2B, SV2A
GO:2000463~positive regulation of excitatory postsynaptic potential	4	0.027190657	RIMS2, RELN, NETO1, NRXN1
GO:0001618~virus receptor activity	7	0.027359786	ITGB1, CXADR, MOG, HTR2A, ITGA5, CD55, ICAM1
GO:0005262~calcium channel	7	0.027359786	CACNB2, CACNB3, GRIN2A, CACNB4, CACNA1B, CACNG2, CACNA1E

activity			
GO:0086091~regulation of heart rate by cardiac conduction	5	0.027809611	CACNB2, CAV1, SCN3B, KCNJ3, SCN2B
GO:0019233~sensory perception of pain	6	0.028498696	GRIN2A, CDK5, CNR1, KCNA2, NPY1R, SCN3B
GO:0016301~kinase activity	15	0.02864326	NTRK2, DAPK1, CAMK2A, PLAUR, NRGN, NELL2, CNKSR2, NELL1, CDK5, PRKAR2B, PI4KA, CMPK2, MAP3K9, PACSIN1, CDK5R1
GO:0043209~myelin sheath	11	0.029871684	NAPB, SNAP25, CNTNAP1, CNRIP1, STXBP1, NEFL, GNB5, THY1, CRYAB, SYN1, PACSIN1
GO:0030175~filopodium	7	0.029906086	TIAM2, ITGB1, EPHA4, TENM2, VCAM1, CXADR, CDK5
GO:0060333~interferon-gamma-mediated signaling pathway	7	0.030196568	CAMK2B, SP100, VCAM1, IFNGR1, CAMK2A, B2M, ICAM1
GO:0007611~learning or memory	5	0.0304916	MEF2C, GRIN2A, SHC3, MAN2B1, GRIN2B
GO:0050772~positive regulation of axonogenesis	4	0.030960351	ROBO2, NTRK2, AMIGO1, NEFL
GO:0035249~synaptic transmission, glutamatergic	4	0.030960351	NAPB, UNC13A, SHC3, CDK5
GO:0016324~apical plasma membrane	17	0.033137885	FZD3, MTCL1, CAV1, SLC1A1, SHROOM2, RAB27A, STC1, ATP2B2, TCIRG1, ATP2B1, THY1, CACNB3, GJB6, MAL2, PFKM, CD55, SHANK2
GO:0032591~dendritic spine membrane	3	0.033723601	GRIA1, ATP2B1, DDN
GO:1900027~regulation of ruffle assembly	3	0.033875428	CAV1, RHOG, ICAM1
GO:0097120~receptor	3	0.033875428	RELN, NETO1, NRXN1

localization to synapse			
GO:2001223~negative regulation of neuron migration	3	0.033875428	NRG3, STAT3, SRGAP2
GO:0002237~response to molecule of bacterial origin	3	0.033875428	CXCL8, TNFAIP3, BCL10
GO:0035725~sodium ion transmembrane transport	7	0.033986988	SCN8A, SHROOM2, SCN2A, SCN3B, HCN1, SCN1A, SCN2B
GO:0006874~cellular calcium ion homeostasis	8	0.034874626	XK, CCL8, SV2A, CAV1, STC1, ATP13A3, ATP2B1, HTR2A
GO:0016079~synaptic vesicle exocytosis	4	0.034989222	UNC13C, SNAP25, UNC13A, CDK5
GO:0050829~defense response to Gram-negative bacterium	6	0.035219818	CHGA, IL6, SLC11A1, SERPINE1, VIP, B2M
GO:0030141~secretory granule	7	0.035651492	CHGA, SYPL1, RAB27A, STXBP5, THBS1, CHGB, STXBP5L
GO:0021766~hippocampus development	6	0.037659562	DLX1, RELN, SLC32A1, CDK5, NEFL, CDK5R1
GO:0030182~neuron differentiation	8	0.038484635	NTRK2, MEF2C, FZD3, CDK5, SNPH, ATP2B2, PROX1, CDK5R1
GO:0050770~regulation of axonogenesis	4	0.039274576	EPHA4, CHN1, SLIT1, LRRC4C
GO:0051966~regulation of synaptic transmission, glutamatergic	4	0.039274576	MEF2C, UNC13A, SYT1, CNR1
GO:0016023~cytoplasmic, membrane-bounded vesicle	10	0.039996401	DMTN, NRSN1, CD93, WIPF1, RUSC1, SCN8A, C5AR1, HTR2A, SYBU, SNX6
GO:0007612~learning	6	0.04020032	NTRK2, SLC12A5, PRKAR2B, NRXN1, ELAVL4, SHANK2

GO:0000900~translation repressor activity, nucleic acid binding	3	0.040763395	ZNF540, CELF4, CPEB3
GO:0015467~G-protein activated inward rectifier potassium channel activity	3	0.040763395	KCNJ4, KCNJ6, KCNJ3
GO:0090129~positive regulation of synapse maturation	3	0.041429507	CAMK2B, RELN, NRXN1
GO:0061001~regulation of dendritic spine morphogenesis	3	0.041429507	EPHA4, CDK5, CDK5R1
GO:0002675~positive regulation of acute inflammatory response	3	0.041429507	IL6, ALOX5AP, ADAM8
GO:0050884~neuromuscular process controlling posture	3	0.041429507	CNTNAP1, PRRT2, SCN1A
GO:0048306~calcium-dependent protein binding	6	0.041499304	SNAP25, SYT1, NRXN1, STMN2, CABP1, SYN1
GO:0048365~Rac GTPase binding	5	0.041548274	NCF2, CAV1, FLNA, SRGAP2, WASF1
GO:0003779~actin binding	16	0.042016626	ITGB1, CAMK2B, DMTN, WIPF1, SHROOM2, SYN1, NCALD, ANLN, FMNL2, HOOK1, SNTG1, RUSC1, CLMN, MICAL1, WASF1, CAP2
GO:0030018~Z disc	9	0.04224549	CFL2, SCN8A, FKBP1B, CAPN3, FLNA, FLNC, SCN3B, CRYAB, SCN1A
GO:0046426~negative regulation of JAK-STAT cascade	5	0.042698345	NEUROD1, DAB1, RTN4RL1, CAV1, LRRC4C
GO:0005096~GTPase activator activity	16	0.042806956	RAP1GAP2, ASAP2, THY1, STXBP5L, RASGRP3, RGS4, TIAM2, ARHGAP32, ABR, RGS3, TBC1D30, CHN1, STXBP5, TBC1D12, GNB5, SRGAP2

GO:0002102~podosome	4	0.043552322	VCAM1, TPM4, ADAM8, FERMT3
GO:0035235~ionotropic glutamate receptor signaling pathway	4	0.043812999	GRIA1, GRIN2A, GRIN2B, CDK5R1
GO:0051602~response to electrical stimulus	4	0.043812999	IL6, FZD3, GJB6, KCNJ3
GO:0070588~calcium ion transmembrane transport	9	0.044527488	CACNB2, GRIN2A, CACNB4, CACNA1B, CACNA2D2, ATP2B2, ATP2B1, CACNG2, CACNA1E
GO:0042493~response to drug	17	0.047083383	COL18A1, FZD3, SLC12A5, GAD1, STAT3, SLC1A2, HTR2A, THBS1, LRP8, AACCS, ICAM1, NEUROD1, IL6, GRIN2A, DAB1, PPARGC1A, B2M
GO:0005003~ephrin receptor activity	3	0.048758027	EPHB6, EPHA4, EPHB1
GO:0019992~diacylglycerol binding	3	0.048758027	UNC13C, UNC13A, RASGRP3
GO:0043194~axon initial segment	3	0.049328057	SCN8A, KCNQ2, SCN1A
GO:0030517~negative regulation of axon extension	3	0.049545348	CDK5, BCL11A, CDK5R1
GO:0043306~positive regulation of mast cell degranulation	3	0.049545348	FGR, FCER1G, ADORA2B
GO:0010763~positive regulation of fibroblast migration	3	0.049545348	DMTN, PAK3, THBS1
GO:0046718~viral entry into host cell	7	0.049608881	ITGB1, CXADR, MOG, HTR2A, ITGA5, CD55, ICAM1
GO:0022008~neurogenesis	5	0.04969288	NEUROD1, GRIN2A, BCL11B, BHLHE22, EPHB1
GO:0031410~cytoplasmic	14	0.049907414	DMTN, NRSN1, WIPF1, CAV1, C5AR1, HTR2A, BACE1, CALY, SLC9A6, RUSC1, SCN8A,

vesicle		ITGA5, SYBU, UBQLN2
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