

Slc25a51 Cas9-CKO Strategy

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Design Date: 2021-3-8

Project Overview

Project Name

Slc25a51

Project type

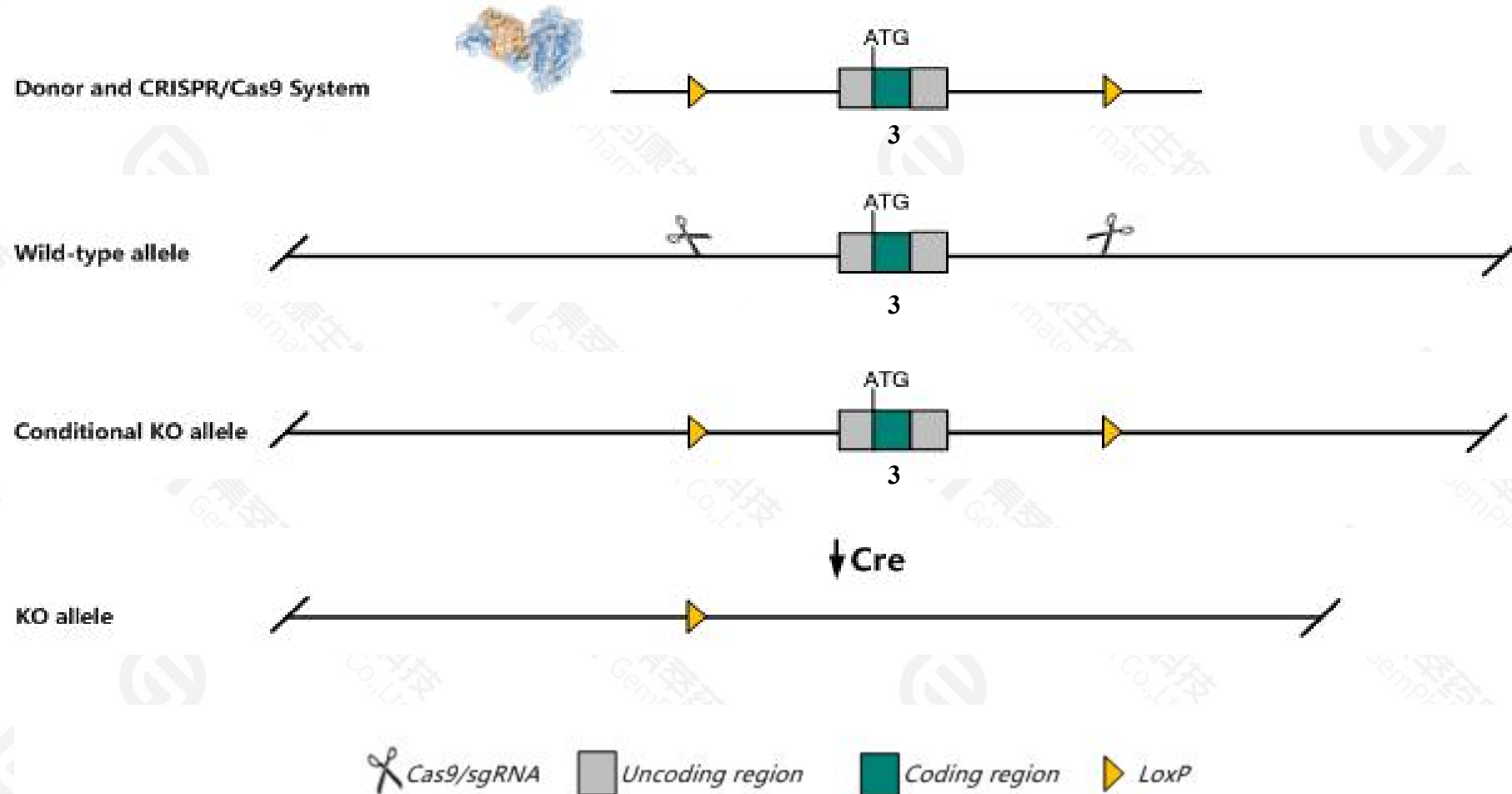
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc25a51* gene. The schematic diagram is as follows:



- The *Slc25a51* gene has 6 transcripts. According to the structure of *Slc25a51* gene, exon3 of *Slc25a51*-202(ENSMUST00000116341.3) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc25a51* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Slc25a51* gene is located on the Chr4. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Slc25a51 solute carrier family 25, member 51 [Mus musculus (house mouse)]

Gene ID: 230125, updated on 13-Mar-2020

Summary



Official Symbol Slc25a51 provided by [MGI](#)

Official Full Name solute carrier family 25, member 51 provided by [MGI](#)

Primary source [MGI:MGI:2684984](#)

See related [Ensembl:ENSMUSG00000045973](#)

Gene type protein coding

RefSeq status VALIDATED

Organism [Mus musculus](#)

Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus

Also known as 9130208E07Rik, D130005A03Rik, Gm138, Mcart1

Expression Ubiquitous expression in liver E14.5 (RPKM 2.2), liver E14 (RPKM 2.2) and 28 other tissues [See more](#)

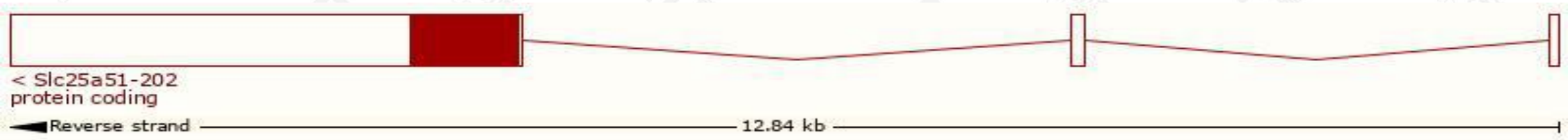
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc25a51-202	ENSMUST00000116341.3	4438	298aa	Protein coding	CCDS18137	Q5HZI9	TSL:1 GENCODE basic APPRIS P1
Slc25a51-203	ENSMUST00000132815.2	1005	298aa	Protein coding	CCDS18137	Q5HZI9	TSL:2 GENCODE basic APPRIS P1
Slc25a51-201	ENSMUST00000107796.7	4433	315aa	Protein coding	-	A2AKW0	TSL:1 GENCODE basic
Slc25a51-206	ENSMUST00000153904.1	777	205aa	Protein coding	-	A2AKV9	CDS 3' incomplete TSL:3
Slc25a51-205	ENSMUST00000151516.1	718	195aa	Protein coding	-	G3UYJ3	CDS 3' incomplete TSL:1
Slc25a51-204	ENSMUST00000134714.1	1022	No protein	Processed transcript	-	-	TSL:1

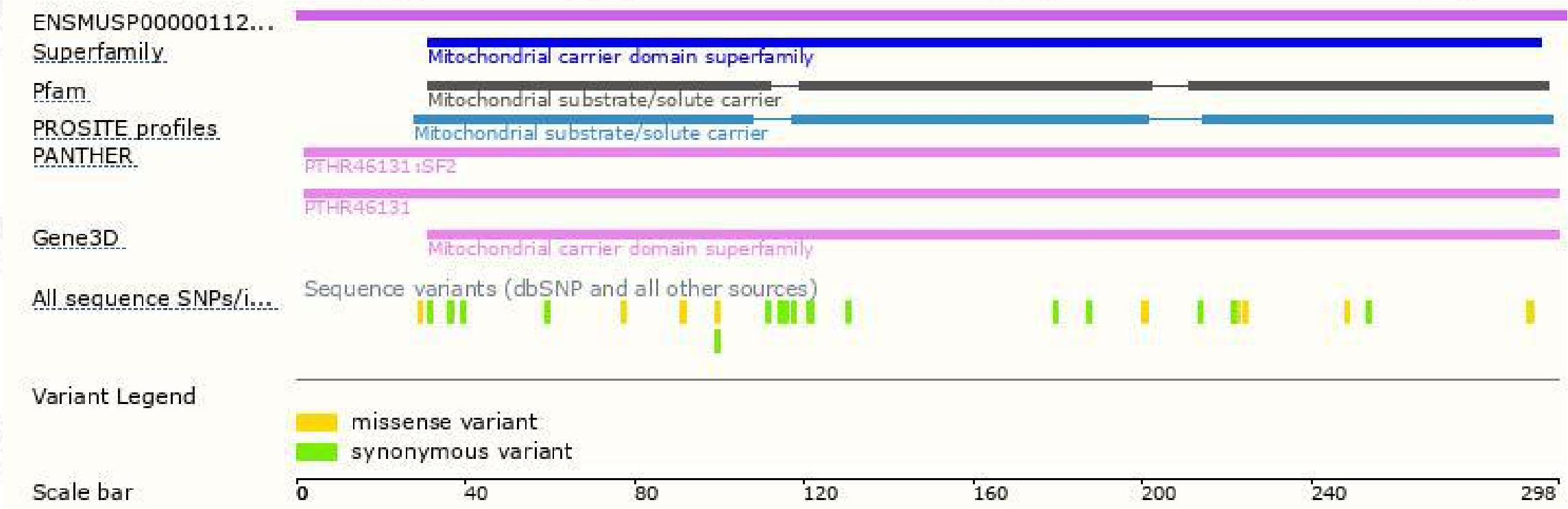
The strategy is based on the design of *Slc25a51-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.

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