B6.Cg-Tg(Ins2-cre)25Mgn/J

This strain carries the "RIP-Cre" transgene construct (containing a 668 bp fragment of the rat insulin II promoter, Cre recombinase with a nuclear localization sequence, and a 2.1 kb fragment from the human growth hormone gene). Hemizygous mice carrying this transgene are phenotypically normal and overexpresss *cre* specifically in pancreatic beta cells. This transgene strain is used in combination with mice carrying floxed targeted mutations to create various pancreatic beta cell-specific gene knockouts using the "Cre-lox" system. Results from several different laboratories have shown that this transgenic strain is at least 85% efficient in achieving pancreatic beta cell-specific recombination. It should also be noted that the transgene in this line has been found to be expressed at a low level in the hypothalamus. In some cases this has resulted in a phenotype due to deletion of the floxed allele in this region of the brain. It has also been shown that these transgenic mice may spontaneously develop glucose intolerance and impaired insulin secretion developing at 6-8 weeks of age. It is recommended that users include naive "RIP-Cre" mice (i.e., those not bred to a floxed mutant) among the controls used in experiments.

Keywords: transgenic | Rip-Cre | mouse | insulin | Ins2 | cre

Expand

Mouse Information

Common Name	Rip2-Cre
Research Applications	Cre-lox system
MMRRC ID	*Not provided*
Jackson Laboratories Stock No	003573
VCMR ID	JU, LD
Additional Strain Information	*Not provided*

Genetic Alteration

Mutation #1: BAC or Transgene Insertion

Type of Vector	Plasmid
Promoter	Name: Insulin 2 Symbol: Ins2
Expressed Gene	Name: Cre recombinase Symbol: Cre NCBI Gene ID: 2176227
Description of Transgene	The transgene construct contains a 668 bp rat insulin II promoter, nuclear localization sequence-modified Cre recombinase and a 2.1 kb fragment from the human growth hormone gene.
Vector Genbank File	pripcregh.gb

Allele Map	*Not Provided*
PCR Genotyping Protocol	*Not provided*
Citations	**Publication** Dual roles for glucokinase in glucose homeostasis as determined by liver and pancreatic beta cell-specific gene knock-outs using Cre recombinase. (1999) *J Biol Chem* **274**: 305-15 (Added 1/31/2014) PMID: 9867845

Background Strain Information

Strain Type	Congenic Strain
Chimera/Founder Genetic Background	B6D2 F1
Current Genetic Background	C57BL/6J
Number of Generations Backcrossed	17
Strain Description	Founder chimeras were bred with C57BL/6J for more than 17 generations to create a congenic line.

Attachment

RIPCre_PCR_Protocol.doc - Added on February 22, 2011 at 8:07 AM by Mark Magnuson

This is a Rip-Cre specific genotyping protocol.