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$Sur1^{neo}$ - Mouse Strain RES198

Mouse Information

Common Name:	$Sur1^{neo}$
MGI Official Name:	B6.129X1-$Abcc8^{tm1.1Mgn}$
Description:	These mice contain a global knock-out of the sulfonylurea receptor (Sur1), which is part of the ATP-dependent potassium channel. In humans, mutations in Sur1 cause persistent hyperinsulinemic hypoglycemia of infancy (PHHI).
Categories:	None specified.

Genetic Alterations

1) Targeted Mutagenesis

Type of Allele	Global Null
Targeted Gene	ATP-binding cassette, sub-family C (CFTR/MRP), member 8 (Abcc8 - NCBI GeneID:20927)
Targeted Allele	targeted mutation 1.1Mgn ($Sur1^{neotm1.1Mgn}$ - MGI:2388392)
Description of Targeting Vector	A gene targeting strategy that involved the use of Cre/loxP was used generate mice that globally lack the proximal promoter and exon 1 of the sulfonylurea receptor type 1 (Sur1) gene. A pgk-neomycin resistance gene remains in the locus. Genotype: DNA PCR utilizing 5'-CAA TTC CTC AAC TGA GGC TCT TAA-3' and 5'-AGC CTC TGT TCC ACA TAC ACT TCA-3' primers amplify a 414 bp Sur1[neo] allele. DNA PCR using 5'-CAA TTC CTC AAC TGA GGC TCT TAA-3' and 5'-TCG CAG AGT GAC CTC ACA GCC TGT-3' primers amplify a 412 bp for the wild type allele. Homozygous phenotype: Mice that are homozygous null for Sur1 (Abcc8) are viable, fertile and grossly indistinguishable from their wild type littermates except after 16 wks when they become mildly hypoglycemia. Mice lacking Sur1 (Abcc8) lack functional K-ATP channels in pancreatic beta cells but remain euglycemic despite having beta cells that are constantly depolarized due to the lack of this protein. Heterozygous phenotype: These mice are also viable and do not differ from wild type.
Targeting Vector Genbank File	pSUR1.KO1.gb
Citations	

PubMedID	Citation
12149271	Sulfonylurea receptor type 1 knock-out mice have intact feeding-stimulated insulin secretion despite marked impairment in their response to glucose. (2002) *J Biol Chem* **277**: 37176-83 (Added 2005-04-13 12:58:41)

Strain Information

Strain Type:	Congenic Strain
Chimera/Founder Genetic Background:	129X1/SvJ
Current Genetic Background:	C57BL/6J (date recorded: 04/23/2015)
Strain Description:	After achieving germline transmission mice carrying the $Sur1^{neo}$ allele were backcrossed for ten

Access Status

This resource is publicly viewable.

Request this Resource

Request from a repository

Primary contributor: Magnuson Lab

Resource Tags

mouse, mouse strain, Sur1, $Sur1^{neo}$

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Resource History & Actions

Approved on Apr 12, 2007
Last modified on Aug 03, 2010

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No matching resources

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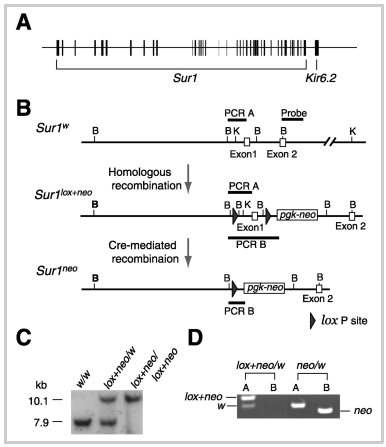
Data courtesy of dkCOIN. Only public resources are displayed.

generations.

Associated Images

Image 1



Description:
This figure shows the gene targeting strategy used. A, Sur1 gene structure. B, Sur1 gene targeting strategy and structure of three different Sur1 gene alleles. The targeting vector contains two loxP sites surrounding the proximal promoter and exon 1. Sur1[W] allele represents the wild type Sur1 gene. The Sur1[lox+neo] allele was created by homologous recombination in ES cells, which were then used to generate mice. The Sur1[neo] allele, which is null, was created by cre-mediated recombination in single cell mouse embryos. B, BamHI; K, KpnI. C, Southern blot analysis using KpnI-digested DNA and the probe shown in B of tail-biopsy DNA from Sur1[w/w], Sur1[lox+neo/w], and Sur1[lox+neo/lox+neo] mice. D, PCR analysis showing conversion of the Sur1[lox+neo] allele to Sur1[neo] allele by cre. In both cases these animals also contain a wild type allele. The corresponding regions of gene with PCR fragments amplified are shown in B.

Reference:
12149271

Repositories

MMRRC

Request via www.mmrrc.org website

Stock #: 011968-UNC
Availability Notes: *Not provided*

Contact Information

Preferred Contact	
Name	Mark Magnuson
Institution	Vanderbilt University
Phone	615-322-7006
Email	mark.magnuson@vanderbilt.edu

Associated Publications

No publications associated

Comments

There are no comments for this entry.

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