

Slc38a7 Cas9-CKO Strategy

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Project Overview

Project Name

Slc38a7

Project type

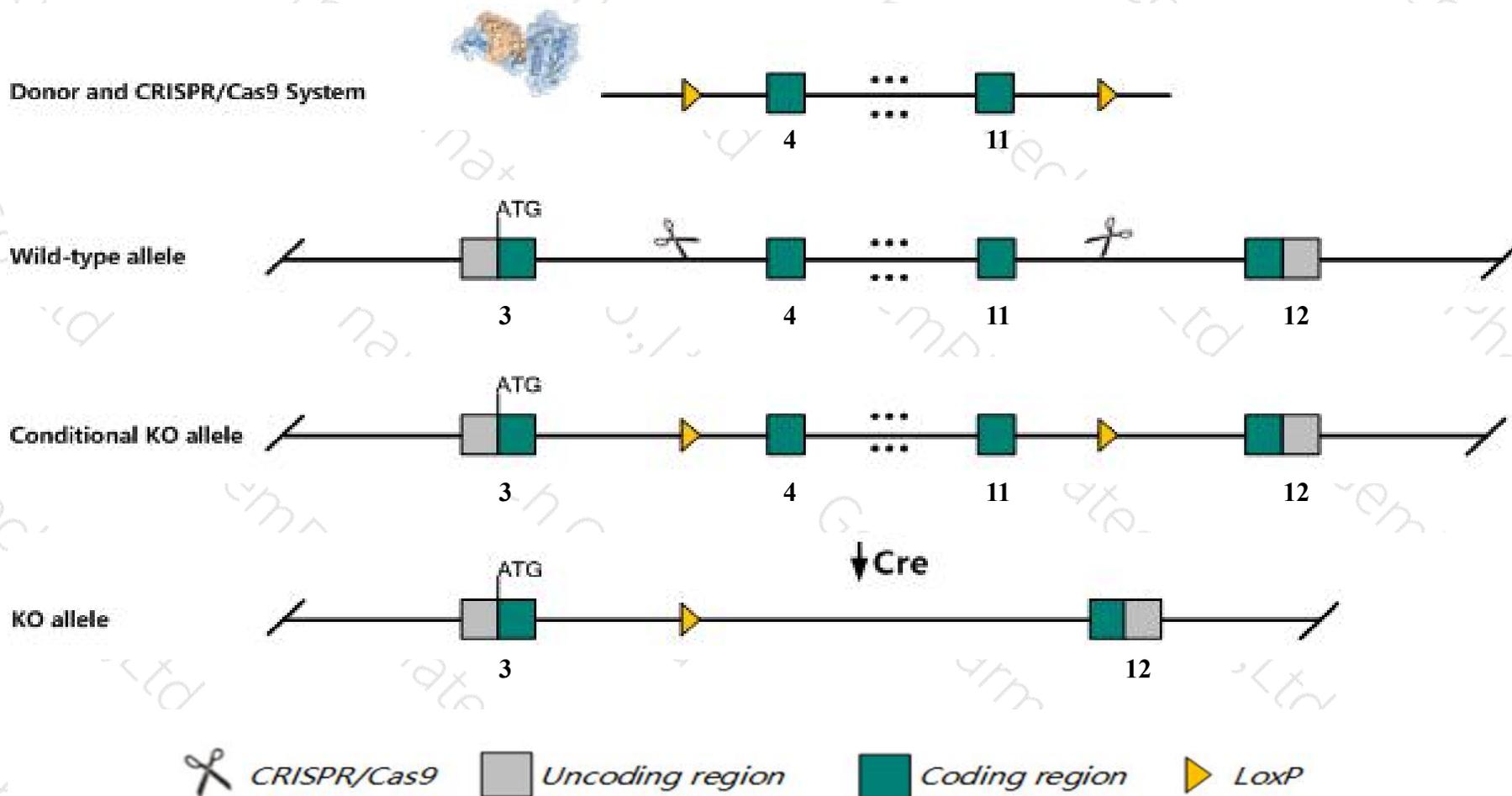
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc38a7* gene. The schematic diagram is as follows:



- The *Slc38a7* gene has 5 transcripts. According to the structure of *Slc38a7* gene, exon4-exon11 of *Slc38a7-201* (ENSMUST00000040481.3) transcript is recommended as the knockout region. The region contains 1019bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc38a7* 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 *Slc38a7* gene is located on the Chr8. 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)

Slc38a7 solute carrier family 38, member 7 [*Mus musculus* (house mouse)]

Gene ID: 234595, updated on 13-Mar-2020

Summary

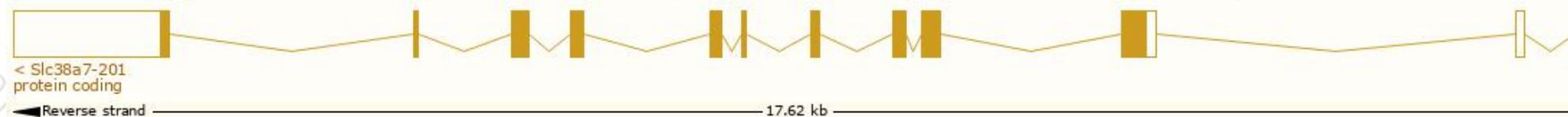
Official Symbol	Slc38a7 provided by MGI
Official Full Name	solute carrier family 38, member 7 provided by MGI
Primary source	MGI:MG1:2679005
See related	Ensembl:ENSMUSG00000036534
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	D430050E18
Expression	Ubiquitous expression in placenta adult (RPKM 17.0), ovary adult (RPKM 10.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

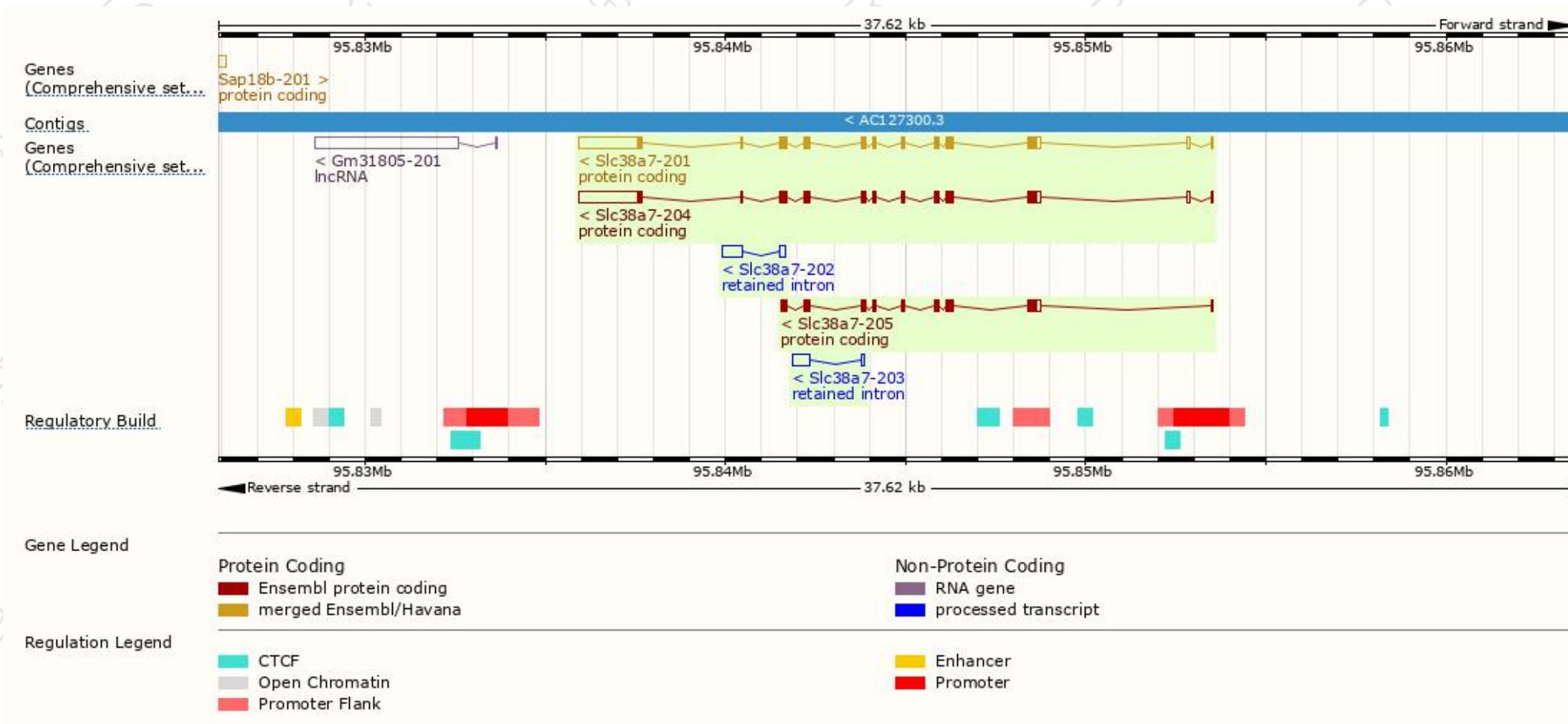
The gene has 5 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc38a7-201	ENSMUST00000040481.3	3333	463aa	Protein coding	CCDS22567	Q8BWH0	TSL:1 Gencode basic APPRIS P1
Slc38a7-204	ENSMUST00000212270.1	3315	463aa	Protein coding	CCDS22567	Q8BWH0	TSL:1 Gencode basic APPRIS P1
Slc38a7-205	ENSMUST00000212628.1	1382	409aa	Protein coding	-	A0A1D5RLX9	CDS 3' incomplete TSL:5
Slc38a7-202	ENSMUST00000142881.1	726	No protein	Retained intron	-	-	TSL:3
Slc38a7-203	ENSMUST00000153835.1	540	No protein	Retained intron	-	-	TSL:3

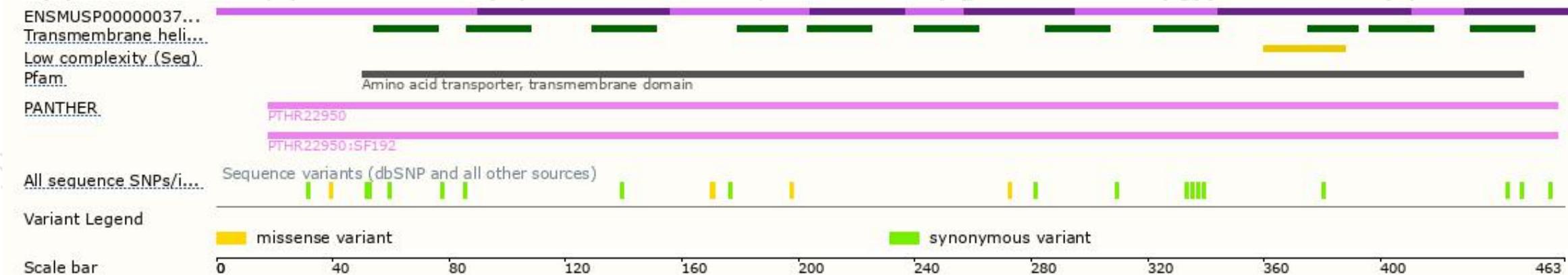
The strategy is based on the design of *Slc38a7-201* transcript, the transcription is shown below



Genomic location distribution



Protein domain



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

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