Emx1-iCre

This line is useful for driving Cre-mediated recombination of reporter lines, or for deleting floxed genes, in the neuroepithelium of the embryonic cerebral cortex.

To generate this line, we used a 130Kb genomic DNA fragment from a genomic PAC (PAC 357-D14) isolated from library RCPI21 (Oseogawa et al., 2000). The library contains genomic DNA from a female mouse, strain 129S6/SvEvTac1.

The 130Kb region used included all Emx1 coding exons as well as 75Kb upstream and 55Kb downstream (Fig.1A). We inserted the codon-improved version of Cre recombinase (iCre) (Shimshek et al., 2002) followed by an SV40 polyadenylation signal into the Emx1 gene, fusing iCre to the endogenous translation initiation codon (Fig.1B).

The modified PAC DNA was excised from the PAC using AscI and SwaI digestion prior to generating transgenic mice by pronuclear injection. In the developing mouse embryo, transgene expression can be detected in the cerebral cortex (Fig.1C).

Generation and characterization of the mouse has been described (Fogarty, 2005; Kessaris et al, 2006).

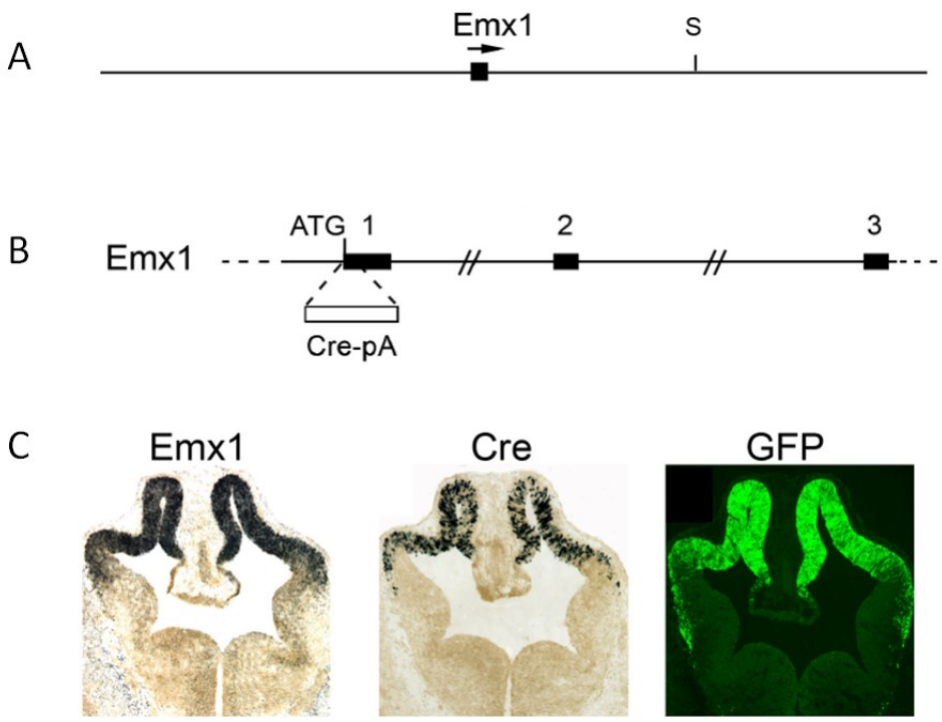

Fig. 1: **A:** Genomic DNA used for generating the Emx1-iCre PAC transgenic mouse. S: SwaI. **B:** Scheme showing modification of the Emx1 gene. **C:** In situ hybridization showing expression of Emx1 and Cre and immunohistochemistry showing activation of a GFP reporter gene in a Emx1-Cre;R26R-GFP mouse embryo at E11.5.

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