B6.129S6-Gcg$^{tm1(cre/ERT2)Cshi}$/Vu

VANDERBILT UNIVERSITY labnodes

The Dre-dependent glucagon-CreER^{T2} knock-in/knock-out strain was designed to express CreER^{T2} only in pancreatic alpha-cells among cells expressing glucagon gene, i.e. pancreatic alpha-cells, Gcg neurons, and intestinal L cells, using a Cre/Dre dual recombination system. Gcg-RSR-CreER^{T2} mice have the same modification of glucagon (Gcg) gene as Gcg-CreER^{T2} mice (Pubmed ID: 28884202) except for a rox-flanked STOP cassette (RSR) inserted upstream of CreER^{T2}. Expression of CreER^{T2} driven by the endogenous Gcg gene promoter occurs only after the removal of RSR by Dre recombinase. When bred to Pdx1-Dre mice (PMID: 31160417), the resulting offspring with both Gcg_RSR-CreER^{T2} and Pdx1-Dre genes will have CreER^{T2} expression in pancreatic alpha-cells, but not in Gcg neurons.

Keywords: CreER^{T2} | Dre recombinase | glucagon

Expand

Request this Mouse Line

Mouse Information

Common Name	Gcg-RSR-CreER^{T2}
VCMR ID	ZZ
Date Cryopreserved	2019-08-13
Method of Cryopreservation	Sperm
Trial IVF % Fertilization	31.00%

Genetic Alterations

Mutation #1: Targeted Mutagenesis

Allele	Name: gene trap ROSA 26, Philippe Soriano; targeted mutation 14, Hongkui Zeng Symbol: Gt(ROSA)26Sor$^{tm14(CAG-tdTomato)Hze}$ MGI: 3809524
Zygosity at cryopreservation	Heterozygous
PCR Genotyping Protocol	*Not provided*
Citations	**Publication** A robust and high-throughput Cre reporting and characterization system for the whole mouse brain. (2010) *Nat Neurosci* **13**: 133-40 (Added 8/13/2019) PMID: 20023653

Mutation #2: Targeted Mutagenesis

Allele	Name: targeted mutation 1 Symbol: $Gcg^{RSR\text{-}CreERT2}$
Zygosity at cryopreservation	Heterozygous
PCR Genotyping Protocol	GcgRSRCreERT2_Genotyping_protocol.docx
Citations	**Publication** Gcg knockin mice as a tool for genetic manipulation in pancreatic alpha cells. (2017) *Diabetologia* **60**: 2399-2408 (Added 8/13/2019) PMID: 28884202

Background Strain Information

Strain Type	Congenic Strain
Chimera/Founder Genetic Background	129S6.SvEvTac x C57Bl/6NCr F1 derived G4 ES cells
Cryopreservation Strain Background (VCMR)	C57BL/6J
Viability and Fertility Data	While heterozygous mice have no phenotype, homozygous mice are deficient for Gcg gene-derived peptides and are not fertile. Backcrossed 5 generations onto C57Bl6/J at cryopreservation.

Additional Information

Sperm was pooled from a GcgRSR-CreERT2/w male and a GcgRSR-CreERT2/w; Rosa26tdTomoato/w male.

Attachments

GcgRSRCreERT2_allele_map.docx - Added on August 13, 2019 at 9:57 AM by Jennifer Skelton

Shiota_Neogen_Analysis_GcgRSRCreERT2.pdf - Added on December 20, 2019 at 2:50 PM by Jennifer Skelton