Supplementary Material

Development, Specification, and Diversity of Callosal Projection Neurons

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Table S1. Genes expressed in callosal projection neurons (CPN) and their progenitors

	Gene	Expression	Developmental Stage	Published Function in CPN/progenitors	Refs
CPN Progenitors	*Ap2g*	VZ progenitors	embryonic	regulates basal progenitor fate, and formation of layer II/III CPN in the occipital cortex	[S1]
	Brn1	SVZ IPCs and migrating neuroblasts	embryonic	together with *Brn2*, regulates generation and migration of layers II-IV	[S2, S3]
	Brn2	SVZ IPCs and migrating neuroblasts	embryonic	together with *Brn1*, regulates generation and migration of layers II-IV	[S2, S3]
	Cux1	mitotic SVZ IPCs	embryonic	unknown	[S4]
	Cux2	mitotic SVZ IPCs	embryonic	regulates SVZ progenitor proliferation and generation of superficial layers	[S4-S6]
	Lhx2	VZ and SVZ progenitors	embryonic	regulates cortical hem formation	[S7, S8]
	Svet1	SVZ IPCs	embryonic	unknown	[S9]
	Tbr2	SVZ IPCs	embryonic	regulates IPC specification, and expansion of all cortical layers.	[S10-S12]
	Tlx	VZ and SVZ progenitors	embryonic	regulates generation of layers II/III and size of corpus callosum	[S13, S14]
	Unc5d	SVZ IPCs	embryonic	unknown	[S15]
Post-mitotic CPN	*Brn1*	layers II/III and IV	maintained through early postnatal development	unknown	[S2, S3]
	Brn2	layers II/III and IV	maintained through early postnatal development	unknown	[S2, S3]
	Btg1	CPN in layers II/III	high at E18, decreasing postnatally	unknown	[S16]
	Cav1	CPN in deep sublamina of II/III, and Va	high at P3, and decreased by P14	unknown	[S16]
	Chn2	CPN in deep sublamina of II/III	high at P6, with expression maintained at P14	unknown	[S16]
	Cited2	CPN in layers II/III, V,	high at E18, decreasing	unknown	[S16]

		and VI	postnatally		
	Cux1	layers II/III and IV	from embryonic development through adulthood	regulates dendritic branching, and synapse formation of layer II/III CPN	[S4, S17]
	Cux2	layers II/III and IV	from embryonic development through adulthood	regulates dendritic branching, and synapse formation of layer II/III CPN	[S4, S6, S17]
	Dkk3	CPN in layer VI	increasing expression postnatally	unknown	[S16]
	Dtx4	cortical plate and superficial sublamina of II/II, layer IV	early post-mitotic until early postnatal (decreased by P14)	unknown	[S15]
	EphA3	CPN in superficial sublamina of II/III	high at E18, decreasing postnatally	unknown	[S16]
	Frmd4b	CPN in superficial sublamina of II/III	high at E18, decreasing postnatally	unknown	[S16]
	Gfra2	CPN in Layers V and VI	increasing expression postnatally	unknown	[S16]
	Gpr6	layers II/III, highest occipital	expressed from P3-P15, with highest expression at P6.	unknown	[S18]
	Hspb3	CPN in layers II/III, V, and VI	high at P3, with expression maintained at P14	unknown	[S16]
	Inhba	CPN in layers II/III	high at P3, and decreased by P14	unknown	[S16]
	Kitl	layers II/III, IV, and early VI	early post-mitotic until early postnatal (decreased by P14)	unknown	[S15]
	Limch1	CPN in layers II/III	high at E18, decreasing postnatally	unknown	[S16]
	Lhx2	layers II-IV	high embryonic and early postnatal expression, decreasing by adulthood	necessary to specify neocortex	[S8, S12]
	Lmo4	CPN in layers II/III and V	Increases in CPN throughout postnatal	regulates area identities and connectivity of somatosensory cortex	[S19-S22]

			development, with highest expression medially		
	Lpl	CPN in layers II/III, V, and VI	high at P3, and decreased by P14	unknown	[S16]
	Mdga1	preplate, IZ, and cortical plate. Layers II/III, and layers IV and VIa in S1	high preplate expression at E13.5 and high cortical expression by P7	controls correct migration of layer II/III neurons	[S23, S24]
	Mef2c	cortical plate and layers II/III, IV	early post-mitotic until early postnatal (decreased by P14)	critical for differentiation of neocortical neurons	[S15, S25]
	Mena	layers II/III, and V	from embryonic development through adulthood	plays a role in actin cytoskeletal dynamics, and is necessary for formation of the corpus callosum	[S26]
	miR-189	layers II-IV	high broad neocortical expression at P9 becoming restricted to layers II-IV by P14	binds to *Slitrk1*, whose overexpression increases dendrite length	[S27]
	Nectin-3	CPN in the middle sublamina of II/III	high at P6, and decreased by P14	unknown	[S16]
	Nnmt	CPN in the superficial sublamina of II/III	high at P3 and P6, and decreased by P14	unknown	[S16]
	PlexinD1	CPN in Va, and the superficial sublamina of II/III	high at P3, with expression maintained at P14	unknown	[S16]
	Ptn	CPN in deep sublamina of II/III	high E18-P6, and decreased by P14	unknown	[S16]
	Satb2	layers II-IV, V, and VI	early post-mitotic until early postnatal (decreased by P7)	represses Ctip2 to regulate CPN identity and axonal midline crossing	[S28-S30]
	Svet1	layers II-IV	maintained from progenitors into adulthood (not observed after P60)	unknown	[S9]
	Tcrb	CPN in layers Vb and	increasing expression	unknown	[S16]

		VI	postnatally		
	Unc5d	cortical plate and layers II/III, IV	early post-mitotic until early postnatal (decreased by P14)	unknown	[S15]

Abbreviations: VZ, ventricular zone; SVZ, subventricular zone; IPC, intermediate progenitor cell; E, embryonic day; P, postnatal day; S1, primary somatosensory cortex; roman numerals (I-VI) label neocortical layers.

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