C57BL/6JGpt-Gja10-iCre

Strain Name： C57BL/6JGpt-*Gja10*$^{em1Cin(iCre)}$/Gpt
Strain Type： Knock-in
Strain Number： T055137
Background： C57BL/6JGpt

Description

This mouse strain expresses codon optimized iCre recombinase [1] under the control of the Mouse *Gja10* promoter, the iCre replaced the the entire coding region of the *Gja10* gene by CRISPR/Cas9 technology. When crossed with a strain with loxP site flanked sequence in its genome, Cre-mediated recombination will result in excision of the DNA fragment between the two loxPs in retina and lens. Recombinase activity was also detected in liver.

Strategy

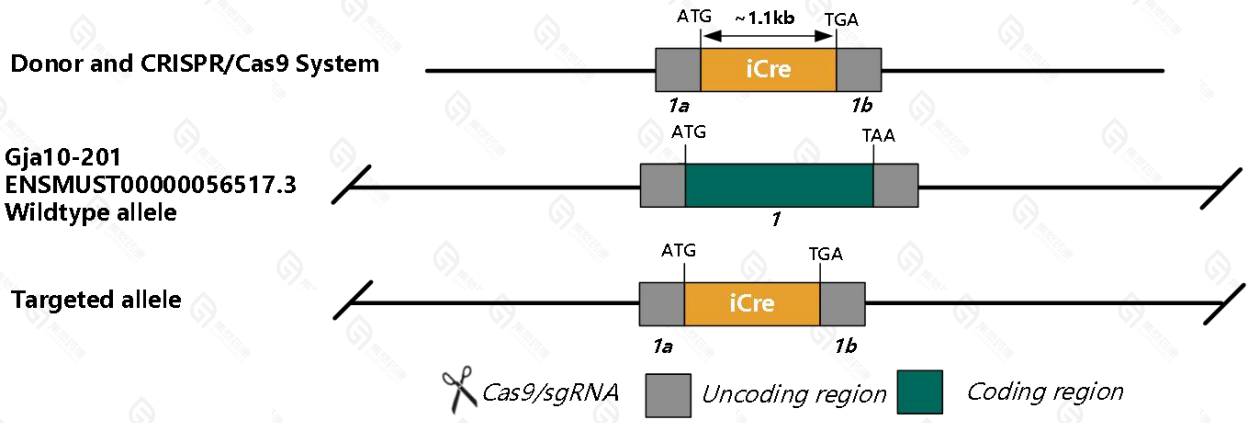

Fig.1 Schematic diagram of C57BL/6JGpt-Gja10-iCre model strategy.

Applications

1. Cre tool mice for specific induction of loxP recombination in retina and lens [2-3].

Data support

1. Validation methods & notes

Gja10-iCre mice was crossed with CAG-loxp-ZsGreen-Stop-loxp-tdTomato mice with ubiquitous reporter expression (hereafter referred as CAG-G/R mice), Cre-mediated recombination will lead to excision of ZsGreen and the stop cassette and expression of tdTomato, thus loss of green fluorescence and gain of red fluorescence will indicate Cre activity. Fluorescence imaging of frozen sections were performed to exhibit Cre activity in various tissues and organs. Imaging of sections were performed under a 200x microscopy. Note: these results may only represent the activity of Cre in this strain at the identical stage. Recombinase activity may be different at other stages in your application.

2. Images of tissues and organs with obvious Cre activity

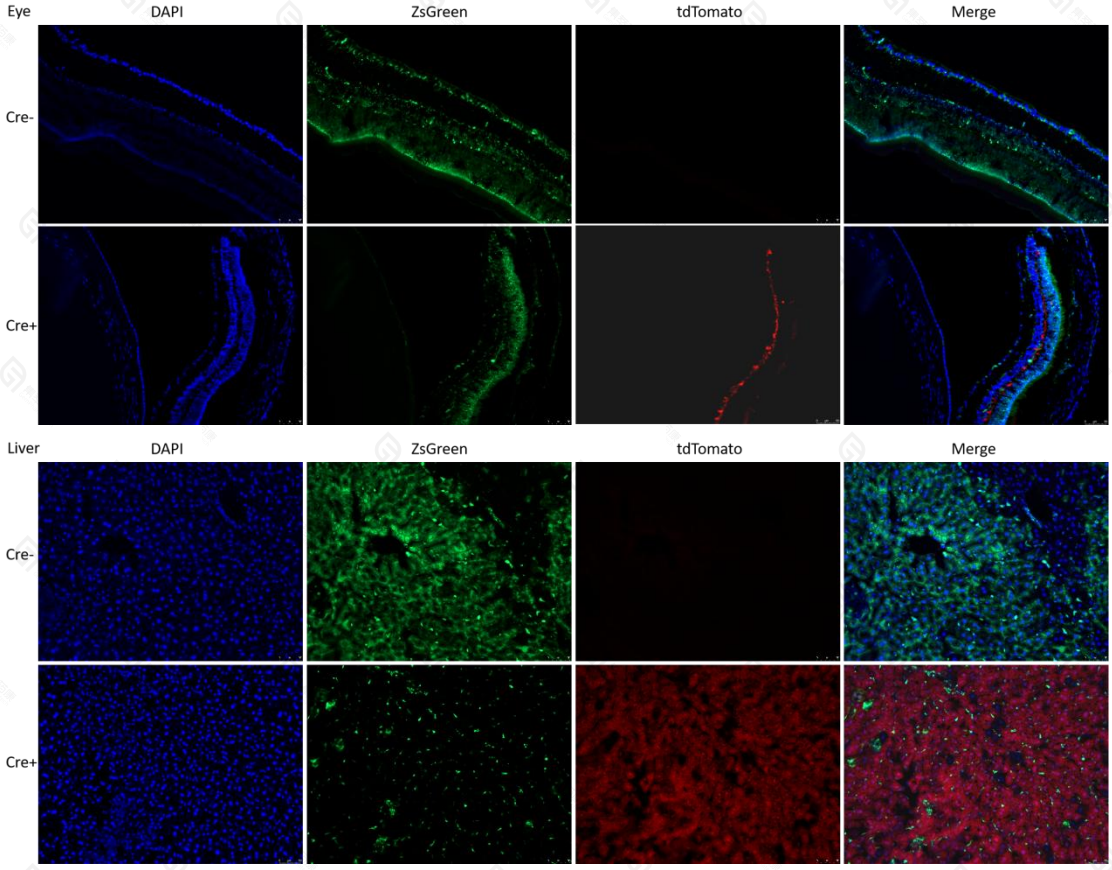

Fig 2. Fluorescence imaging of tissues and organs with obvious Cre activity.
Organ name was indicated in the left top of each subfigure group. Cre-: CAG-G/R single positive individuals; Cre+: Gja10-iCre, CAG-G/R double positive individuals.

3. Images of tissues and organs with little or no Cre activity

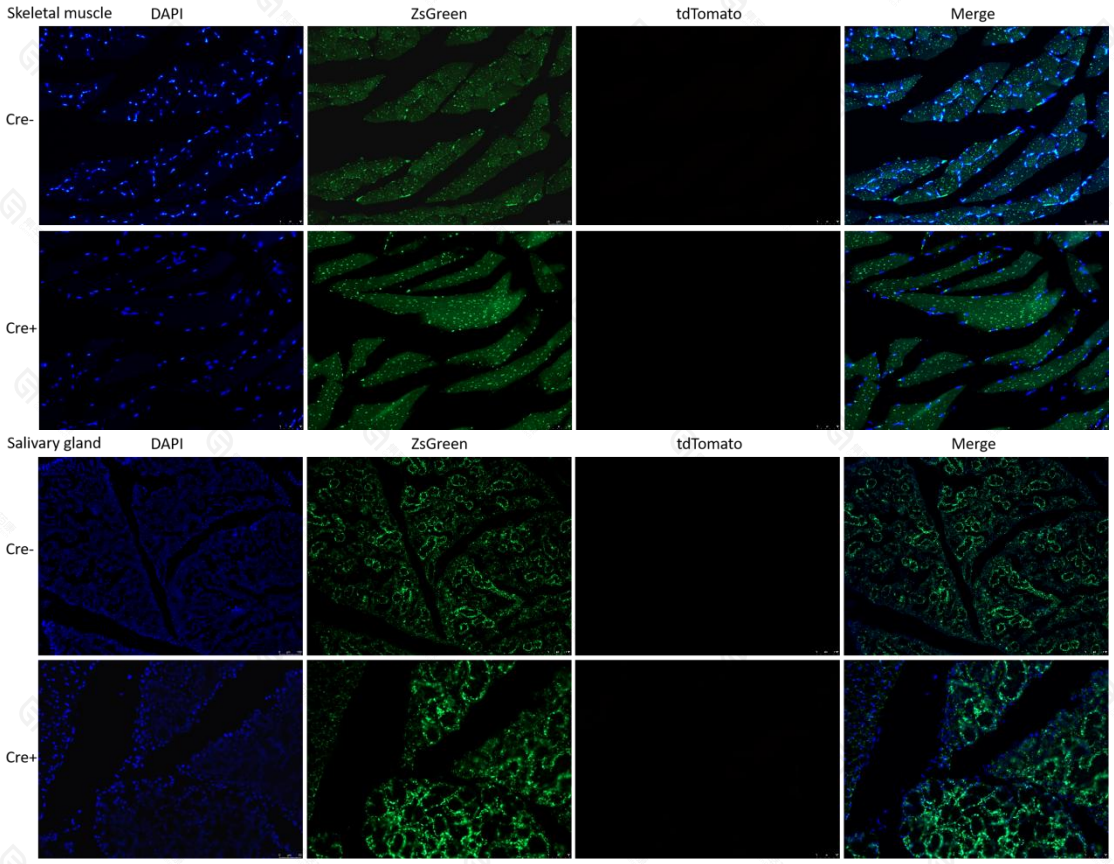

Fig 3. Fluorescence imaging of tissues and organs with little or no Cre activity.
Organ name was indicated in the left top of each subfigure group. Cre-: CAG-G/R single positive individuals; Cre+: Gja10-iCre, CAG-G/R double positive individuals.

Reference

1. Shimshek D R, Kim J, Hübner M R, et al. "Codon-improved Cre recombinase (iCre) expression in the mouse." genesis 2002, 32(1): 19-26.
2. Hirano AA, Liu X, Boulter J, et al. Targeted Deletion of Vesicular GABA Transporter from Retinal Horizontal Cells Eliminates Feedback Modulation of Photoreceptor Calcium Channels. eNeuro 2016, 3(2): ENEURO.0148-15.2016.
3. Li Q, Zhu H, Fan M, et al. Form-deprivation myopia downregulates calcium levels in retinal horizontal cells in mice. Exp Eye Res 2022, 218: 109018.