Intersectional Cre Driver Lines Generated Using Split-Intein Mediated Split-Cre Reconstitution

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Supplementary materials

Supplementary Figure 1. Split-intein mediated efficient split-Cre reconstitution in cultured cortical slices.

Ex vivo electroporation of pCAGGS-Cre or split-Intein tagged pCAGGS-Split-Cre into cortices of E14.5 Rosa-loxp-STOP-loxp-tdTomato mouse embryos followed by organotypic culture. Equal amount of pCAGGS-mVenus was co-electroporated as a reference for transfection.

a, Electroporation of pCAGGS-mVenus and pCAGGS-Cre

b, Electroporation of pCAGGS-mVenus and pCAGGS-Cre-N-Intein-N

c, Electroporation of pCAGGS-mVenus and pCAGGS-Intein-C-Cre-C

d, Electroporation of pCAGGS-mVenus, pCAGGS-Cre-N-Intein-N and pCAGGS-Intein-C-Cre-C

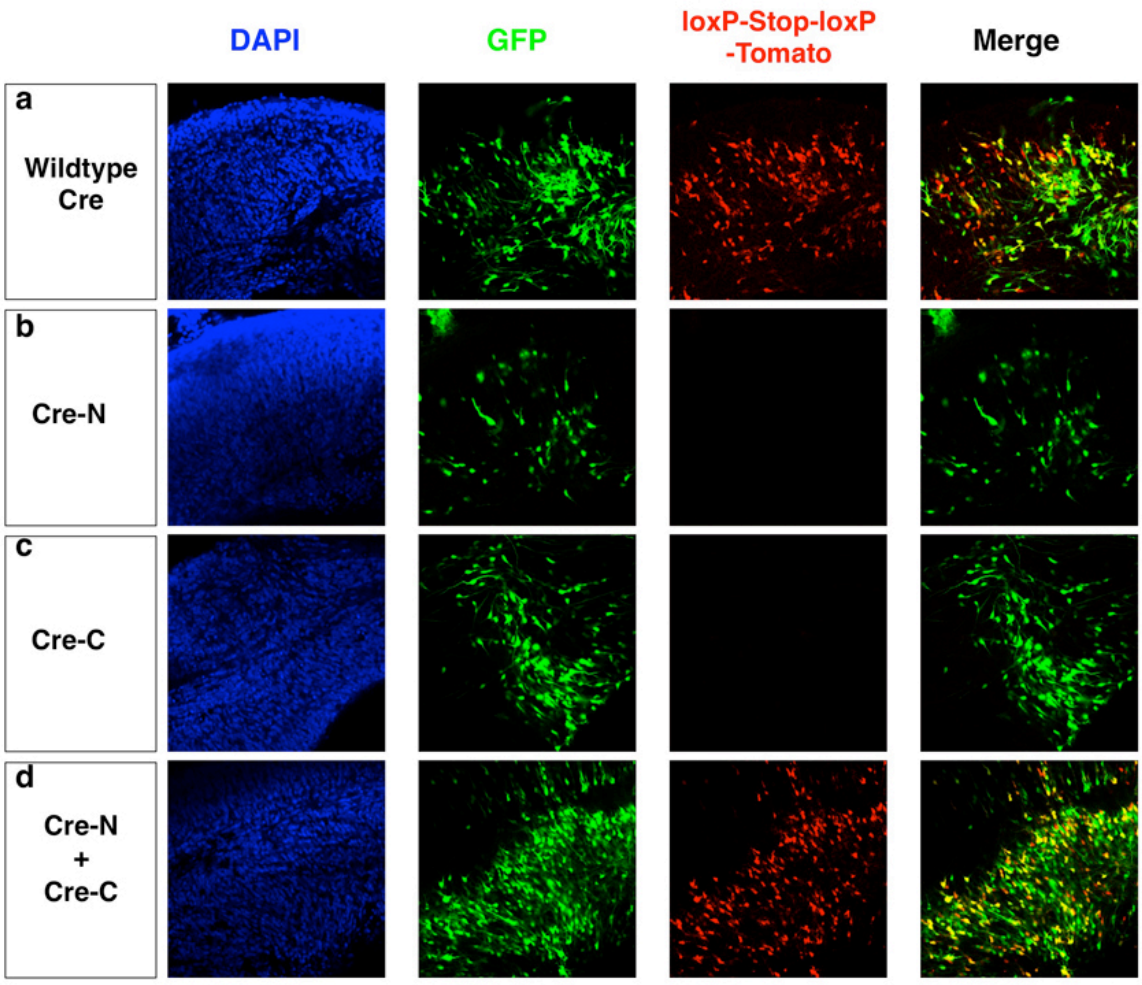
Supplementary Figure 2. Schematic representation and summary of the transgenic constructs and mouse lines.

a, Schematic drawing of the cloning vector and generation of transgenes. The fusion proteins encoding the Cre-N-intein-N or intein-C-Cre-C were ligated with IRES, the internal ribosome entry site, and further inserted into the unique NcoI site of the Hsp68LacZ gateway vector which contains the human enhancers of interest , a small promoter of the heat-shock protein 68, as well as the lacZ reporter gene.

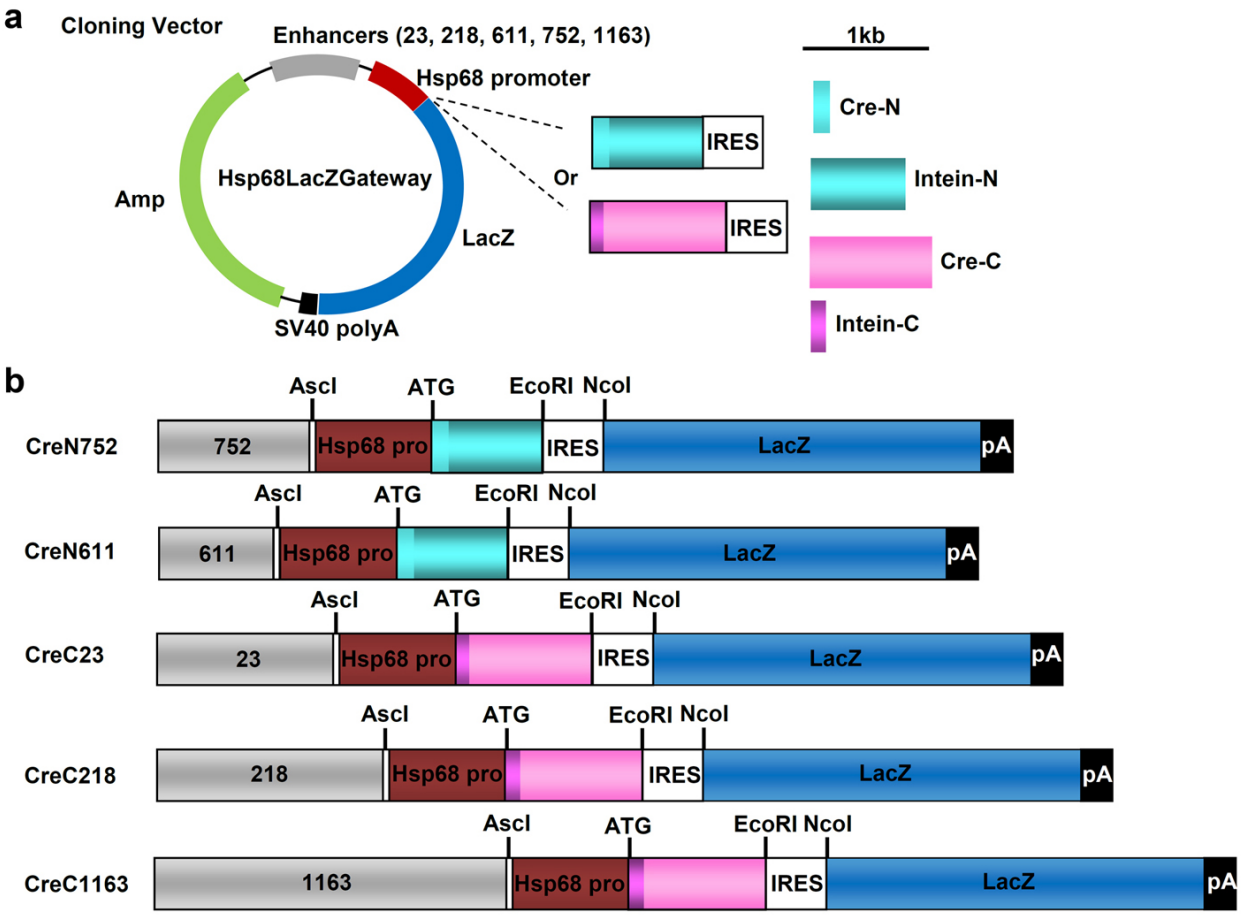
b, Schematic drawing of the 5 transgenic constructs.

c, Summary of the pairs of enhancers used to develop split-Cre reconstitution transgenic lines.

Supplementary Figure 1



Supplementary Figure 2



c

Combination of enhancers	Intersectional Expression Pattern	Construct
en-752 /en-1163[a]	Trigeminal Ganglion	752-Cre-N-Intein-N-IRES-LacZ 1163-Intein-C-Cre-C-IRES-LacZ
en-611/en-23[a]	Hindbrain	611-Cre-N-Intein-N-IRES-LacZ 23-Intein-C-Cre-C-IRES-LacZ
en-611/en-218[a]	Subsets neurons in cortex, midbrain and hindbrain	611-Cre-N-Intein-N-IRES-LacZ 218-Intein-C-Cre-C-IRES-LacZ

[a] Detailed information of selected human enhancers are available in the enhancer database (http://enhancer.lbl.gov)