Gsh2-iCre

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

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To generate this line we used a 110Kb NotI genomic fragment taken from a genomic PAC isolated from library RCPI21 (Oseogawa et al., 2000). The library contains genomic DNA from a female mouse, strain 129S6/SvEvTac.

The 110Kb region used included all the Gsh2 coding exons, as well as ~25Kb upstream and ~60Kb 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 Gsh2 gene, fusing iCre to the endogenous translation initiation codon (Fig.1B).

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

Generation of the mouse is described (Kessaris et al., 2006). The mouse is also described here: https://www.informatics.jax.org/allele/MGI:3761171 and is distributed by JAX labs: B6;CBA-Tg(Gsx2-icre)1Kess/J Strain #:025806 (https://www.jax.org/strain/025806).

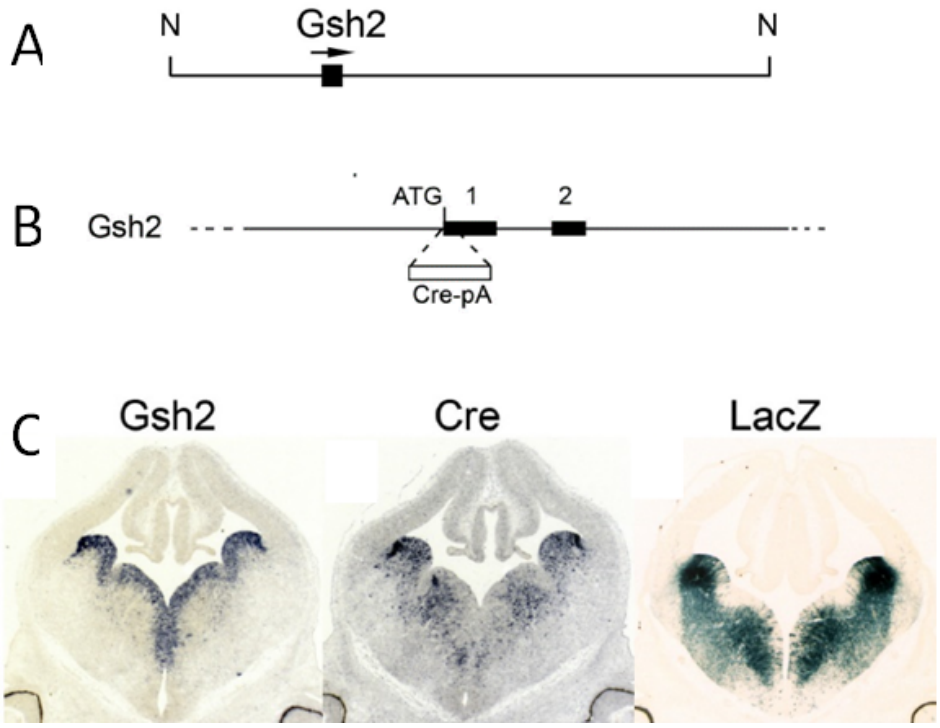

Fig. 1: A: Genomic DNA used for generating the Gsh2-iCre PAC transgenic mouse. N: NotI. **B:** Scheme showing modification of the Gsh2 gene. **C:** In situ hybridization showing expression of Gsh2 and Cre and activation of a LacZ reporter gene in a Gsh2-Cre;R26R-LacZ mouse embryo at E11.5.

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