

Supplementary Material Online

Newborn cortical neurons: only for neonates?

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Table S1: Reports of the lack of adult neurogenesis in the adult neocortex

Species	Age	BrdU	Additional Details	Conclusions	Notes	Refs
Humans						
* 7 adult humans for ¹⁴ C * Unknown number of humans for BrdU	Unknown	*BrdU: 250 mg saline (i.v.) * No BrdU/NeuN+	* ¹⁴ C: 5 humans born before and 2 after the nuclear test * only <1% neurogenesis possible and would be transient (<4.2 months)	*None detected (if they exist, <1%)	Detection sensitivity may be low	[S1]
Monkeys						
10 adult male and nonpregnant female <i>Macaca fascicularis</i> and <i>mulatta</i> monkeys	>5 years old	* BrdU (i.v.) * 5 daily injections of BrdU (50 or 75 mg/kg), survival: 2 hours or 12, 31, 75, 92 days * One monkey: 10 days after 4 injections/day (100 mg/kg) * One monkey: 23 days after 2 injections, 5 days apart (75 mg/kg)	None	* BrdU/NeuN: none * Identification of BrdU+ satellite glia on top of neurons		[S2]
Rats						
Male Wistar rats	11-12 weeks old	* BrdU: 200 mg/kg, one IP injection or twice a day for 2 or 3 days * Survival: different time points	Dil presumably does not originate from SVZ but an adjacent temporal	Transient neurogenesis and no BrdU/NeuN+ cells in the adjacent	TGL = nodal point surrounded by	[S3]

		*Identification of a temporal germinal layer and stream containing BrdU+ progenitors (e.g. Pax6+), BrdU+ immature neurons (e.g. DCX+ and Tuj1+) and BrdU/NeuN+ cells.	germinal zone (TGL)	temporal cortex	amygdala, hippocampus and temporal neocortex	
* Wistar rats * Flathead mutant rat (microcephaly and seizures)	Neonates: P2-P9 Adults: P28, ≥P68	* BrdU: 40 mg/kg IP, 1 to 4 injections spaced 2-4 hrs, P10-P15, * One day prior to or after GFP retrovirus injection No NeuN/BrdU+ cells found that were either GFP+ or GFP-, but identification of BrdU/DCX cells	* Retrovirus: 1-2x10 ⁸ titer, 1 µl injected into the anterior lateral ventricle * Injections at P2-3, P10-19: * NeuN+ pyramidal neurons at 1-14 days post-injection but nothing at >3 weeks * Injections in adults: nothing	Fusion of retrovirus-infected microglia with newborn pyramidal neurons	Focused on pyramidal neurons	[S4]
15 Wistar male rats	3-4 month old	* BrdU: one IP injection (50 mg/kg) * Survival: 2hr: DCX+/NG2+, not DCX+/NG2- 14-28 days: 7/1168 and 4/843 BrdU/DCX+/NG2- But no BrdU/NeuN+	None	Perhaps transient DCX+ cells generation but no neurons	Unknown BrdU+ counted for NeuN staining	[S5]
Mice						
C57BL/6 mice	2 month old	* BrdU: 50 mg/kg, one/day IP for 10 days * Survival: 4 weeks	None	No BrdU/NeuN found but only 40-50 cells analyzed		[S6]

Supplemental References

- S1 Bhardwaj,R.D. *et al.* (2006) Neocortical neurogenesis in humans is restricted to development. *Proc. Natl. Acad. Sci. U. S. A* 103, 12564-12568
- S2 Kornack,D.R. *et al.* (2001) Cell proliferation without neurogenesis in adult primate neocortex. *Science* 294, 2127-2130
- S3 Takemura,N.U. (2005) Evidence for neurogenesis within the white matter beneath the temporal neocortex of the adult rat brain. *Neuroscience* 134, 121-132
- S4 Ackman,J.B. *et al.* (2006) Fusion of microglia with pyramidal neurons after retroviral infection. *J Neurosci.* 26, 11413-11422
- S5 Tamura,Y. *et al.* (2007) Multi-directional differentiation of doublecortin- and NG2-immunopositive progenitor cells in the adult rat neocortex *in vivo*. *Eur. J. Neurosci.* 25, 3489-3498
- S6 Ehninger,D. *et al.* (2003) Regional effects of wheel running and environmental enrichment on cell genesis and microglia proliferation in the adult murine neocortex. *Cereb. Cortex* 13, 845-851