

B6-Tg(Cd8a-iCre)

Strain Name: C57BL/6JGpt-Tg(Cd8a-iCre)19/Gpt

Strain Type: Knock-in

Strain Number: T007005

Background: C57BL/6JGpt

Description

This mouse strain expresses codon optimized iCre recombinase ^[1] under the control of the mouse *Cd8a* promoter, the construct was inserted into mice genome via transgene 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 CD8a-expressing cells. Recombinase activity was detected in a proportion of cells in spleen, thymus and lymph node.

Strategy

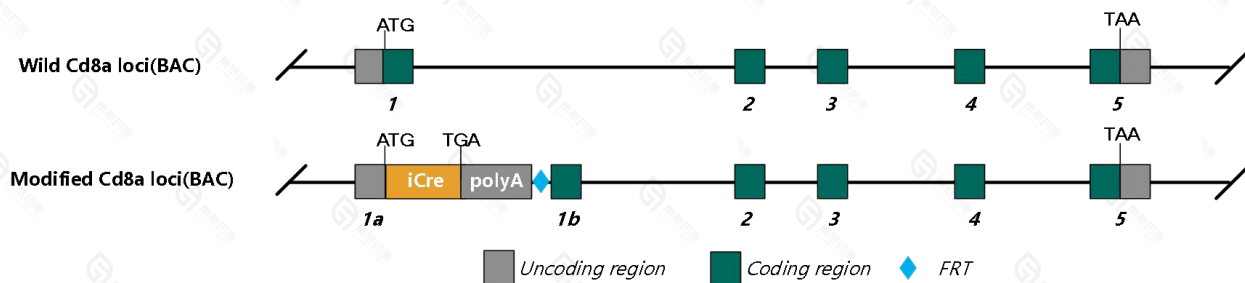


Fig.1 Schematic diagram of C57BL/6JGpt-Tg(Cd8a-iCre) model strategy.

Applications

1. Cre tool mice for specific induction of loxP recombination in CD8a-expressing cells ^[2].

Data support

1. Validation methods & notes

Tg(Cd8a-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

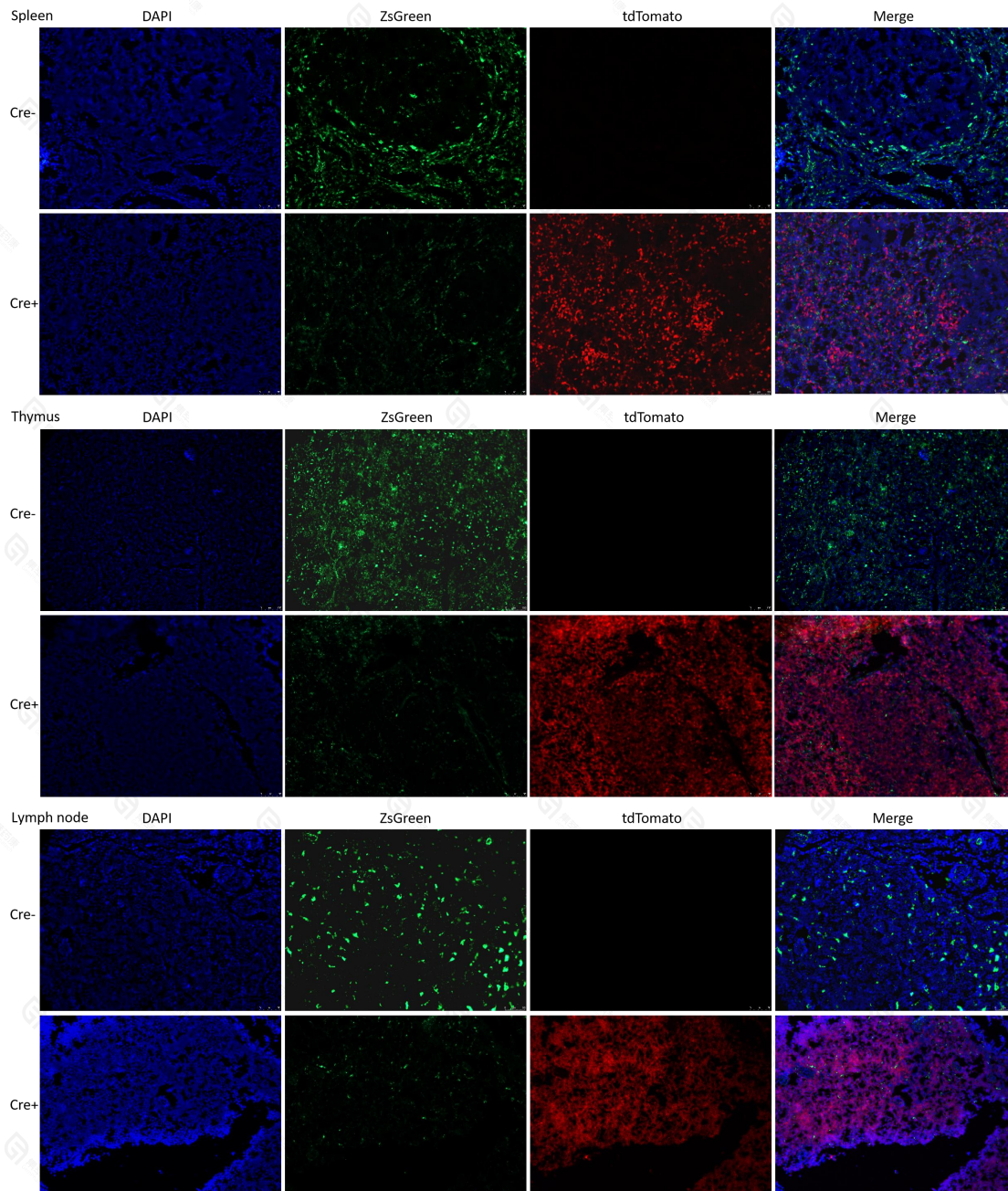
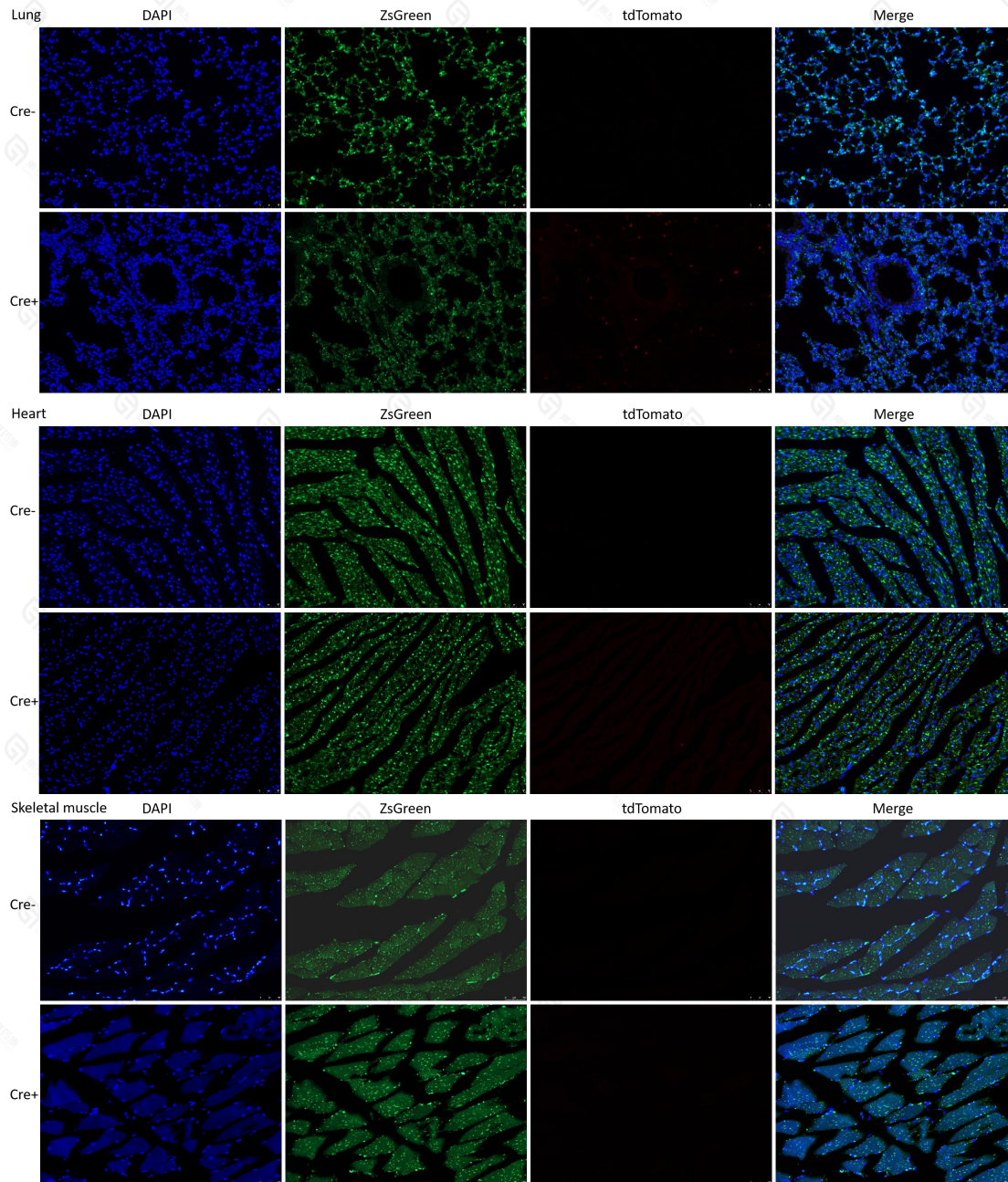


Fig 2. Fluorescence imaging of tissues and organs with obvious Cre activity.

Organ name was indicated in the left top of each subfigure group. Cre-: CAG-G/R single positive individuals; Cre+: Tg(Cd8a-iCre), CAG-G/R double positive individuals.

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



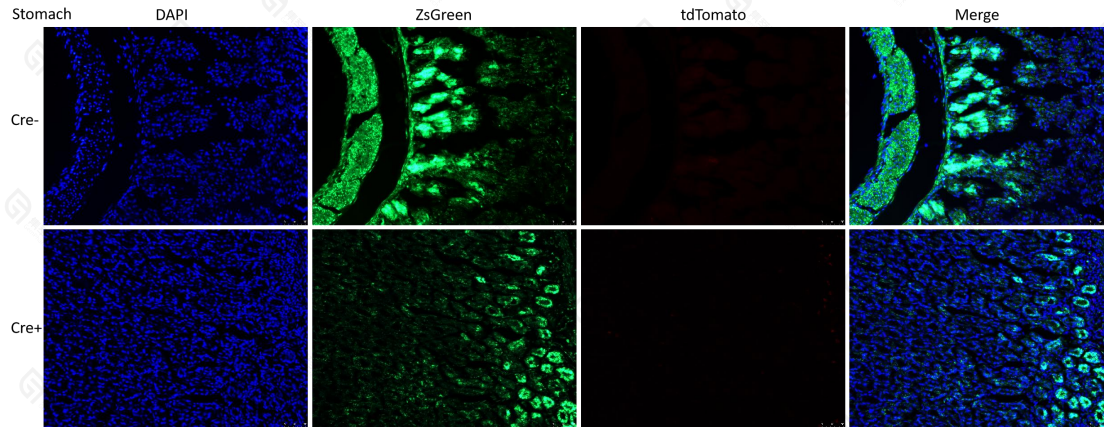
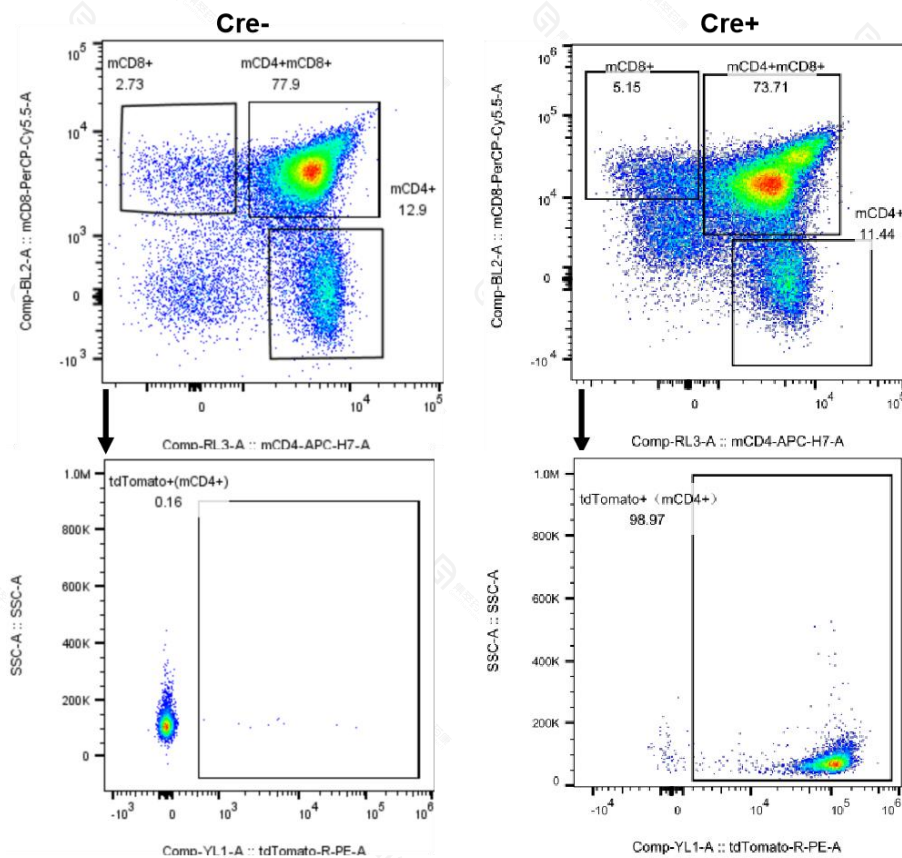


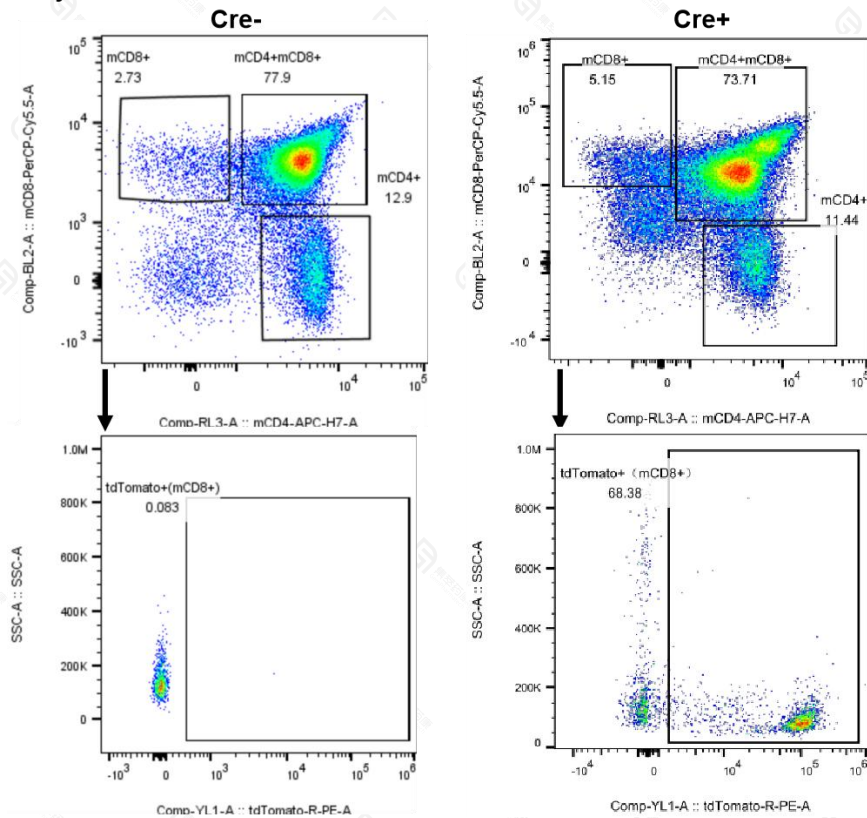
Fig 3. Fluorescence imaging of tissues and organs with little or no Cre activity.
Organ name was indicated in the left top of each subfigure group. Cre-: CAG-G/R single positive individuals; Cre+: Tg(Cd8a-iCre), CAG-G/R double positive individuals.

4. Flow cytometry analysis of cells with Cre activity

Thymus: mCD4⁺ T cells



Thymus: mCD8+ T cells



Thymus: mCD4+mCD8+ thymocytes

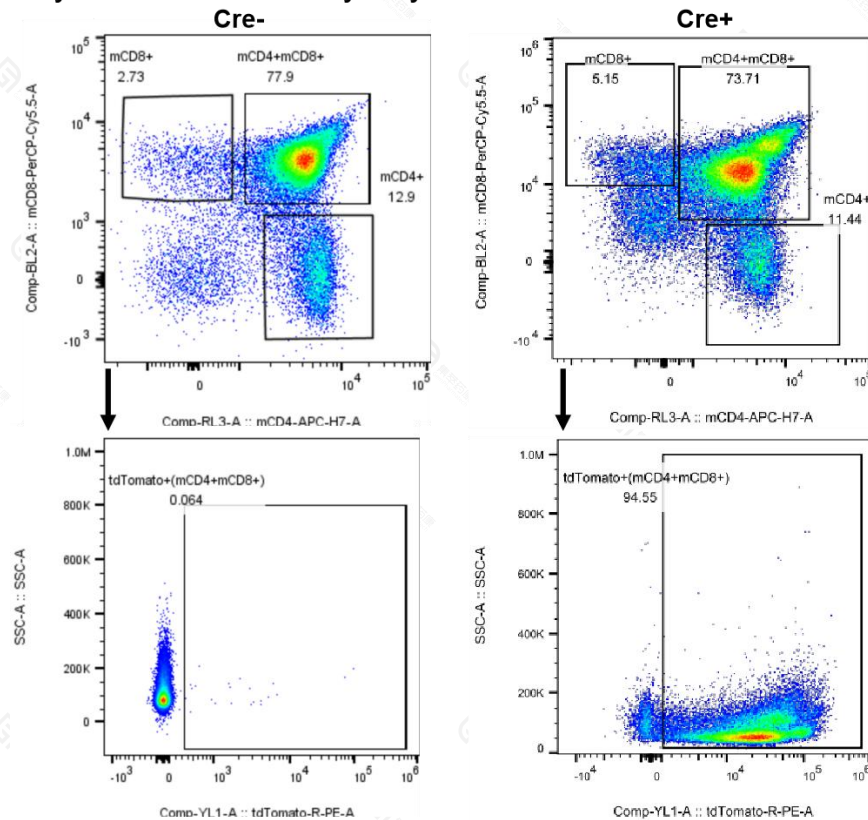


Fig 4. Flow cytometry analysis of cells with Cre activity

Organ name was indicated in the left top of each subfigure group. Cre-: CAG-G/R single positive individuals; Cre+: Tg(Cd8a-iCre), CAG-G/R double positive individuals. Bone marrow-derived cells, splenocytes and whole blood cells were harvested and analyzed for tdTomato expression with flow cytometry.

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. Maekawa Y, Minato Y, Ishifune C, et al. Notch2 integrates signaling by the transcription factors RBP-J and CREB1 to promote T cell cytotoxicity. *Nat Immunol*, 2008, 9(10): 1140-7.