

Validation of first PSP amplitudes' CVs. See Figure 2B2.

Pre	Post	<i>in vitro</i> (mV)	<i>in silico</i> (mV)	Reference
L4_EXC	L4_EXC	0.37±0.16	0.25±0.06	<i>Feldmeyer et al. (1999)</i>
L4_EXC	L4_FS	0.27±0.13	0.38±0.25	<i>Beierlein et al. (2003)</i>
L4_FS	L4_EXC	0.25±0.11	0.28±0.09	<i>Beierlein et al. (2003)</i>
L4_SS	L5_STPC	0.33±0.20	0.43±0.06	<i>Feldmeyer et al. (2005)</i>
L4_SS	L6_PC	0.50±0.11	0.51±0.06	<i>Qi and Feldmeyer (2016)</i>
L4_SS	L23_PC	0.27±0.13	0.32±0.07	<i>Feldmeyer et al. (2002)</i>
L5_TTPC	L5_TTPC	0.31±0.14	0.39±0.09	<i>Barros-Zulaica et al. (2019)</i>
L5_STPC	L5_STPC	0.58±0.24	0.51±0.06	<i>Le Bé et al. (2007)</i>
L23_PC	L23_PC	0.33±0.18	0.43±0.15	<i>Feldmeyer et al. (2006)</i>
L234_PC	L234_NBC	0.32±0.08	0.21±0.08	<i>Wang et al. (2002)</i>

Thick-tufted mtypes: L5_TPC:A, L5_TPC:B. Slender-tufted mtypes: L5_TPC:C, L5_UPC.

References

- Barros-Zulaica N**, Rahmon J, Chindemi G, Perin R, Markram H, Muller E, Ramaswamy S. Estimating the Readily-Releasable Vesicle Pool Size at Synaptic Connections in the Neocortex. *Frontiers in Synaptic Neuroscience*. 2019; 11(29). doi: [10.3389/fnsyn.2019.00029](https://doi.org/10.3389/fnsyn.2019.00029).
- Beierlein M**, Gibson JR, Connors BW. Two Dynamically Distinct Inhibitory Networks in Layer 4 of the Neocortex. *Journal of Neurophysiology*. 2003; 90(5):2987–3000. doi: [10.1152/jn.00283.2003](https://doi.org/10.1152/jn.00283.2003).
- Feldmeyer D**, Egger V, Lübke J, Sakmann B. Reliable synaptic connections between pairs of excitatory layer 4 neurones within a single 'barrel' of developing rat somatosensory cortex. *Journal of Physiology*. 1999; 521(1):169–190. doi: [10.1111/j.1469-7793.1999.00169.x](https://doi.org/10.1111/j.1469-7793.1999.00169.x).
- Feldmeyer D**, Lübke J, Sakmann B. Efficacy and connectivity of intracolumnar pairs of layer 2/3 pyramidal cells in the barrel cortex of juvenile rats. *Journal of Physiology*. 2006; 575(2):583–602. doi: [10.1113/jphysiol.2006.105106](https://doi.org/10.1113/jphysiol.2006.105106).
- Feldmeyer D**, Lübke J, Silver RA, Sakmann B. Synaptic connections between layer 4 spiny neurone-layer 2/3 pyramidal cell pairs in juvenile rat barrel cortex: Physiology and anatomy of interlaminar signalling within a cortical column. *Journal of Physiology*. 2002; 538(3):803–822. doi: [10.1113/jphysiol.2001.012959](https://doi.org/10.1113/jphysiol.2001.012959).
- Feldmeyer D**, Roth A, Sakmann B. Monosynaptic connections between pairs of spiny stellate cells in layer 4 and pyramidal cells in layer 5A indicate that lemniscal and paralemniscal afferent pathways converge in the infragranular somatosensory cortex. *Journal of Neuroscience*. 2005; 25(13):3423–3431. doi: [10.1523/JNEUROSCI.5227-04.2005](https://doi.org/10.1523/JNEUROSCI.5227-04.2005).
- Le Bé JV**, Silberberg G, Wang Y, Markram H. Morphological, electrophysiological, and synaptic properties of corticocallosal pyramidal cells in the neonatal rat neocortex. *Cerebral Cortex*. 2007; 17(9):2204–2213. doi: [10.1093/cercor/bhl127](https://doi.org/10.1093/cercor/bhl127).
- Qi G**, Feldmeyer D. Dendritic Target Region-Specific Formation of Synapses between Excitatory Layer 4 Neurons and Layer 6 Pyramidal Cells. *Cerebral Cortex*. 2016; 26(4):1569–1579. doi: [10.1093/cercor/bhu334](https://doi.org/10.1093/cercor/bhu334).
- Wang Y**, Gupta A, Toledo-Rodriguez M, Wu CZ, Markram H. Anatomical, physiological, molecular and circuit properties of nest basket cells in the developing somatosensory cortex. *Cerebral cortex*. 2002; 12(4):395–410. doi: [10.1093/cercor/12.4.395](https://doi.org/10.1093/cercor/12.4.395).