

C57BL/6JGpt-TagIn-iCre

Strain Name: C57BL/6JGpt-*TagIn*^{em1Cin(iCre-PolyA)}/Gpt

Strain Type: Knock-in

Strain Number: T006862

Background: C57BL/6JGpt

Description

This mouse strain expresses codon optimized iCre recombinase ^[1] under the control of the mouse endogenous *Tagln* promoter, iCre-PolyA was introduced to the downstream of the ATG of mouse *Tagln* 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 smooth muscle cells (SMCs) that comprise arteries and visceral organs. Recombinase activity was also detected in liver, heart and skeletal muscle. Note: Female mice have a reproductive phenotype, and heterozygous/homozygous females in breeding cages are prone to dystocia or miscarriage or death, and the homozygous obtained is not easy to survive, with a mortality rate of about 30%. It is recommended to breed heterozygous males with wild females.

Strategy

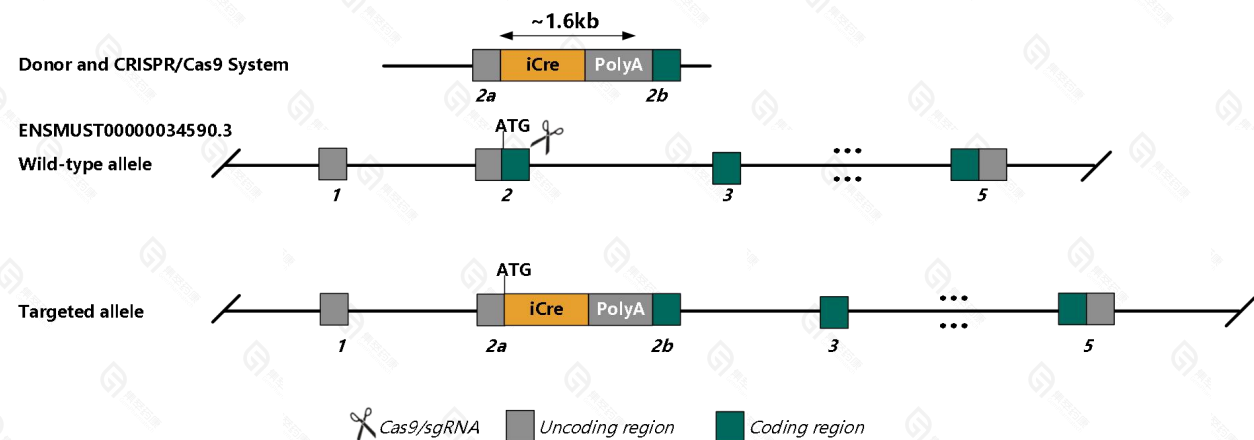


Fig.1 Schematic diagram of C57BL/6JGpt-TagIn-iCre model strategy.

Applications

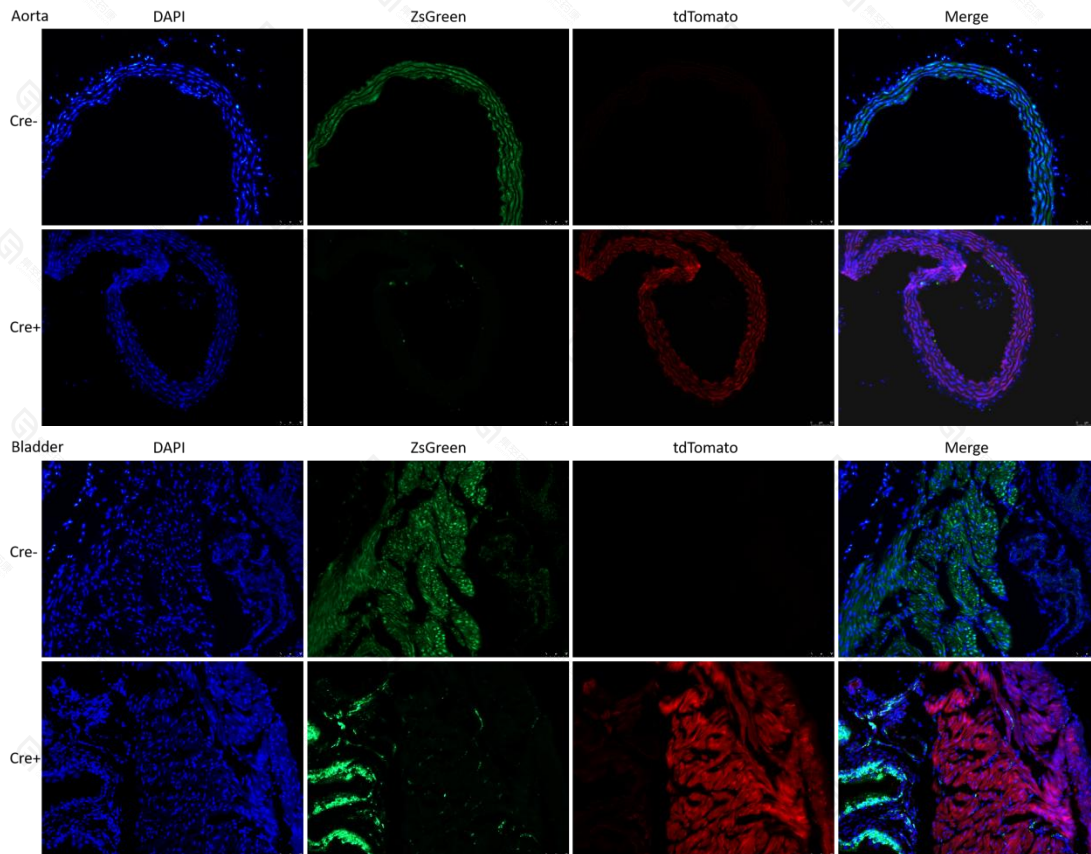
1. Cre tool mice for specific induction of loxP recombination in smooth muscle cells ^[2].

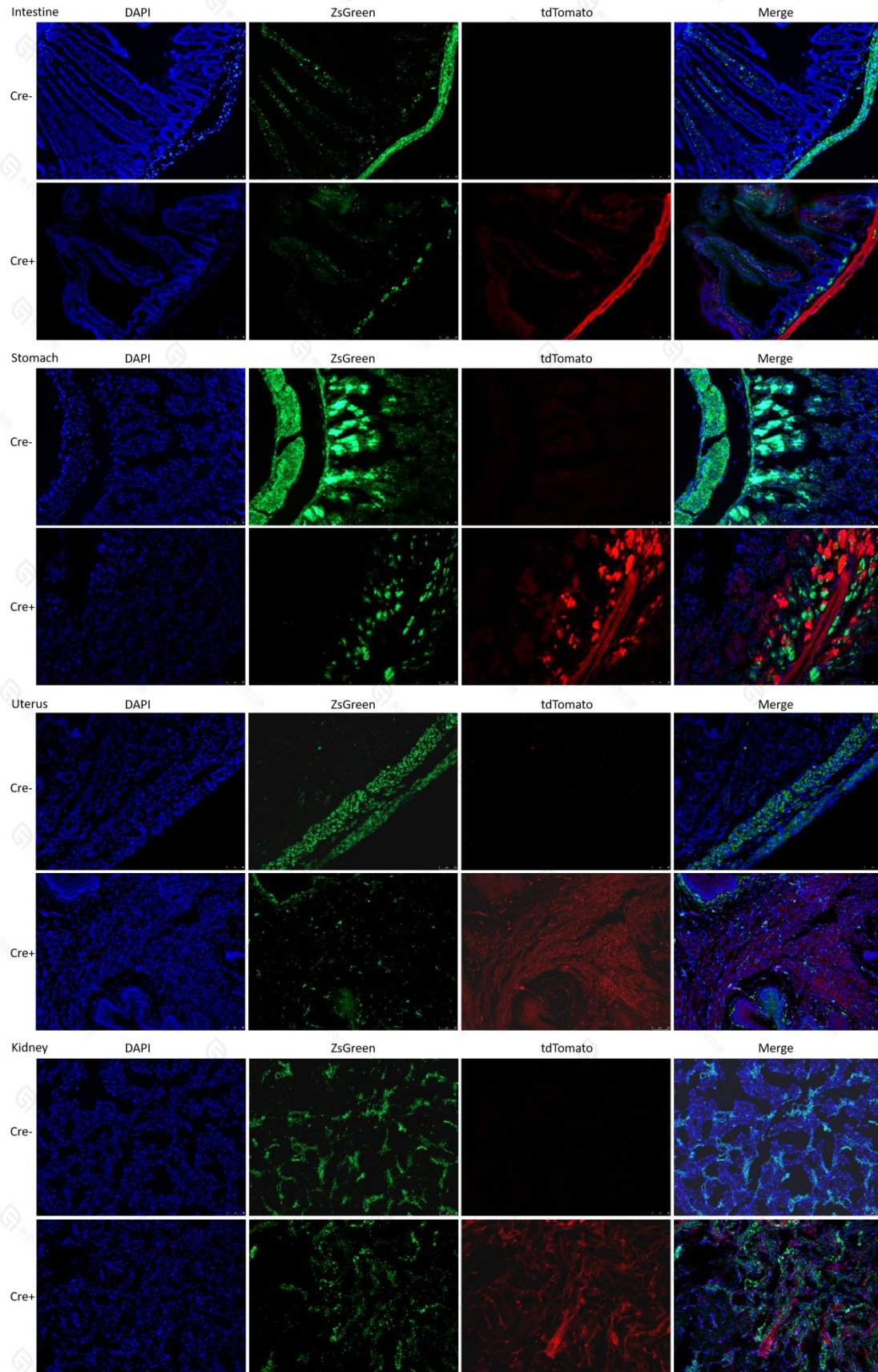
Data support

1. Validation methods & notes

Tagln-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





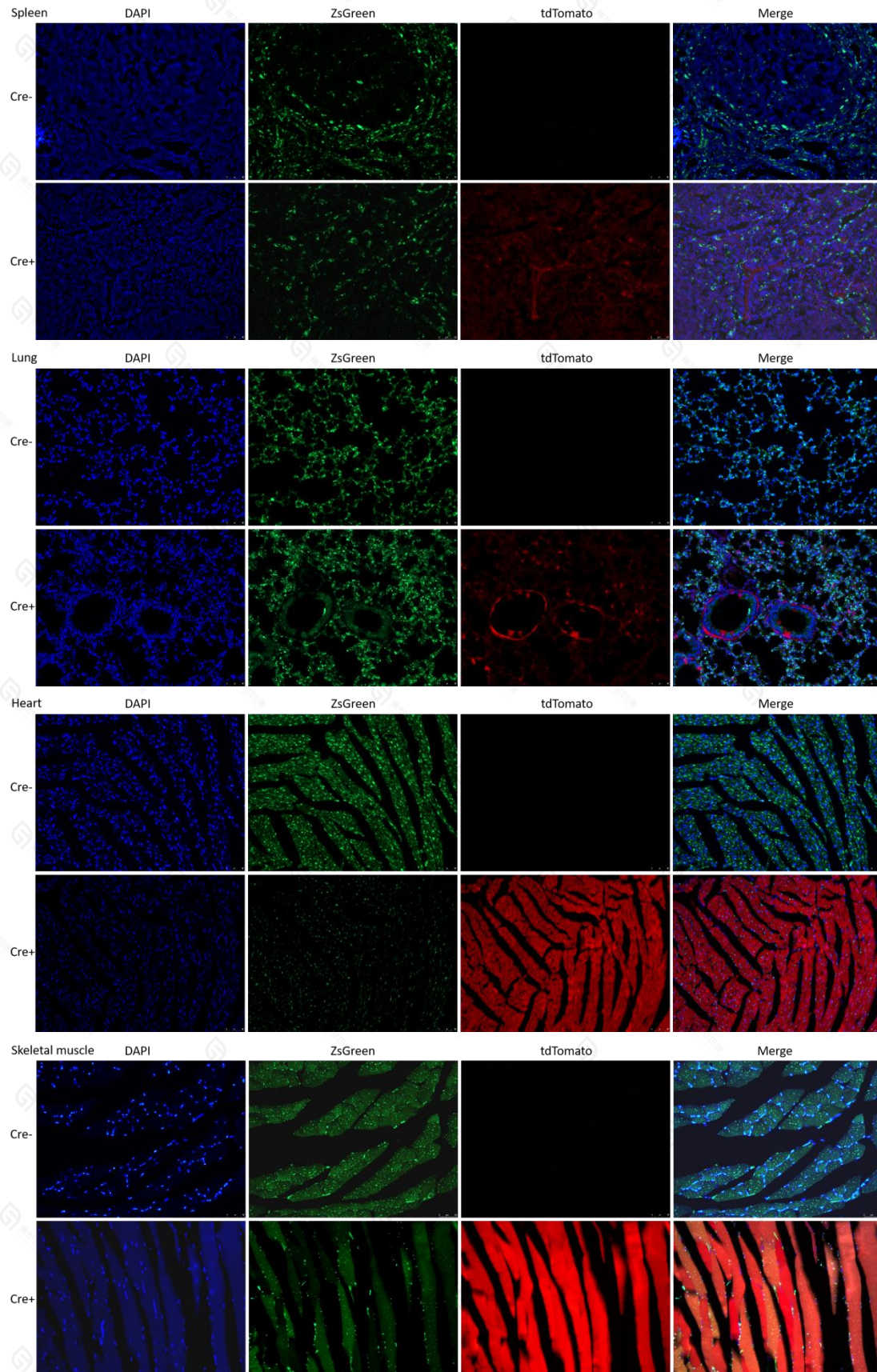


Fig 2. Fluorescence imaging of tissues and organs with obvious Cre activity.

Organ name was indicated in the left top of each subfigure group. Cre-: CAG-G/R single positive individuals; Cre+: TagIn-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. Zhang J, Zhong W, Cui T, et al. Generation of an adult smooth muscle cell-targeted Cre recombinase mouse model. *Arterioscler Thromb Vasc Biol*, 2006, 26(3): e23-4.