

**Chap. 2 Supplemental Table 2. Significant gene ontology (GO) categories for genes that showed significant strain x sex treatment interaction.**

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
GO:2000177	regulation of neural precursor cell proliferation	35/105	1.01 E-02	<i>Btg2, Trp53, Hif1a, Vegfa, Foxo3, Dll4, Lims2, Gata2, Cx3cr1, Ctsz, Adcyap1, Nes, Gli3, Fzd9, Adgrg1, Setd1a, Cdon, Fzd3, Mapk8, Rhoa, Vegfc, Cttna1, Bdnf, Lims1, Foxo1, Foxg1, Ascl1, Lyn, Prox1, Ptpnz1, Gak, Rapgef1, Otp, Aspm, Kctd11</i>
GO:0021801	cerebral cortex radial glia guided migration	13/25	5.02 E-03	<i>Cdk5r2, Cdk5r1, Syne2, Gli3, Adgrg1, Sun2, Lrp8, Dab2ip, Lamb1, P2ry12, Mboat7, Foxg1, Reln</i>
GO:0022029	telencephalon cell migration	24/69	2.61 E-02	<i>Srf, Lhx6, Arx, Cdk5r2, Fezf2, Cxcr4, Ccdc141, Cdk5r1, Dixdc1, Fut10, Syne2, Gli3, Adgrg1, Cxcl12, Sun2, Lrp8, Dab2ip, Lamb1, P2ry12, Rhoa, Mboat7, Pou3f3, Foxg1, Reln</i>
GO:0061351	neural precursor cell proliferation	55/171	1.66 E-03	<i>Btg2, Nde1, Trp53, Id4, Hif1a, Arx, Vegfa, Foxo3, Dll4, Lims2, Cxcr4, Gata2, Arhgef2, Cx3cr1, Ctsz, Dixdc1, Rora, Adcyap1, Fzd6, Nes, Rab10, Gli3, Ephb1, Fzd9, Fabp7, Ifi20, Adgrg1, Setd1a, Cdon, Fzd3, Mapk8, Rhoa, Vegfc, Rpgrip1, Cttna1, Bdnf, Lims1, Foxo1, Wnt7a, Pou3f3, Foxg1, Ascl1, Lyn, Tacc2, Prox1, Rrm1, Ptpnz1, Gak, Emx2, Rapgef1, Otp, Aspm, Kctd11, Rere, Dbn1</i>
GO:0072091	regulation of stem cell proliferation	26/77	2.79 E-02	<i>Trp53, Hmgb2, Hif1a, Vegfa, Atxn1l, Hnrnpu, Sox18, Cx3cr1, Sox17, Gli3, Setd1a, Fzd3, Eif2ak2, Mapk8, Vegfc, Ago3, Taf4b, Cttna1, Dgcr8, Bdnf, Foxg1, Otp, Aspm, Kctd11, Pdcd2, Yap1</i>
GO:0008347	glial cell migration	23/55	2.73 E-03	<i>Hexb, Ccl3, Cdk5r2, Apcdd1, Cdk5r1, Syne2, Gli3, Fn1, Adgrg1, Sun2, Lrp8, Tgfb2, Dab2ip, Lamb1, P2ry12, Cspg4, Mboat7, Foxg1, Csf1, Ptpnz1, Matn2, Reln, Arhgef7</i>
GO:0043065	positive regulation of apoptotic process	163/599	1.49 E-04	<i>Jun, Dusp1, Rapgef2, Txnip, Bcl2l11, Hmger, Dusp6, Folh1, Tomm40, Cyp1b1, Atf4, Eef1e1, Hrk, Eif2ak3, Trp53, Cdk19, Mal, Csrnp3, Sfrp4, Zbtb16, Atf6, Sox4, Tigar, F3, Hif1a, Ddit3, Fbxo32, Ccl3, Trp53inp1, Tnfrsf12a, Ano6, Trim35, Igf2r, Trp53bp2, Cyca, Nr4a3, Bmpr1b, Foxo3, Ing3, Slc9a3r1, Plekhf1, Rhob, Phlda1, Il18, Myc, Men1, Htra2, Pml, Pin1, Ip6k2, Ctsz, Map3k5, Fnip1, Skil, Cdk5r1, Cdk4, Apaf1, Capn10, Acer2, Dnaja3, Bcl6, E2f3, Jmy, Grik2, Slk, Ctsh, Degs1, Ube2m, Sh3glb1, Hspd1, Peal5a, Fndc1, Faf1, Fzd9, Slc11a2, Ppif, Gadd45a, Cck, Eif2s1, Klfl1, Bbc3, Rad9a, Zfp13, Btg1, Ube2z, Cideb, Anp32b, Mybbp1a, Akt1, Ccar1, Cdc34, F2r, Tgfb2, Hip1, Cradd, Nlrc4, Timp3, Mcl1, Nr4a1, Serinc3, Cd248, Map2k6, Eif2ak2, Dab2ip, Atf2, Mapk8, Akr1c18, Id3, St18, Itm2c, Rhoa, Ifit2, Ralbp1, Cnr1, Adam17, Grin2a, Sod2, Cd274, Hsf1, Pak3, Pik3cb, Eif5a, Cttna1, Rybp, Unc5c, Bax, Mef2c, Gal, Alox12, Foxo1, Preli1, Rxra, Trp63, Ascl1, Gadd45b, Lyn, Egr1, Arl6ip5, Unc5b, Wwox, Egln3, Ncoa1, Clu, Fosl1, Agr2, Dap, Mybl2, Nod1, Unc13b, Creb1, Smad4, Ercc3, Mfn2, Ret, Arhgef7, Rassf6, Map3k9, Pdcd2, Idol, Nacc2, Rnps1, Tnf, Apbb2</i>
GO:0097190	apoptotic signaling pathway	150/582	3.77 E-03	<i>Jun, Pik3r1, Bcl2l11, Mapk7, Cyp1b1, Scg2, Ticam1, Atf4, Eef1e1, Hrk, Eif2ak3, Trp53, Hmgb2, Mal, Map2k5, Hif1a, Ddit3, Creb3l1, Psme3, Tnfrsf12a, Ddit4, Trp53bp2, Ptpnz1, Bmpr1b, Foxo3, Slc9a3r1, Plekhf1, Hdac2, Il18, Myc, Xpa, Pdk2, Ivns1abp, Htra2, Bdkrb2, Aen, Lmna, Zfp385b, Pml, Pdk1, Cx3cr1, Mknk1, Deptor, Sh3rf1, Map3k5, Sgpp1, Skil, Apaf1, Ing2, Mdm2, Dedd, Zfp110, Jmy, Ar, Madd, Eyal, Tnfrsf22, Ctsh, Didol, Vhl, Ctnn, Sh3glb1, Bag3, Peal5a, Pttglip,</i>

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
				<i>Mknk2, Faf1, Cdk11b, Fzd9, Ppif, Cck, Hipk1, Bbc3, Rad9a, Mnt, Mapk8ip2, Zfp13, Rhot1, Acaa2, Nr4a2, Acvr1b, Herpud1, Pcgf2, Cideb, Bcl2a1b, Mybbp1a, Cxcl12, Akt1, Brca2, Ybx3, Tgfb2, Hip1, Cradd, Hyoul, Atp7a, Timp3, Mcl1, Serinc3, Cdkn2d, Vdac2, Higd1a, Dab2ip, Sgk3, Msh6, Mapk8, Bag5, St18, Hic1, Itm2c, Zfp385a, Nme5, Hras, Ralbp1, Dyrk2, Sod2, Timm50, Cflar, Mlh1, Ern1, Cttna1, Il3, Bax, Eya4, E2f2, Prelid1, Trp63, Slc25a5, Dapl1, Pnp, Faim, Arl6ip5, Unc5b, Wwox, Fnip2, Brsk2, Clu, Hgf, Agr2, Dap, Pak7, Fcmmr, Bcl2a1d, Ret, Parp2, Nacc2, Nbn, Yap1, Pdc10, Tnf, Hells</i>
GO:0051402	neuron apoptotic process	79/272	2.73 E-03	<i>Jun, Bcl2l11, Mt1, Btg2, Sigmar1, Atf4, Hrk, Trp53, Coro1a, Hif1a, Ddit3, Ccl3, Mdk, Kras, Nr4a3, Foxo3, Il18, Kcnip3, Set, Cx3cr1, Pin1, Ctsz, Cdk5r1, Lig4, Apaf1, Zfp110, Ppt1, Draxin, Grik2, Nes, Ube2m, Hspd1, Lrp1, Cln3, Gdf5, Fzd9, Thrb, Lgmn, Atn1, Bbc3, Nr4a2, Rb1, Cdc34, F2r, Hsph1, Tgfb2, Hyoul, Atp7a, Mcl1, Atf2, Nae1, Mapk8, Akt2, Tox3, Ndnf, Rhoa, Hras, Pik3ca, Ralbp1, Chl1, Adarb1, Sod2, Pak3, Apoe, Ntrk2, Bax, Mef2c, Bdnf, Zpr1, Trp63, Ascl1, Egr1, Max, Itsn1, Unc5b, Egl3, Mybl2, Tnf, Grid2</i>
GO:0010942	positive regulation of cell death	182/659	1.90 E-05	<i>Jun, Dusp1, Rapgef2, Txnip, Bcl2l11, Hmger, Dusp6, Folh1, Tomm40, Cyp1b1, Aimp2, Atf4, Eef1e1, Hrk, Eif2ak3, Trp53, Cdk19, Phb, Mal, Csrnp3, Sfrp4, Zbtb16, Atf6, Eif4g1, Sox4, Tigar, F3, Hif1a, Ddit3, Ptpn5, Fbxo32, Ccl3, Trp53inp1, Tnfrsf12a, Ddit4, Ano6, Trim35, Cdkn1b, Fos, Igf2r, Trp53bp2, Cyps, Nr4a3, Bmpr1b, Foxo3, Ing3, Slc9a3r1, Plekhf1, Rhob, Phlda1, Il18, Myc, Men1, Htra2, Pml, Pin1, Ip6k2, Ctsz, Map3k5, Fnip1, Skil, Cdk5r1, Cdk4, Apaf1, Capn10, Acer2, Dnaja3, Efnb2, Bcl6, Kcnk2, E2f3, Jmy, Grik2, Slk, Ctsh, Degs1, Ube2m, Sh3glb1, Hspd1, Lrp1, Pea15a, Fndcl, Faf1, Fzd9, Slc11a2, Ppif, Gadd45a, Cck, Eif2s1, Klf11, Bbc3, Rad9a, Zfp13, Btg1, Ube2z, Cideb, Anp32b, Mybbp1a, Tlr6, Akt1, Ccar1, Cdc34, F2r, Grin2b, Tgfb2, Hip1, Cradd, Nlrc4, Timp3, Mcl1, Nr4a1, Serinc3, Cd248, Map2k6, Eif2ak2, Dab2ip, Atf2, Mapk8, Akr1c18, Htatip2, Id3, St18, Itm2c, Rhoa, Ifit2, Ucp2, Ralbp1, Cnr1, Adam17, Grin2a, Mtor, Sod2, Cd274, Hsf1, Pak3, Pik3cb, Eif5a, Cttna1, Rybp, Unc5c, Bax, Mef2c, Gal, Alox12, Foxo1, Prelid1, Rxra, Adora1, Trp63, Ascl1, Cysltr2, Gadd45b, Lyn, Egr1, Arl6ip5, Unc5b, Txnrd1, Wwox, Ptprz1, Egl3, Nco1, Clu, Fos11, Agr2, Dap, Mybl2, Nod1, Unc13b, Creb1, Smad4, Ercc3, Mfn2, Ret, Arhgef7, Rassf6, Map3k9, Pdc2, Ido1, Nacc2, Rnps1, Tnf, Apbb2</i>
GO:0097193	intrinsic apoptotic signaling pathway	75/284	3.51 E-02	<i>Pik3r1, Bcl2l11, Mapk7, Cyp1b1, Atf4, Eif2ak3, Trp53, Hif1a, Ddit3, Creb3l1, Ddit4, Trp53bp2, Ptpn1, Slc9a3r1, Plekhf1, Hdac2, Myc, Xpa, Pdk2, Ivns1abp, Htra2, Bdkrb2, Aen, Zfp385b, Pml, Pdk1, Map3k5, Sgpp1, Skil, Apaf1, Mdm2, Jmy, Pttg1ip, Ppif, Hipk1, Bbc3, Rad9a, Herpud1, Bcl2a1b, Mybbp1a, Cxcl12, Brca2, Ybx3, Hyoul, Mcl1, Serinc3, Cdkn2d, Vdac2, Dab2ip, Msh6, Bag5, Hic1, Zfp385a, Nme5, Hras, Ralbp1, Dyrk2, Sod2, Mlh1, Ern1, Bax, E2f2, Trp63, Pnp, Arl6ip5, Wwox, Fnip2, Brsk2, Clu, Bcl2a1d, Nacc2, Nbn, Pdc10, Tnf, Hells</i>
GO:0070265	necrotic cell death	19/53	3.99 E-02	<i>Mgea5, Alkbh7, Trp53, Pygl, Pgam5, Rnf31, Map3k5, Spata2, Fzd9, Ppif, Ybx3, Peli1, Mapk8, Cflar, Bax, Birc2, Ahr, Tnf, Itpk1</i>
GO:0010608	posttranscriptional regulation of gene expression	136/417	2.72 E-08	<i>Btg2, Cpeb1, Per1, Cyp1b1, Rara, Ddx39b, Noct, Paip2, Pcbp1, Khdrbs1, Tnrc6b, Eif2ak3, Trp53, Paip2b, Eif4e, Eif4g1, Sox4, Carhsp1, Mettl16, Dhx9, Mif4gd, Vegfa, Dhx29, Eif4a3, Eif3d, Foxo3, Srrt, Slc11a1, Gcnt2, Myk, Hnrnpu, Larp4, Akap6, Myef2, Igfbp5, Pml, Syncrip, Eif3b, Dkcl1</i>

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
GO:0140053	mitochondrial gene expression	37/97	4.90 E-04	<i>Rnasel, Limd1, Eif5b, Mknk1, Rc3h2, Hnrnpd, Naf1, Zfp598, Adar, Samd4, Caprin1, Cdk4, Ddx25, Tdrd7, Rgs2, Ncbp1, Tardbp, Stat3, Mex3d, Ythdf1, Shmt2, Per2, Mknk2, Coa3, Eif4e3, Larpl, Pa2g4, Eif2s1, Elavl1, Eif5a2, Eif6, Smg6, Lrpprc, Rc3h1, Poldip3, Nolc1, Akt1, Eefsec, Ago4, Eif4enif1, Eprs, Pabpc4, Ythdc1, Dhx36, Jakmip1, Kbtbd8, Eif2ak2, Tbrg4, Hnrnpa0, Akt2, Ncbp2, Zfp385a, Rhoa, Atg14, Acol, Fxr1, Hnrnpr, Ago3, Mtor, Sepsecs, Mettl3, Guf1, Myd88, Lsm14b, Eif4g3, Mrps27, Vip, Eif5a, Eif2ak1, Tcof1, Dgcr8, Henmt1, Shmt1, Mpv17l2, Thrap3, Rpl22, Rxra, Dnajc3, Zc3h7a, Smg7, Xpo5, Ythdf2, Nanos1, Ireb2, Fto, Pstk, Uqcc1, Qk, Rbm46, Klhl25, Map2k2, Nacc2, Ppp1r15a, Tob1, Ngdn, Tnf, Fastkd2</i>
GO:0032922	circadian regulation of gene expression	25/55	3.43 E-04	<i>Ppargc1b, Mrps18b, Foxo3, Mrpl12, Qrs11, Elac2, Mterf4, Yars2, Mterf2, Shmt2, Hars, Mrpl47, Coa3, Lrpprc, Mrps17, Mto1, Mrps7, Tbrg4, Trmt5, Mrpl16, Rars2, Mrpl51, Slc25a33, Gars, Mrps27, Chchd1, Polrmt, Mpv17l2, Gfm1, Wars2, Tufm, Mrps2, Supv3l1, Mrps34, Uqcc1, Lars2, Fastkd2</i>
GO:0106027	neuron projection organization	36/93	4.39 E-04	<i>Zmynd8, Actr3, Sipal1l, Zfp804a, Vps35, Chrna7, Insr, Nlgn1, Cdk5r1, Lzts3, Caprin1, Ephb2, Arc, Cask, Ctn, Mfn1, Ephb3, Ephb1, Lgmn, Lrp8, Grin2b, Abcd2, Dhx36, Igf1r, Itga3, Pdlim5, Pak3, Apoe, Itpka, Baiap2, Wnt7a, Dctn1, Nlgn3, Reln, Ppp1r9a, Dbn1</i>
GO:0048812	neuron projection morphogenesis	173/610	6.65 E-06	<i>Rapgef2, Etv4, Ifrd1, Omg, Syne1, Rbfox2, Actr3, Efn3, Gja1, Srf, Atxn2, Arx, Wdr36, Trim46, Tnfrsf12a, Vegfa, Nr4a3, Bmpr1b, Sipal1l, Lifr, Dbn1, Tmem108, Ss18l1, Tubb3, Mgl1, Sgk1, Adgrb3, Chrna7, Fezf2, Cxcr4, Ccdc141, Unc5a, Trpc6, Nyap2, Nlgn1, Plaa, Nfib, Nefh, Lrp4, Skil, Pacsin1, Bcl11a, Cdk5r1, Cdh11, Dact1, Lzts3, Limk1, Caprin1, Tmem106b, Zswim8, Dixdc1, Wee1, Ephb2, B3gnt2, Efnb2, Draxin, Slit3, Kndc1, Prdm8, Vcl, Arc, Mef2a, Ulk2, Ttl, Cask, Ctn, Sh3glb1, Lama2, Mfn1, Ephb3, Rab10, Etv1, Gli3, Ephb1, Slc11a2, Sema6d, Fn1, Cck, Boc, Mapk8ip2, Slitrk4, Vldlr, Csf1r, Nr4a2, Rab11a, Dst, Spg20, Anapc2, Rims2, Cxcl12, Sema6a, Egr2, Als2, Fzd3, Efnb3, Clasp2, Rnf6, Lmtk2, Myo16, Lrp8, Lgil, Tgfb2, Atp7a, Sarm1, Dhx36, Tnn, Dab2ip, Mapk8, Igf1r, Ryk, Rhoa, Map4k4, Gap43, Pitpna, Epb41l3, Farp1, Thbs4, Chl1, Adarb1, Pdlim5, Map6, Klf7, Syt3, Sema4a, Dcdc2a, Ptpn11, Pak3, Apoe, Gpm6a, Itpka, Ntrk2, Unc5c, Baiap2, Bdnf, Tsku, Flrt2, Atp8a2, Rnf165, Wnt7a, Golga2, Foxg1, Efnb1, Metrnl, Plppr4, Nptx1, Wasf1, Btbd3, Nng1, Unc5b, Ptpnz1, Brsk2, Gbx1, Pqbp1, Clu, Nlgn3, Matn2, Reln, Vasp, Creb1, Smad4, Ppp1r9a, Zfyve27, Flrt1, Foxd1, Ret, Map2k2, Raph1, Efn2, Rere, Jade2, Syt2, Apbb2, Dbn1</i>
GO:0061564	axon development	124/458	1.69 E-03	<i>Jun, Etv4, Ifrd1, Omg, Tnc, Actr3, Efn3, Srf, Arx, Wdr36, Trim46, Tnfrsf12a, Vegfa, Nr4a3, Bmpr1b, Sipal1l, Tubb3, Mgl1, Fezf2, Cxcr4, Ccdc141, Unc5a, Nfib, Nefh, Lrp4, Skil, Bcl11a, Cdk5r1, Cdh11, Limk1, Zswim8, Dixdc1, Ephb2, B3gnt2, Efnb2, Draxin, Slit3, Prdm8, Vcl, Ulk2, Ttl, Ctn, Lama2, Ephb3, Rab10, Etv1, Gli3, Ephb1, Sema6d, Fn1, Cck, Crtac1, Klf4, Boc, Slitrk4, Csf1r, Nr4a2, Rab11a, Dst, Spg20, Anapc2, Cxcl12, Sema6a, Egr2, Als2, Fzd3, Xylt1, Efnb3, Clasp2, Rnf6, Lmtk2, Lgil, Tgfb2, Tnn, Igf1r, Ryk, Gap43, Pitpna, Cnr1, Chl1, Adam17, Adarb1,</i>

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
GO:0048638	regulation of developmental growth	104/361	4.99 E-04	<i>Map6, Klf7, Sema4a, Ptpn11, Pak3, Apoe, Ntrk2, Ctnna1, Unc5c, Bdnf, Tsku, Flrt2, Zpr1, Atp8a2, Rnf165, Wnt7a, Golga2, Foxg1, Efnb1, Metrn, Plppr4, Nptx1, Ntng1, Unc5b, Ptpnz1, Brsk2, Gbx1, Nlgn3, Matn2, Reln, Vasp, Creb1, Smad4, Zfyve27, Foxd1, Plp1, Ret, Map2k2, Raph1, Efna2, Apbb2, Dbn1</i>
GO:0007420	brain development	189/707	1.01 E-04	<i>Bcl2l11, Bbs4, Dusp6, Ifrd1, Rgs4, Fdps, Edn1, Ddx39b, Gpam, Omg, Actr3, Gjal, Srf, Atxn2, Mapk11, Arx, Wdr36, Trim46, Tnfrsf12a, Cdkn1b, Vegfa, Hdac2, Carm1, Mgl1, Cacna1c, Men1, Akap6, Htra2, Mstn, Suv39h1, Socs2, Insr, Cxcr4, Plaa, Pin1, Ppp2r3a, Ptger4, Bcl11a, Cdk5r1, Jarid2, Limk1, Cdk4, Fgf9, Npy1r, Mbd5, Kcnk2, Rgs2, Draxin, Ar, Ulk2, Ttl, Stat3, Ctnn, Sh3glb1, Gdf5, Sema6d, Bbs2, Fn1, Lgmn, Tomm70a, Rab11a, Spg20, Anapc2, Rims2, Cxcl12, Sema6a, Akt1, Clasp2, Rnf6, Ybx3, Ezr, Wwc1, Ryk, Pik3ca, Mtor, Syt3, Sema4a, Ptpn11, Hsf1, Nipbl, Apoe, Dusp10, Mef2c, Bdnf, Por, Gal, Ghsr, Dll1, Atp8a2, Stat5b, Gamt, Stc2, Prox1, Csf1, Fto, Ahr, Creb1, Zfyve27, Foxc1, Parp2, Yap1, Syt2, Ccnb1, Dbn1</i>
GO:0021766	hippocampus development	35/96	2.00 E-03	<i>Rapgef2, Bcl2l11, Btg2, Crhr1, Avpr1a, Slc2a1, Bbs4, B3gnt5, Rara, Atxn1, Smad1, Nde1, Trp53, Rbfox2, Srf, Atxn2, Mfsd2a, Slpr1, Kat2a, Ctns, Lhx6, Id4, Hif1a, Arx, Ddit4, Mdk, Slc38a2, Cdk5r2, H2afx, Kras, Nr4a3, Hmgcs1, Foxo3, Atxn1l, Ak4, Cln5, Pgap1, Hdac2, Tmem108, Cbs, Ets1, Tra2b, Gart, Twsg1, Htra2, Fezf2, Cxcr4, Irs2, Ccdc141, Gata2, Ran, Sez6, C2cd3, Sstr3, Nfib, Hnrnpd, Nefh, Eif2b3, Cdk5r1, Dclk2, Trappc9, Apaf1, Dixdc1, Ephb2, Rora, Kif5b, Fut10, Syne2, Ppt1, Rgs2, Adcyap1, Draxin, Fzd6, Kndc1, Prdm8, Nme1, Nes, Pafah1b3, Ttc21b, Bag3, Ephb3, Gli3, Sema6d, Bbs2, Fabp7, Crtac1, Arf4, Mbd3, Csf1r, Nr4a2, Adgrg1, Anp32b, Kdm7a, Cxcl12, Pomk, Egr2, Cdon, Fzd3, Dnajc30, Spata5, Brca2, Shroom4, Arcn1, Myo16, Sun2, Lrp8, H2afy2, Tbc1d23, Hnmt, Abcb6, Hes5, Atp7a, Jakmip1, Dab2ip, Lamb1, Cst3, P2ry12, Slc32a1, Igf1r, Uba6, Ryk, Ccdc85c, Nme5, Rhoa, Agtpbp1, Mboat7, Acat1, Mas1, Mtor, Ptpn11, Sstr2, Nipbl, Mettl3, Slc1a2, Myo1d, Ndst1, Npy, Ntrk2, Csk, Slc4a10, Sstr1, Unc5c, Bax, Baiap2, Neurod6, Zbtb18, Tsku, Sphk2, Atat1, Dll1, Prop1, Wrn, Klhl1, Wnt7a, Pou3f3, Foxg1, Ascl1, Tacc2, Arnt2, Nanos1, Btdb3, Prox1, Hsd3b5, Pcdh18, Rrm1, Ireb2, Srd5a2, Ncoal, Gnao1, Foxp2, Agr2, Gak, Emx2, Reln, Htr5a, Creb1, Rac3, Otp, Dlx2, Aspm, Nr2f2, Foxc1, Tulp3, Efna2, Rere, Slc6a11, Dpcd, Sharpin, Grid2</i>
GO:0021542	dentate gyrus development	9^18	3.51 E-02	<i>Btg2, Mdk, Tmem108, Fezf2, Neurod6, Atat1, Prox1, Emx2, Reln</i>
GO:0050769	positive regulation of neurogenesis	148/528	7.82 E-05	<i>Rapgef2, Etv5, Cpeb1, Zmynd8, Rara, Spag9, Atxn1, Kit, Actr3, Srf, Eif4g1, Hif1a, Ptpn5, Tnfrsf12a, Gprc5b, Vegfa, Mapk6, Srtr, Foxo6, Hdac2, Mmd2, Ss18l1, Myc, Zfp804a, Il1r1, Sgk1, Fezf2, Socs2, Cxcr4, Gata2, Ppp2r5d, Trpc6, Ranbp1, Arhgef2, Nlgn1, Plaa, Cx3cr1, Magi2, Ufl1, Skil, Paascin1, Bcl11a, Limk1, Lig4, Caprin1, Tmem106b, Dixdc1, Ephb2, Fbxo38, Htr7, Bcl6, Rgs2, Adcyap1, Nme1, Cask, Cbfa2t2, Sh3glb1, Adamts1, Mfn1, Lrrc7, Gdf5, Gli3, Rheb, Fn1, Grip2, Rgs6, Vldlr, Trim67, Nme2, Rab11a, Anapc2, Rims2, Cxcl12, Sema6a, Cdon, Fzd3, Cyb5d2,</i>

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
				<i>Nckip5d, Lrp8, Fig4, Oprm1, Dhx36, Ppp2r5b, Heyl, Dab2ip, Mapk8, P2ry12, Igf1r, Ndnf, Rhoa, Cnr1, Vegfc, Itga3, Scarb2, Bmp6, Ddx56, Adam17, Map6, Sox8, Mtor, Syt3, Camk1, Vwec2, Cflar, Nipbl, Pak3, Apoe, Itpka, Ntrk2, Zc4h2, Baiap2, Mef2c, Bdnf, Atp8a2, Dynl1f, Ap2a1, Golga2, Foxg1, Ascl1, Metrn, Lyn, Tgjf2, Plk5, Prox1, Csf1, Itsn1, Ptporz1, Ncoa1, Hgf, Nlgn3, Qk, Reln, Ppp1r9a, Rapgef1, Zfyve27, Otp, Dlx2, Aspm, Ret, Kctd11, Prpf19, Tcf3, Map2k2, Jade2, Ehd1, Syt2, Tnf, Dbn1</i>
GO:0050768	negative regulation of neurogenesis	92/305	2.35 E-04	<i>Rapgef2, Ldlr, Inpp5j, Ifrd1, Lingol, Hmg20a, Fkbp4, Trp53, Arf6, Actr3, Cd38, Eif4e, Dennd5a, Id4, Trim46, Ptpn9, Foxo3, Hdac2, Carm1, Daam2, D130043K22Rik, Fezf2, Trpc6, Arhgef2, Nlgn1, Ctsz, Lrp4, Bcl11a, Cdk5r1, Dixdc1, Ephb2, Asap1, Mdm2, Efnb2, Adcyap1, Draxin, Ulk2, Stat3, Cbfa2t2, Lrp1, Gli3, Sema6d, Thrb, Kank1, Runx1t1, Adgrg1, Spg20, Sema6a, Xylt1, Efnb3, Snapin, Eif4enif1, Dtx1, Rnf6, Hes5, Zfp536, Casz1, Bag5, Id3, Itm2c, Ryk, Mylip, Cspg4, Rhoa, Map4k4, Paqr3, Adam17, Sox8, Sema4a, Apoe, Dusp10, Cib1, Cttna1, Gdf11, Bdnf, Dll1, Dynl1f, Mbd1, Wnt7a, Foxg1, Ascl1, Sorl1, Ptporz1, Lsm1, Cyth2, Nlgn3, Gak, Dlx2, Aspm, Kctd11, Nbn, Ednrb</i>
GO:0021885	forebrain cell migration	25/72	2.30 E-02	<i>Srf, Lhx6, Arx, Cdk5r2, Fezf2, Cxcr4, Ccdc141, Cdk5r1, Dixdc1, Fut10, Syne2, Gli3, Adgrg1, Cxcl12, Sun2, Lrp8, Dab2ip, Lamb1, P2ry12, Rhoa, Mboat7, Pou3f3, Foxg1, Emx2, Reln</i>
GO:0045137	development of primary sexual characteristics	71/241	3.43 E-03	<i>Bcl2l11, Arid5b, Vgf, Ccnd1, Lfng, Rara, Kit, Hmgb2, Phb, Fst, Vegfa, Bmpr1b, Hmgcs1, Foxo3, Adcyap1r1, Wdr19, Ctsl, Insr, Abcb1a, Plekha1, Map7, Nefh, Ptger4, Fgf9, Adrm1, Ing2, Adcyap1, Slit3, Ar, Fnac3a, Adamts1, Nrip1, Atn1, Adgrg1, Acvr1b, Dmrta1, Serpinb6a, Ago4, Brca2, Ybx3, Kdm5a, Tgfb2, Tlr9, Cst3, Sox8, Mas1, Kmt2b, Rec8, Cttna1, Col9a3, Bax, Osr1, Klhl10, Stat5b, Rab13, Prdx4, Lhfpl2, Rrm1, Rad21l, Srd5a2, Ncoa1, Ahr, Smad4, Eif2b4, Cyp19a1, Aspm, Tiparp, Dach2, Foxc1, Fanca, Fgf7</i>
GO:0016358	dendrite development	87/262	7.83 E-06	<i>Rapgef2, Bbs4, Zmynd8, Syne1, Arf6, Rbfox2, Actr3, Prex1, Sipal1l, Mapk6, Foxo6, Hdac2, Ss18l1, Carm1, Sgk1, D130043K22Rik, Adgrb3, Chrna7, Rtn4ip1, Fezf2, Sez6, Trpc6, Nlgn1, Lrp4, Pacsin1, Bcl11a, Grin3a, Cdk5r1, Dact1, Lzts3, Caprin1, Tmem106b, Ephb2, Asap1, Kndc1, Arc, Mef2a, Cask, Sh3glb1, Mfn1, Ephb3, Ephb1, Slc11a2, Mapk8ip2, Arf4, Vldlr, Trappc4, Anapc2, Igsf9, Lrp8, Atp7a, Sarm1, Dhx36, Dab2ip, Mapk8, Uba6, Rhoa, Farp1, Pdlim5, Map6, Klif7, Mtor, Dcdc2a, Camk1, Pak3, Apoe, Itpka, Ntrk2, Baiap2, Mef2c, Bdnf, Klhl1, Wnt7a, Btbd3, Itsn1, Ptporz1, Pqbp1, Cyth2, Nlgn3, Arid1b, Matn2, Reln, Ppp1r9a, Flrt1, Mcf2, Rere, Dbn1</i>
GO:0097062	dendritic spine maintenance	10^20	2.48 E-02	<i>Zmynd8, Zfp804a, Vps35, Insr, Ctnn, Grin2b, Igf1r, Itga3, Apoe, Itpka</i>
GO:0097061	dendritic spine organization	34/85	3.42 E-04	<i>Zmynd8, Actr3, Sipal1l, Zfp804a, Vps35, Chrna7, Insr, Nlgn1, Cdk5r1, Lzts3, Caprin1, Ephb2, Arc, Cask, Ctnn, Mfn1, Ephb3, Ephb1, Lgmn, Lrp8, Grin2b, Dhx36, Igf1r, Itga3, Pdlim5, Pak3, Apoe, Itpka, Baiap2, Wnt7a, Nlgn3, Reln, Ppp1r9a, Dbn1</i>
GO:0002732	positive regulation of dendritic cell	5^6	1.72 E-02	<i>Ddx21, Ticam1, Mavs, Dhx36, Ddx58</i>

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
GO:0060998	cytokine production regulation of dendritic spine development	30/81	3.86 E-03	<i>Zmynd8, Arf6, Actr3, Sipa111, Mapk6, Foxo6, Hdac2, Nlgn1, Cdk5r1, Lzts3, Caprin1, Asap1, Arc, Cask, Mfn1, Lrp8, Dhx36, Pdlim5, Mtor, Camk1, Pak3, Apoe, Itpka, Baiap2, Mef2c, Itsn1, Nlgn3, Reln, Ppp1r9a, Dbn1</i>
GO:0051963	regulation of synapse assembly	37/115	1.40 E-02	<i>Arf6, Actr3, Lrrtm2, Eif4g1, Sipa111, Lrfn1, Adgrb3, Nlgn1, Tpbg, Ephb2, Syndig1, Adgre5, Ephb3, Ephb1, Slitrk4, Mdga2, Gap43, Farp1, Pdlim5, Ntrk2, Lrrtm2, Mef2c, Bdnf, Flrt2, Ghssr, Lingo2, Lrrtm4, Wnt7a, Cbln2, Nptx1, Il1rap, Nlgn3, Lrfn3, Lingo4, Ppp1r9a, Flrt1, Grid2</i>
GO:0099565	chemical synaptic transmission, postsynaptic	35/113	3.02 E-02	<i>Zmynd8, Rgs4, Atxn1, Synel, Igsf9b, Eif4a3, Bscl2, Tmem108, Chrna5, Chrna7, Sez6, Nlgn1, Grik2, Chrna4, Grip2, Mapk8ip2, Rims2, Grin2b, Oprm1, Grin2a, P2rx3, Baiap2, Mef2c, Bdnf, Adora1, Wnt7a, Chrnbl, Glra4, Nlgn3, Grin2d, Unc13b, Reln, Ppp1r9a, Grid2, Dbn1</i>
GO:0050807	regulation of synapse organization	82/257	8.00 E-05	<i>Etv5, Zmynd8, Sorbs1, Arf6, Actr3, Lrrtm2, Eif4g1, Sipa111, Lrfn1, Zfp804a, Vps35, Adgrb3, Chrna7, Nlgn1, Magi2, Lrp4, Cdk5r1, Lzts3, Tpbg, Caprin1, Ephb2, Tubb5, Lrfn2, Syndig1, Arc, Adgre5, Vhl, Cask, Mfn1, Ephb3, Cntnap4, Ephb1, Rheb, Fzd9, Grip2, Arf4, Slitrk4, Anapc2, Mdga2, Igsf9, Lrp8, Grin2b, Rims3, Dhx36, Lrrc4, Dab2ip, Rhoa, Gap43, Farp1, Frmpd4, Pdlim5, Pcdh8, Camk1, Pak3, Apoe, Gpm6a, Itpka, Ntrk2, Lrrtm2, Sparcl1, Baiap2, Mef2c, Bdnf, Flrt2, Ghssr, Lingo2, Lrrtm4, Wnt7a, Cbln2, Nptx1, Itsn1, Il1rap, Dctn1, Nlgn3, Lrfn3, Lingo4, Reln, Ppp1r9a, Flrt1, Tnf, Grid2, Dbn1</i>
GO:0048489	synaptic vesicle transport	52/177	1.66 E-02	<i>Trim46, Cacnb2, Stxbp5l, Syt10, Fbxl20, Ap3d1, Syt11, Chrna5, Apba2, Chrna7, Nlgn1, Lin7a, Grin3a, Htr7, Ap3b1, Madd, Chrna4, Cask, Gipc1, Cacna1d, Ppfia2, Doc2a, Cacnb4, Pfn2, Snap29, Rims2, Htr1a, Snapin, Ncs1, Rims3, Doc2b, Syt6, Cnr1, Syt3, Chrm2, Kenh1, Ap3m2, Htr2a, Cplx4, Trim9, Wnt7a, Ap1s2, Cadps2, Ctbp2, Htr1b, Syt5, Rap1b, Unc13b, Cplx3, Bloc1s5, Bloc1s1, Syt2</i>
GO:0016079	synaptic vesicle exocytosis	43/140	1.62 E-02	<i>Cacnb2, Stxbp5l, Syt10, Fbxl20, Syt11, Chrna5, Apba2, Chrna7, Nlgn1, Grin3a, Htr7, Chrna4, Cask, Gipc1, Cacna1d, Ppfia2, Doc2a, Cacnb4, Pfn2, Snap29, Rims2, Htr1a, Snapin, Ncs1, Rims3, Doc2b, Syt6, Cnr1, Syt3, Chrm2, Kenh1, Htr2a, Cplx4, Trim9, Wnt7a, Cadps2, Ctbp2, Htr1b, Syt5, Rap1b, Unc13b, Cplx3, Syt2</i>
GO:1900271	regulation of long-term synaptic potentiation	19/44	5.21 E-03	<i>Fam107a, Paip2, Ptpn5, Chrna7, Adcy8, Cx3cr1, Ephb2, Arc, Lgmn, Calb1, Stau1, Grin2b, Grin2a, Apoe, Adora1, Nlgn3, Reln, Creb1, Ppp1r9a</i>
GO:0060078	regulation of postsynaptic membrane potential	45/146	1.25 E-02	<i>Zmynd8, Rgs4, Atxn1, Synel, Igsf9b, Grm1, Eif4a3, Bscl2, Tmem108, Cacna1c, Fgf14, Chrna5, Chrna7, Rgs7, Sez6, Nlgn1, Grin3a, Adcyap1, Grik2, Rgs7bp, Chrna4, Grip2, Mapk8ip2, Gabrb1, Rims2, Gabra1, Grin2b, Oprm1, Kcnd2, Grin2a, P2rx3, Baiap2, Mef2c, Bdnf, Adora1, Wnt7a, Chrnbl, Glra4, Nlgn3, Grin2d, Unc13b, Reln, Ppp1r9a, Grid2, Dbn1</i>
GO:0099084	postsynaptic specialization organization	18/48	3.18 E-02	<i>Zmynd8, Arf6, Lrrtm2, Sipa111, Lrfn1, Tmem108, Dlgap1, Nlgn1, Magi2, Lrrc4, Gap43, Nptx1, Il1rap, Nlgn3, Reln, Gphn, Grid2, Dbn1</i>

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
GO:0032228	regulation of synaptic transmission, GABAergic	14/35	4.01 E-02	<i>Kras, Nlgn1, Kif5b, Cntnap4, Plcl2, Car7, Cnr1, Slc6a1, Bdnf, Cckbr, Nisch, Adora1, Usp46, Htr1b</i>
GO:0002520	immune system development	242/932	5.45 E-05	<i>Jun, Pik3r1, Bcl2l11, Egr3, Rabgap11, Mertk, Chd2, Lfng, Rara, Prmt1, Gpatch4, Lgals8, Kit, Trp53, Ppargc1b, Hmgb2, Icosl, Rbfox2, Ctla2a, Sin3a, Srf, Zbtb16, Kat2a, Sox4, Pdgfb, Fasn, Hif1a, Fst, Ccl3, Prex1, Cyp26b1, Vegfa, Fos, Fam20c, Irf2bp2, Ubash3b, Anln, Foxo3, Hspa9, Atxn1l, Dll4, Gabpa, Il18, Myc, Ap3d1, Ets1, Cacna1c, Twsg1, Sart3, Ciapin1, Jmjd6, Men1, Prdm1, C3ar1, Epas1, Sbds, Pml, Gata2, Lyar, Pld4, Lmo4, Rc3h2, Ston2, Sh3rf1, Fnip1, Ptger4, Bcl11a, L3mbtl3, Jarid2, Lig4, Adar, Lrrc8a, Rora, Adrm1, Vps33b, Maea, Dnaja3, Bcl6, C1qc, Il17d, Trp53bp1, Thoc5, Ap3b1, Cbfa2t3, Cd109, Nme1, Exosc6, Sirpa, Stat3, Dact2, Ceacam1, Rab7b, Hspd1, Ephb3, Smap1, Mknk2, Rras, Gli3, Flt1, Kat8, Fzd9, Slc11a2, Ostm1, Klfl1, Klfl4, Eif6, Cacnb4, Nme2, Csf1r, Angpt2, Zfat, Glrx5, Acvr1b, Rc3h1, P4htm, Duxbl2, Tet2, Zfpml, Pip4k2a, Havcr2, Rbl, Setd1a, Cnn2, Brca2, Dtx1, Rasgrp1, Plcl2, Pabpc4, Tgfb2, Tlr9, Hes5, Armc6, Atp7a, Hoxb7, Dhx36, Cd248, Dock11, Eif2ak2, Atg5, Esco2, Msh6, Nfkb1a, Zfp608, Cd4, Tox, Glol, Zfp385a, Wdr1, Bves, Rhoa, Gas2l1, Tusc2, Il27ra, Clec2i, Cul4a, Adam17, Mtor, Sema4a, Polm, Sod2, Ptpn11, Cd274, Loxl3, Rrs1, Mettl3, Pknx1, Mlh1, Dusp10, Klfl3, Cib1, Eif2ak1, Il3, Bax, Cd83, Mef2c, Fzd8, Trem2, Pias3, Dll1, Crip2, Rpl22, Prelid1, Il34, Plek, Stat5b, Ankle1, Il2ra, Epb42, Dnase2a, Slc7a6os, Lyn, Egr1, Ythdf2, Pnp, Ctr9, Csf1, Myo1e, Tyrobp, Cd8a, Zbtb46, Ireb2, Ptprz1, Junb, Fzd7, Itm2a, Gmpr2, Ahr, Oscar, Icos, Creb1, Gpr18, Trim10, Slc40a1, Skint1, Ifnk, Tiparp, Bcl2a1d, L3mbtl1, Irak3, Nrarp, Foxc1, Ret, Arhgef7, F2rl1, Ebp, Tcf3, Pdcd2, Map2k2, Efn2, Ido1, Clec4e, Nbn, Lmo2, Fbn1, 6030468B19Rik, Adgrf4, Fanca, Tnf, Vsir, Dnajb9, Mixl1, Hells</i>
GO:0001817	regulation of cytokine production	147/614	4.83 E-02	<i>Pik3r1, Arid5a, Mertk, Per1, Cyp1b1, Ddx21, Pde4b, Rara, Gpam, Ticam1, Atf4, Eif2ak3, Ndr2, Hmgb2, Tlr7, Icosl, Arg2, Mapk11, Map2k5, Hif1a, Ddit3, Ccl3, Itgb8, Dhx9, Polr3d, Gprc5b, Cd59a, Nr4a3, Slc11a1, Ankrd17, Hdac2, Il18, Syt11, Twsg1, Il1r1, C3ar1, Chrna7, Ly96, Pml, Arhgef2, Cx3cr1, Prkcq, Ccbe1, Ptger4, Rnf125, Rora, Bcl6, Il17d, Adcyap1, Elfl, Sirpa, Rabgef1, Stat3, Ceacam1, Rab7b, Traip, Hspd1, Fam49b, Fn1, Ffar3, Errfil, Klfl4, Csf1r, Zfpml, Mavs, Havcr2, Tlr6, Trim27, Tmem173, F2r, Afap112, Rasgrp1, Polr3b, Peli1, Ezr, Tbc1d23, Tgfb2, Tlr9, Abcd2, Prkd2, Arfgef2, Dhx36, Trib2, Eif2ak2, Tkfc, Atg5, Atf2, Akirin2, Polr3f, Nav3, Tusc2, Il27ra, Hras, Kat5, Clec2i, Yl1, Ctp, Adam17, Homer2, Ddx58, Pibfl, Ptpn11, Cd274, Hsf1, H2-T23, Myd88, Bpi, Laptm4b, Csk, Il17ra, Cd83, Hfe, Ghsh, Dll1, Stat5b, Epx, Mcoln2, Rnf216, Lyn, Egr1, Gsdmd, Ifih1, Serpinf2, Il1rap, Pqbp1, Nlr1, F11r, S1pr3, Clu, Hgf, Agr2, Nod1, Creb1, Smad4, Gpr18, Cyp2j6, Irak3, Il5ra, F2rl1, Ido1, Lgr4, Clec4e, Nlr3, Lpl, Ulbp1, Tnf, Vsir</i>
GO:0032648	regulation of interferon-beta production	18/49	3.77 E-02	<i>Ticam1, Hmgb2, Tlr7, Dhx9, Polr3d, Sirpa, Traip, Mavs, Polr3b, Tlr9, Polr3f, Yl1, Ddx58, Ptpn11, Rnf216, Ifih1, Nlr1, Nlr3</i>

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
GO:1904467	regulation of tumor necrosis factor secretion	13/27	1.12 E-02	<i>Arid5a, Arg2, Dhx9, Syt11, Ptger4, Hspd1, Mavs, Havcr2, Tlr6, Ddx58, Ghsr, Ifih1, Cyp2j6</i>
GO:1990823	response to leukemia inhibitory factor	45/124	3.27 E-04	<i>Arid5b, Spry4, Srm, Srsf7, Eef1e1, Elavl2, Nup35, Cacybp, Srsf3, Hnrnpu, Parp16, Pml, Nfyb, Nefh, Jarid2, Sox17, Rnf125, B3gnt2, Laptm5, Klf5, Klf4, Cacnb4, Dtx1, Ptp4a3, Sdad1, Chchd4, Vegfc, Lrrc2, Trim25, Nol8, Sstr1, Shmt1, Padi2, Slc25a5, Ctbp2, Egl3, Mpc1, Mybl2, Hk2, Creb1, Stoml1, Mef2, Phc1, Pcd10, Hells</i>
GO:0031062	positive regulation of histone methylation	16/43	4.83 E-02	<i>Chtop, Dnmt1, Men1, Lmna, Suv39h1, Tet1, Jarid2, Nelfe, L3mbtl2, Phf1, Rtf1, Paxbp1, Ogt, Ctr9, Smad4, Nelfa</i>
GO:0043967	histone H4 acetylation	24/69	2.61 E-02	<i>Per1, Kat2a, Msl3l2, Ing3, Kansl2, Naa50, Iws1, Kat8, Brca2, Meaf6, Atg5, Actl6a, Ruvbl1, Wdr5, Kat5, Usp22, Ctbp1, Hcfc1, Smarcb1, Ogt, Ncoa1, Msl3, Tcf3, Jade2</i>
GO:0031058	positive regulation of histone modification	34/96	4.14 E-03	<i>Arid5a, Trp53, Kat2a, Vegfa, Chtop, Dnmt1, Sart3, Men1, Lmna, Suv39h1, Pml, Tet1, Jarid2, Nelfe, Ing2, Bcl6, Slk, L3mbtl2, Phf1, Ube2n, Rtf1, Prkd2, Lpin1, Rnf40, Ctbp1, Nipbl, Paxbp1, Smarcb1, Ogt, Ctr9, Rps6ka4, Smad4, Nelfa, Ccnb1</i>
GO:0090287	regulation of cellular response to growth factor stimulus	74/260	6.93 E-03	<i>Spry4, Htra1, Smad2, Fgfr1l, Trp53, Sfrp4, Pdgfb, Tgfb1i1, Hif1a, Creb3l1, Cd59a, Vegfa, Fam20c, Fgf1, Ptpn1, Fgfbp3, Sdcbp, Tmem108, Eng, Twsg1, Men1, Ppp2r5d, Apln, Pin1, Ccbe1, Skil, Stub1, Fgf9, Ing2, Rasl11b, Eid2, Gpc1, Cd109, Fgf18, Cask, Sh3glb1, Gdf5, Flt1, Gipcl, Spg20, Sema6a, Myo1c, Grem2, Ppm1a, Chrd1l, Htra3, Ptp4a3, Hes5, Prkd2, Ppp2r5b, Npnt, Dab2ip, Acvr1l, Vegfc, Itga3, Adam17, Adamts3, Vwc2, Cflar, Zfp703, Dll1, Chst11, Dok5, Rnf165, Lemd3, Wasf1, Numal, Agr2, Smad4, Foxd1, Fbn1, Tob1, Vsir, Tmprss6</i>
GO:0048008	platelet-derived growth factor receptor signaling pathway	23/59	7.58 E-03	<i>Txnip, Arid5b, Pdgfa, Plat, Pdgfb, F3, Vegfa, Ptpn1, Nr4a3, Slc9a3r1, Pdgfd, Plekha1, Glrx, Lrp1, Ifi20, Clasp2, Hip1, Ptpn11, Fer, Myo1e, Rapgef1, Bcar1, Tiparp</i>
GO:0071559	response to transforming growth factor beta	60/211	1.77 E-02	<i>Jun, Htra1, Mapk7, Smad2, Edn1, Smad1, Trp53, Adam9, Actr3, Tgfb1i1, Fos, Bmpr1b, Sdcbp, Gcnt2, Dnmt1, Eng, Twsg1, Men1, Mstn, Pml, Pdgfd, Usp15, Cx3cr1, Pin1, Skil, Stub1, Apaf1, Ing2, Rasl11b, Eid2, Col4a2, Cd109, Tab1, Gipcl, Acvr1b, Nlk, Ppm1a, Htra3, Tgfb2, Npnt, Akr1c18, Igf1r, Cldn1, Acvr1l, Itga3, Adam17, Fndc4, Pxn, Cflar, Zfp703, Dusp22, Mef2c, Chst11, Lemd3, Wnt7a, Wwox, Creb1, Smad4, Fbn1, Dbn1</i>
GO:1990090	cellular response to nerve growth factor stimulus	19/54	4.79 E-02	<i>Rapgef2, Coro1a, Arf6, Kat2a, Foxo3, Tmem108, Magi2, Rab35, Dync1li2, Akt1, Ntrk2, Cib1, Usp8, Bdnf, Wasf1, Creb1, Rapgef1, Dync1li1, Ehd1</i>
GO:0035924	cellular response to vascular endothelial	18/50	4.55 E-02	<i>Egr3, Pdgfb, Vegfa, Dll4, Ccbe1, Flt1, Sema6a, Akt1, Myo1c, Ptp4a3, Prkd2, Nr4a1, Dab2ip, Vegfc, Adamts3, Ern1, Dll1, Foxc1</i>

Gene Set	Description	Overlap/ Size	FDR	Gene Symbols
GO:0001662	growth factor stimulus behavioral fear response	17/45	3.51 E-02	<i>Gja1, Eif4e, Eif4g1, Mdk, Fbxl20, Adcyap1, Grik2, Cck, Mapk8ip2, Htr1a, Als2, Grin2b, Apoe, Mef2c, Bdnf, Cckbr, Usp46</i>
GO:0031987	locomotion involved in locomotory behavior	8^14	2.35 E-02	<i>Arrdc3, Gpr37, Rcan1, Cln6, Vps35, Rcan2, Ghsr, Dbn1</i>
GO:0007613	memory	43/142	2.05 E-02	<i>Ldlr, Crhr1, Atxn1, Paip2, Rcan1, Srf, Kenk10, Kat2a, Ctms, Slc24a2, Mdk, Atxn1l, Foxo6, Sgk1, Chrna7, Adcy8, Rcan2, Cx3cr1, Htr7, Kenk2, Arc, Hrh3, Btdb9, Cck, Lgmn, Kenk4, Calb1, Sorcs3, Grin2b, Cnr1, Itga3, Grin2a, Mtor, Kmt2b, Pak6, Apoe, Ntrk2, Htr2a, Bdnf, Egr1, Reln, Creb1, Pak7</i>
GO:0007612	learning	49/159	8.56 E-03	<i>Jun, Btg2, Hmgcr, Crhr1, Atxn1, Kit, Srf, Ctms, Slc24a2, Hif1a, Fos, Kras, Atxn1l, Drd5, Cacna1c, Sgk1, Adgrb3, Chrna7, Ephb2, Nptx2, Ppt1, Arc, Hrh3, Cln3, Cck, Lgmn, Sorcs3, Mapk8ip2, Arf4, Gmfb, Ifi20, Grin2b, Uba6, Grin2a, Mtor, Atp1a2, Dcdc2a, Pak6, Ntrk2, Slc6a1, Bdnf, Ap1s2, Fos1l, Foxp2, Nlgn3, Reln, Creb1, Pak7, Stra6</i>
GO:0097305	response to alcohol	67/240	1.68 E-02	<i>Hmgcr, Crhr1, Avpr1a, Aacs, Ccnd1, Smad2, Rara, Tnc, Phb, Gramd1b, Ccl3, Trp53inp1, Fos, Hmgcs1, Fosb, Foxo3, Hdac8, Adcyap1r1, Setd7, Arsa, Mstn, Chrna7, Adcy8, Alad, Hnrnpd, Ptger4, Grin3a, Abca1, Acaca, Cdk4, Itpr2, Htr7, Rgs2, Adcyap1, Sli3, Vhl, Stat3, Prkaa2, Larp1, P2ry6, Klf4, Ggh, Akt1, Maob, Grin2b, Cldn3, Oprm1, Got2, Akr1c18, Igflr, Rhoa, Cldn1, Cnr1, Grin2a, Sod2, Cttna1, Mlc1, Birc2, Tufm, Usp46, Hsd3b5, Mgmt, Ireb2, Htr1b, Fos1l, Ahr, Crhbp</i>
GO:0006066	alcohol metabolic process	89/298	4.42 E-04	<i>Dhcr24, Fdft1, Insig1, Hsd17b7, Mvd, Ldlr, Sqle, Hmgcr, Cyp51, Hmgcs2, Nsdhl, Inpp5j, Cyp1b1, Fdps, Sreb2, Sc5d, Sord, Akr1b3, Pgp, Napepld, Fgfl, Hmgcs1, Adcyap1r1, Cln6, Sptlc2, Mvk, Chka, Cyp39a1, Lss, Inpp5k, Limal, Rdh12, Arv1, Pecr, Sult2b1, Tpi1, Ip6k2, Sgpp1, Abca1, Acer2, Mbtps1, Rdh11, Prkaa2, Lrp1, Inpp5a, Thrb, Clcn2, P2ry6, Apobr, Vldlr, Saa1, Acadl, Soat1, Ppip5k2, Ip6k1, Erlin2, Dhrs3, Tkfc, Dhrs4, Akr1c18, Asah2, Akr1b10, Lcat, Ephx1, Impa2, Bmp6, Gdpd1, Mtmr7, Mas1, Apoe, Itpka, Gpd1, Dkk3, Aldh3b1, Por, Slc37a2, Sphk2, Aldh3a2, Inpp1, Plek, Dgat1, Sor1l, Dpagt1, Gpd2, Ces1d, Ebp, Mogat2, Tnf, Itpk1</i>
GO:0046165	alcohol biosynthetic process	41/127	8.30 E-03	<i>Dhcr24, Fdft1, Insig1, Hsd17b7, Mvd, Hmgcr, Cyp51, Hmgcs2, Nsdhl, Fdps, Sc5d, Akr1b3, Pgp, Fgfl, Hmgcs1, Adcyap1r1, Sptlc2, Mvk, Lss, Ip6k2, Acer2, Prkaa2, Clcn2, P2ry6, Ppip5k2, Ip6k1, Erlin2, Asah2, Ephx1, Impa2, Bmp6, Mas1, Apoe, Itpka, Dkk3, Por, Sphk2, Plek, Ces1d, Ebp, Tnf</i>