

## C57BL/6JGpt-H11-Pax8-CreERT2

**Strain Name:** C57BL/6JGpt-*H11<sup>em1Cin(Pax8-CreERT2)</sup>*/Gpt

**Strain Type:** Knock-in

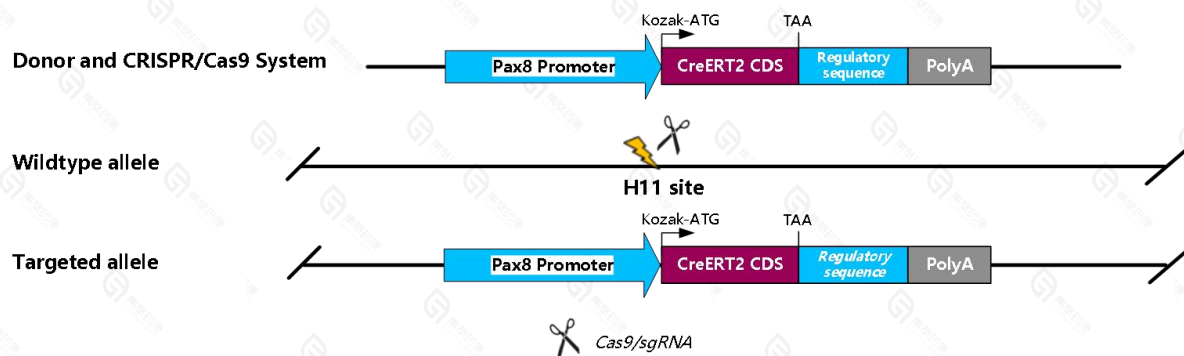
**Strain Number:** T004859

**Background:** C57BL/6JGpt

### Description

This mouse strain expresses CreERT2 inducible recombinase <sup>[1]</sup> under the control of the mouse *Pax8* promoter, the construct was precisely inserted into the H11 safe harbor site in mouse Chr11 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 renal tubular cells after tamoxifen administration. Note: recombinase activity was not detected in thyroid after tamoxifen treatment in adulthood, tamoxifen treatment during pregnancy may result in Cre activity in thyroid follicular cells. Mild ovum activity was detected by PCR detection of loxP recombination.

### Strategy



**Fig.1 Schematic diagram of C57BL/6JGpt-H11-Pax8-CreERT2 model strategy.**

### Applications

1. Cre tool mice for specific, tamoxifen dependent induction of loxP recombination in renal tubular cells <sup>[2]</sup>.

## Data support

### 1. Validation methods & notes

H11-Pax8-CreERT2 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. For tamoxifen administration, 0.25 mL of 5 mg/mL tamoxifen was treated through intraperitoneal injection daily from P44 to P50 (6.2 w~7.1 w). Note: these results may only represent the activity of CreERT2 in this strain under this certain tamoxifen treatment condition at the identical stage. Recombinase activity may be different at other stages or under different tamoxifen induction conditions in your application.

### 2. Timeline of tamoxifen treatment and imaging

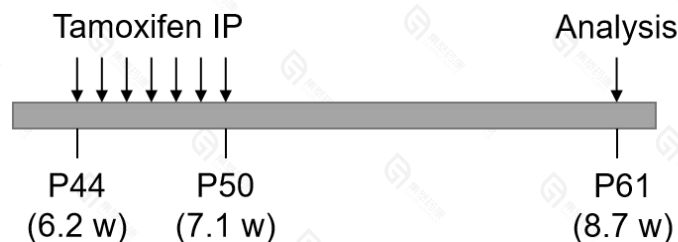


Fig 2. Timeline of tamoxifen treatment and experiment analysis of H11-Pax8-CreERT2 mice.

### 3. Images of tissues and organs with obvious Cre activity

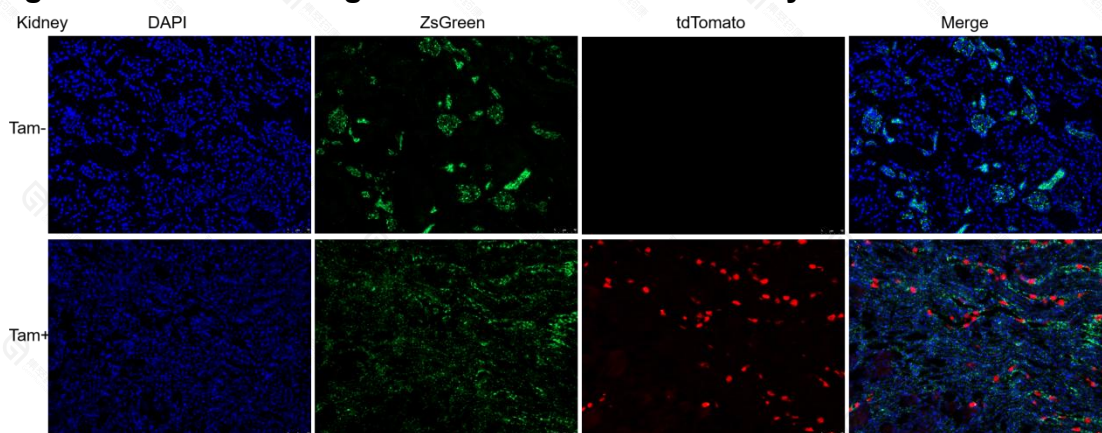


Fig 3. Fluorescence imaging of tissues and organs with obvious Cre activity.

Organ name was indicated in the left top of each subfigure group. Tam-: H11-Pax8-CreERT2, CAG-G/R double positive individuals without tamoxifen administration; Tam+: H11-Pax8-CreERT2, CAG-G/R double positive individuals with tamoxifen administration.

### Reference

1. Feil R, Wagner J, Metzger D, et al. "Regulation of Cre recombinase activity by mutated estrogen receptor ligand-binding domains." *Biochem Biophys Res Commun*, 1997, 237(3): 752-757.
2. Espana-Agusti J, Zou X, Wong K, et al. Generation and Characterisation of a Pax8-CreERT2 Transgenic Line and a Slc22a6-CreERT2 Knock-In Line for Inducible and Specific Genetic Manipulation of Renal Tubular Epithelial Cells. *PLoS One*. 2016, 11(2): e0148055.