

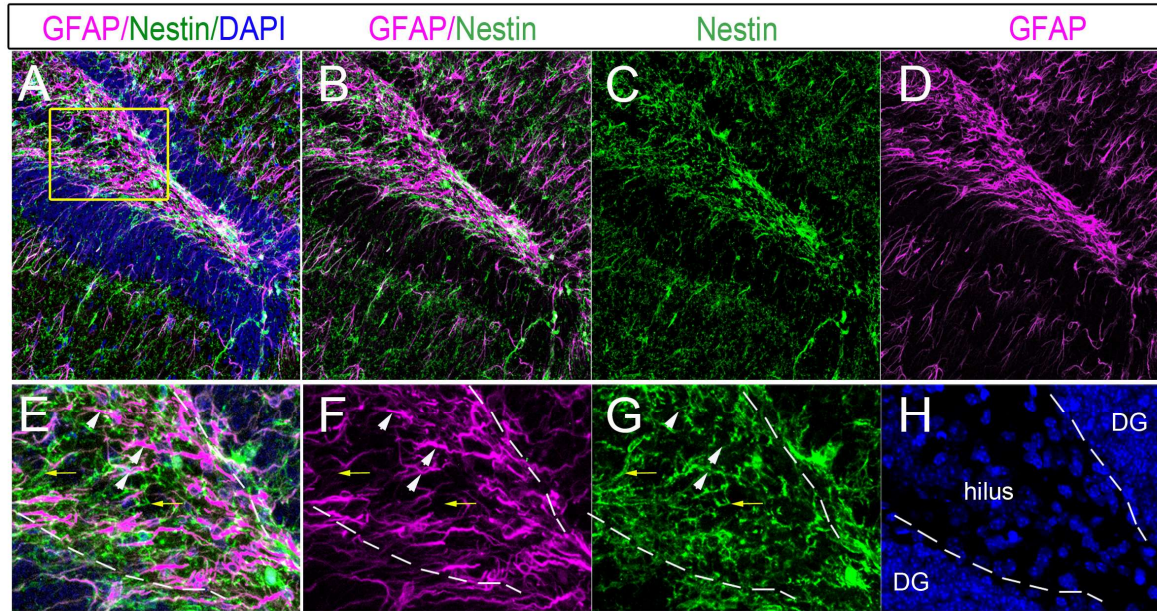
Supplemental Table 1. Top 20 differentially expressed genes from PTE⁺ hippocampal astrocytes vs PTE⁻

Ipsilateral Hippocampus			
Genes	log2 Fold Change	P-value	Function
<i>Spdl1</i>	24.4	7.7E-15	Required for the localization of dynein and dynactin to the mitotic kintochore and spindle microtubules.
<i>Slc16a14</i>	10.3	1.0E-03	Transport of monocarboxylates across the plasma membrane.
<i>Elavl3</i>	2.4	5.5E-03	Binds to AU-rich sequences of target mRNAs, including VEGF mRNA. Involved in neuronal differentiation and maintenance.
<i>B630019K06Rik</i>	2.7	1.0E-02	RIKEN cDNA B630019K06 gene.
<i>Slitrk4</i>	5.3	1.2E-02	Involved in synaptogenesis, promotes synapse differentiation and suppresses neurite outgrowth.
<i>Myef2</i>	1.7	1.3E-02	Transcriptional repressor of the myelin basic protein gene (MBP).
<i>Csmd1</i>	2.5	1.9E-02	Cub and sushi domain-containing protein 1; Belongs to the CSMD family.
<i>Zfp202</i>	3.4	2.3E-02	Krab and scan domains-containing zinc finger protein; Zinc finger protein 202.
<i>Zfp334</i>	2.4	2.6E-02	Krab domain-containing zinc finger protein; Zinc finger protein 334.
<i>Jmjd1c</i>	0.8	2.6E-02	Stone demethylase that specifically demethylates 'Lys-9' of histone H3.
<i>Trim61</i>	-25.4	2.1E-15	Apelin receptor early endogenous ligand; acts as a mitogen by promote cell migration
<i>Tlr13</i>	-25.6	2.1E-15	Control host immune response against pathogens through pattern recognition
<i>Lilrb4a</i>	-25.3	3.6E-15	Leukocyte immunoglobulin-like receptor, interferes with TNFRSF5-signaling and NF-kappa-B up- regulation
<i>Alox5ap</i>	-24.5	3.3E-14	Arachidonate 5-lipoxygenase-activating protein; Required for leukotriene biosynthesis.
<i>Slc47a1</i>	-24.2	6.8E-14	Multidrug resistance protein.
<i>Cutal</i>	-10.5	6.8E-09	Periplasmic divalent cation tolerance protein; cutA divalent cation tolerance homolog-like.
<i>Lrrc17</i>	-4.0	1.8E-05	Bone homeostasis. Acts as a negative regulator of RANKL-induced osteoclast precursor differentiation from bone marrow precursors.
<i>Ncf4</i>	-9.8	1.5E-04	Neutrophil cytosol factor 4; Component of the NADPH-oxidase, oxidative burst and ROS regeneration.
<i>Adamts2</i>	-6.5	2.3E-04	Metallopeptidase, disintegrin and metalloproteinase with thrombospondin motifs 2.
<i>Ush1g</i>	-6.9	3.0E-04	Required for normal development and maintenance of cochlear hair cell bundles.
Contralateral hippocampus			
Genes	log2 Fold Change	P-value	Function
<i>Sema3f</i>	11.2	1.63E-16	Required for radial and longitudinal organization of myelinated axons and Conduction of nerve impulses in myelinated nerve fibers.
<i>Cd209d</i>	24.2	9.95E-15	Semaphorin-3F; Sema domain, immunoglobulin domain.
<i>Prss35</i>	3.9	1.10E-05	Protease, serine 35; Belongs to the peptidase S1 family.
<i>Slco4a1</i>	11.0	4.54E-04	Mediates the Na(+)-independent transport of organic anions.

<i>Adgrf5</i>	2.1	6.97E-03	Adhesion G protein-coupled receptor. Role in lung surfactant homeostasis
<i>Mprp</i>	0.8	7.15E-03	Required for the regulation of the actin cytoskeleton by RhoA and ROCK1, promotes disassembly of stress fibers in neuronal cells.
<i>Sult5a1</i>	3.1	7.65E-03	Sulfotransferase family 5A, member 1; Belongs to the sulfotransferase 1 family.
<i>Eno2</i>	1.6	7.83E-03	Neurotrophic and neuroprotective properties on a broad spectrum of central nervous system (CNS) neurons, promotes cell survival.
<i>Npy1r</i>	3.0	7.85E-03	Neuropeptide Y receptor type 1; Receptor for neuropeptide Y and peptide YY.
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<i>Cd3e</i>	-25.0	5.39E-15	Receptor on T-lymphocyte, role in adaptive immune response during T cell activation by antigen presenting cells.
<i>Ccnf</i>	-23.1	4.38E-13	Substrate recognition component of a SCF, E3 ubiquitin-protein ligase complex, acting as an inhibitor of centrosome reduplication.
<i>Exosc6</i>	-20.6	1.09E-10	MRNA Transport Regulator 3 Homolog. Constitutes one of the subunits of the multisubunit particle called exosome which mediates mRNA degradation.
<i>Cenpa</i>	-6.3	2.19E-08	Role in assembly of kinetochore proteins, mitotic progression and chromosome segregation.
<i>2810408A11Rik</i>	-10.8	5.99E-07	RIKEN cDNA 2810408A11 gene.
<i>Lrrc29</i>	-8.5	6.19E-05	Leucine rich repeat containing 29.
<i>Egr1</i>	-2.6	1.33E-04	Transcriptional regulator implicated in growth factors, DNA damage, and ischemia. Cell survival, proliferation and cell death.
<i>Ccdc69</i>	-10.0	1.76E-04	Scaffold to regulate the recruitment and assembly of spindle midzone components.
<i>Kif22</i>	-4.2	7.34E-04	Involved in spindle formation and the movements of chromosomes during mitosis and meiosis. Binds to microtubules and to DNA.
<i>Ednra</i>	-1.6	1.02E-03	Receptor for endothelin-1. Mediates its action by association with G proteins that activate a phosphatidylinositol- calcium second messenger system.
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Supplemental Table 2: Key gene that are differentially expressed in hippocampal PTE⁺ astrocytes

Location	Function	Gene	Fold change (log2)	p-value
Ipsilateral Hippocampus	Proliferation	<i>Nrtn</i>	-10.13	0.00
		<i>Eml1</i>	-1.81	0.01
		<i>Prkcz</i>	-1.74	0.02
	Migration	<i>Elavl3</i>	2.40	0.01
		<i>Trim61</i>	-25.36	0.00
		<i>Mien1</i>	-1.24	0.03
		<i>Gm13306</i>	-1.99	0.04
	Cell morphology	<i>Slitrk4</i>	5.33	0.01
		<i>Sept3</i>	-0.81	0.02
Contralateral Hippocampus	Proliferation	<i>Egr1</i>	-2.63	0.00
		<i>Fos</i>	-2.22	0.00
		<i>Lsamp</i>	-0.37	0.00
		<i>Mdk</i>	-0.60	0.01
		<i>Ptn</i>	-0.36	0.02
		<i>Eno2</i>	1.56	0.01
	Migration	<i>Map2</i>	0.71	0.02
		<i>Unc5a</i>	3.00	0.04
	Cell morphology	<i>Sema3f</i>	11.17	0.00
		<i>Mprp</i>	0.77	0.01
		<i>Map2</i>	0.71	0.02
		<i>Map1b</i>	1.17	0.05



Supplemental Figure 1. Immunofluorescence of GFAP and nestin staining in the DG. (A-D) Max z-projection of 10x confocal image showing GFAP (purple) and nestin (green) staining in the DG at four months post-injury. Merge image (A, B) shows GFAP and nestin staining co-localize (white) in the SGZ of the DG but not hilus. (E-H) Higher magnification from A-inset showing lack of co-localization of hilar astrocytes with the neural stem/progenitor marker nestin. Increased astrocyte coverage in the post-injury hilus is not the result of aberrant migration of the neural stem cell pool which express both GFAP and nestin. DG=dentate gyrus.