B6-Pdx1 Cre

Strain Name： B6/JGpt-*Pdx1*$^{em1Cin(P2A-iCre)}$/Gpt
Strain Type： Knock-in
Strain Number： T007670
Background： C57BL/6JGpt

Description

Pancreatic and duodenal homeobox 1（pdx1）can express in the pancreatic epithelium, antral stomach and duodenum in neonates and in pancreatic beta islet cells in adults [1]. The iCre was inserted into the C-terminal of pdx1 gene by CRISPR/Cas9 technology on C57BL/6 background, and the two genes were linked by the P2A element. When crossed with a strain containing loxP site-flanked sequences, Cre-mediated recombination will result in deletion of the floxed sequences in the cre-expressing tissues of the offspring. B6-Pdx1 Cre mice is an ideal strain for generating pancreas-specific conditional mutations. Note: homozygous of this allele may influence viability of the individuals, and homozygous individuals cannot be obtained via in-cross of heterozygous individuals in practical applications.

Strategy

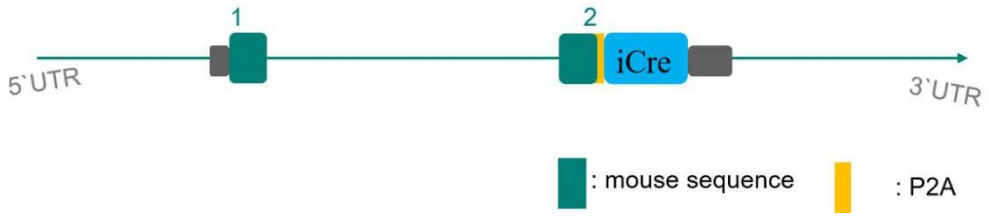

Fig.1 Schematic diagram of B6-Pdx1 Cre strategy.

Applications

1. Cre-lox System
2.pancreatic research Tools

Data support

1. Cre specific expression detection(pancreatic, antral stomach and duodenum)

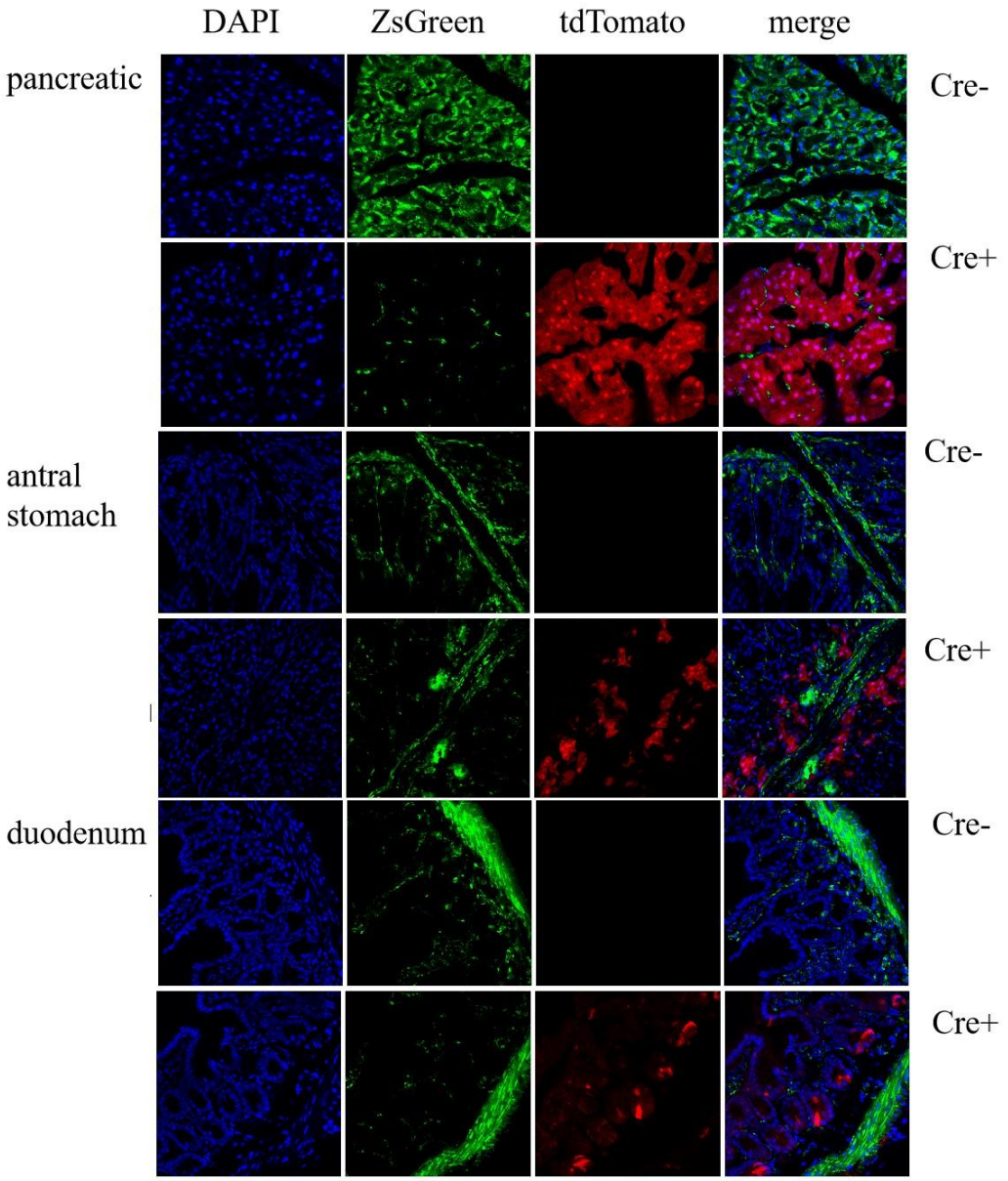

Fig2. Detection of Cre recombinase expression in the pancreatic, antral stomach and duodenu of B6-pdx1 cre mice.

B6-loxP-ZsGreen-loxP-tdTomato（B6-G/R）mice can expresse green fluorescence naturally,when crossed with B6-pdx1 Cre mice, ZsGreen in the mice genome was deleted in the offspring in pancreatic, antral stomach and duodenum , red fluorescence was emitted.Observed frozen sections of tissues, it can be seen that the offspring of B6-pdx1 cre and B6-G/R mice showed strong red fluorescence in pancreas and weak in antral stomach and duodenu.

The results showed that: The pancreas of B6-pdx1 cre mice can express Cre recombinase, which can deletion of the floxed sequences in the cre-expressing

tissues.(Cre-is short for B6-G/R mice; Cre+ is short for B6-pdx1 cre and B6-G/R mating offspring.200x, Scale bar=50μm).

References

1.Hingorani, Sunil R., et al. "Preinvasive and invasive ductal pancreatic cancer and its early detection in the mouse." Cancer cell 4.6 (2003): 437-450.