

Slc31a2 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Slc31a2

Project type

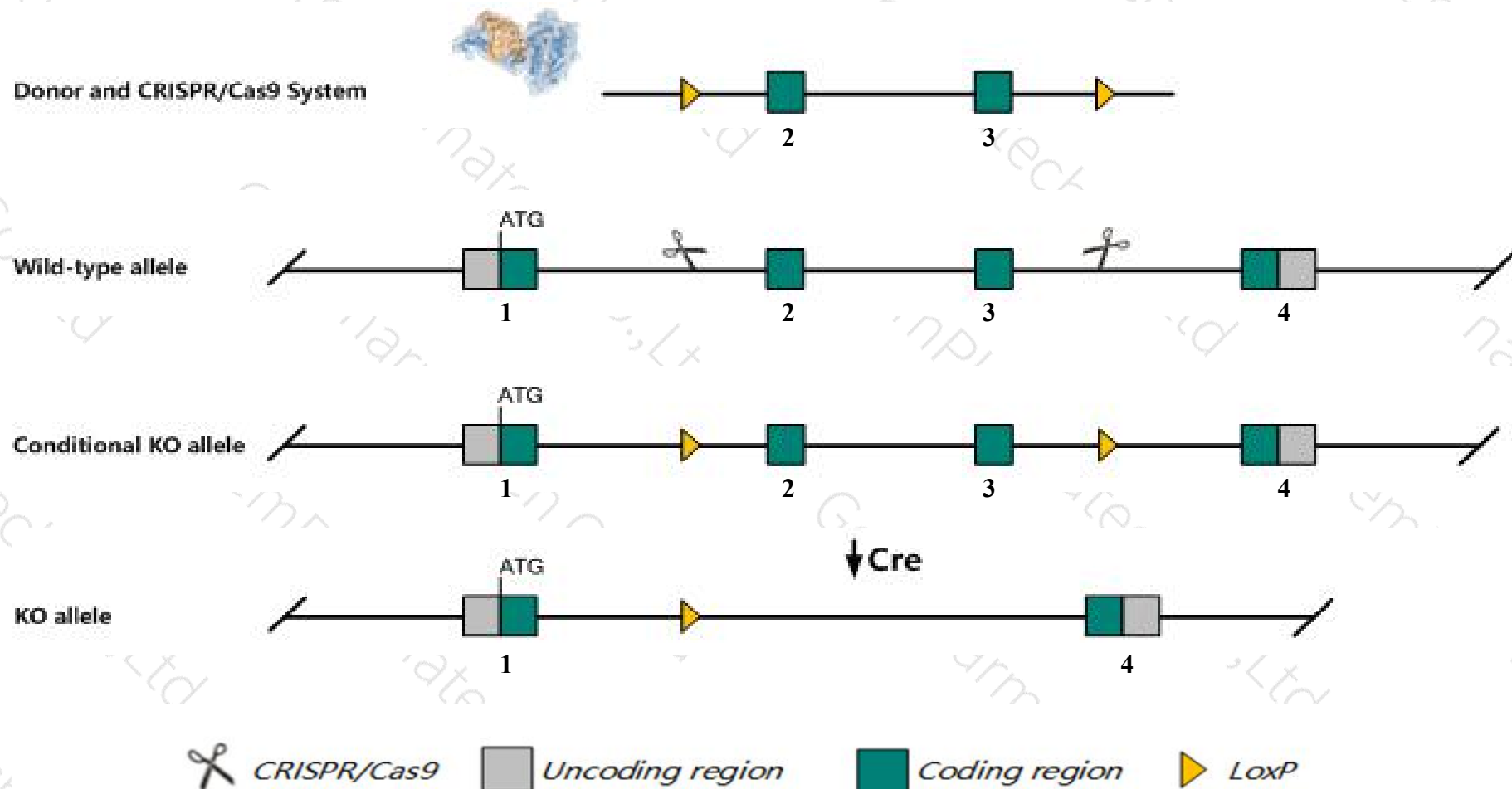
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc31a2* gene. The schematic diagram is as follows:



Technical routes

- The *Slc31a2* gene has 3 transcripts. According to the structure of *Slc31a2* gene, exon2-exon3 of *Slc31a2-201* (ENSMUST00000084530.8) transcript is recommended as the knockout region. The region contains 257bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc31a2* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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.

Notice

- The *Slc31a2* 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)

Slc31a2 solute carrier family 31, member 2 [Mus musculus (house mouse)]

Gene ID: 20530, updated on 31-Jan-2019

Summary



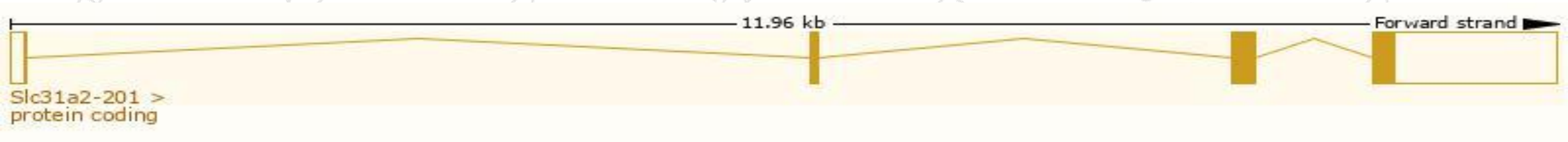
Official Symbol	Slc31a2 provided by MGI
Official Full Name	solute carrier family 31, member 2 provided by MGI
Primary source	MGI:MGI:1333844
See related	Ensembl:ENSMUSG00000066152
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI604396, CTR2
Expression	Ubiquitous expression in genital fat pad adult (RPKM 27.9), adrenal adult (RPKM 15.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

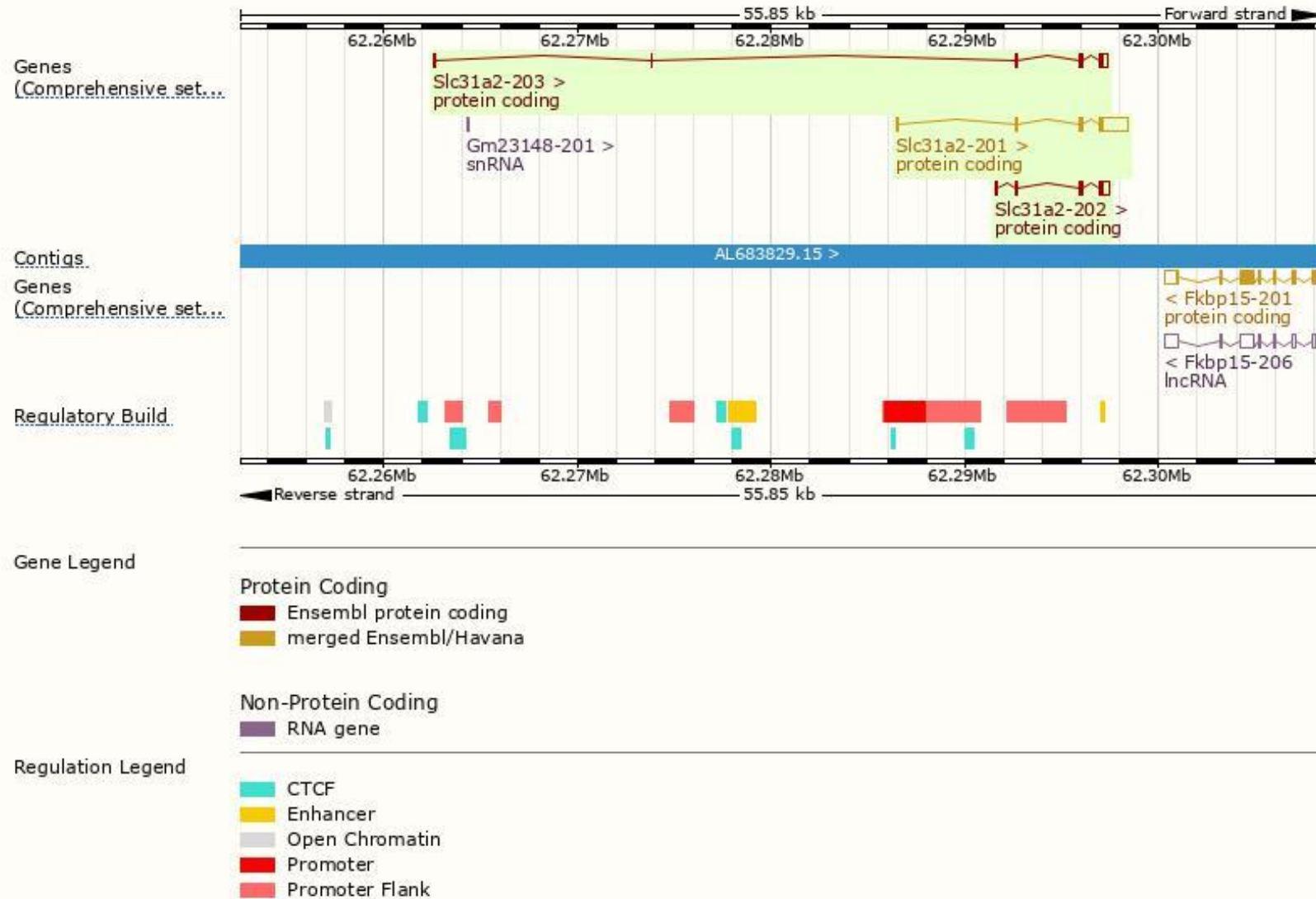
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc31a2-201	ENSMUST00000084530.8	1820	143aa	Protein coding	CCDS18236	Q4KL43 Q9CPU9	TSL:1 GENCODE basic APPRIS P3
Slc31a2-202	ENSMUST00000107467.2	868	141aa	Protein coding	CCDS71401	Q9D524	TSL:1 GENCODE basic APPRIS ALT1
Slc31a2-203	ENSMUST00000107468.7	743	141aa	Protein coding	CCDS71401	Q9D524	TSL:5 GENCODE basic APPRIS ALT1

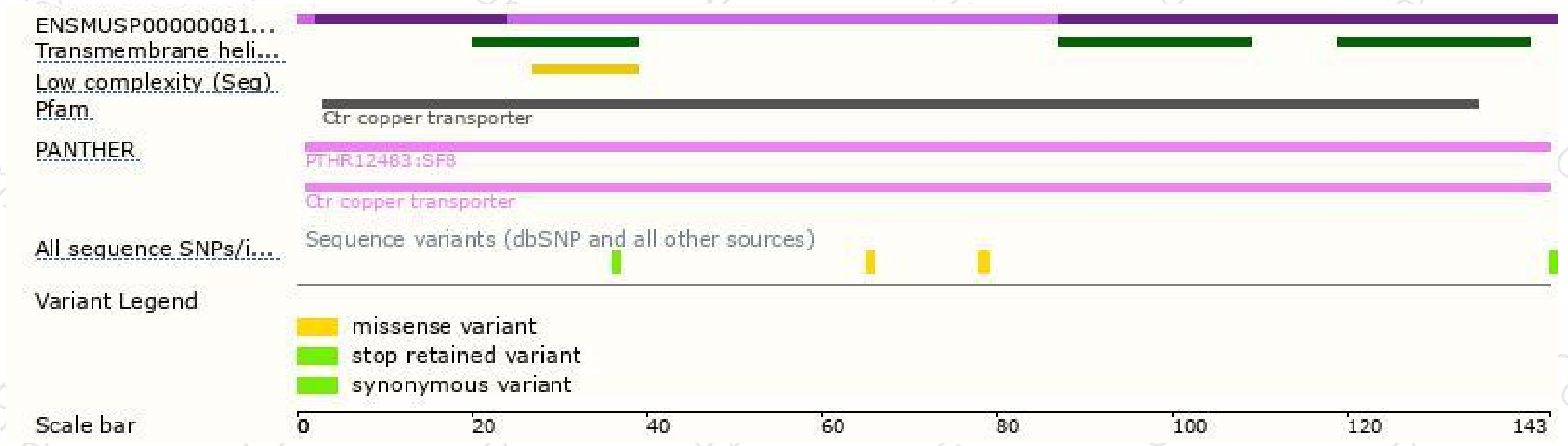
The strategy is based on the design of *Slc31a2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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