

Slc38a4 Cas9-CKO Strategy

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Project Overview

Project Name

Slc38a4

Project type

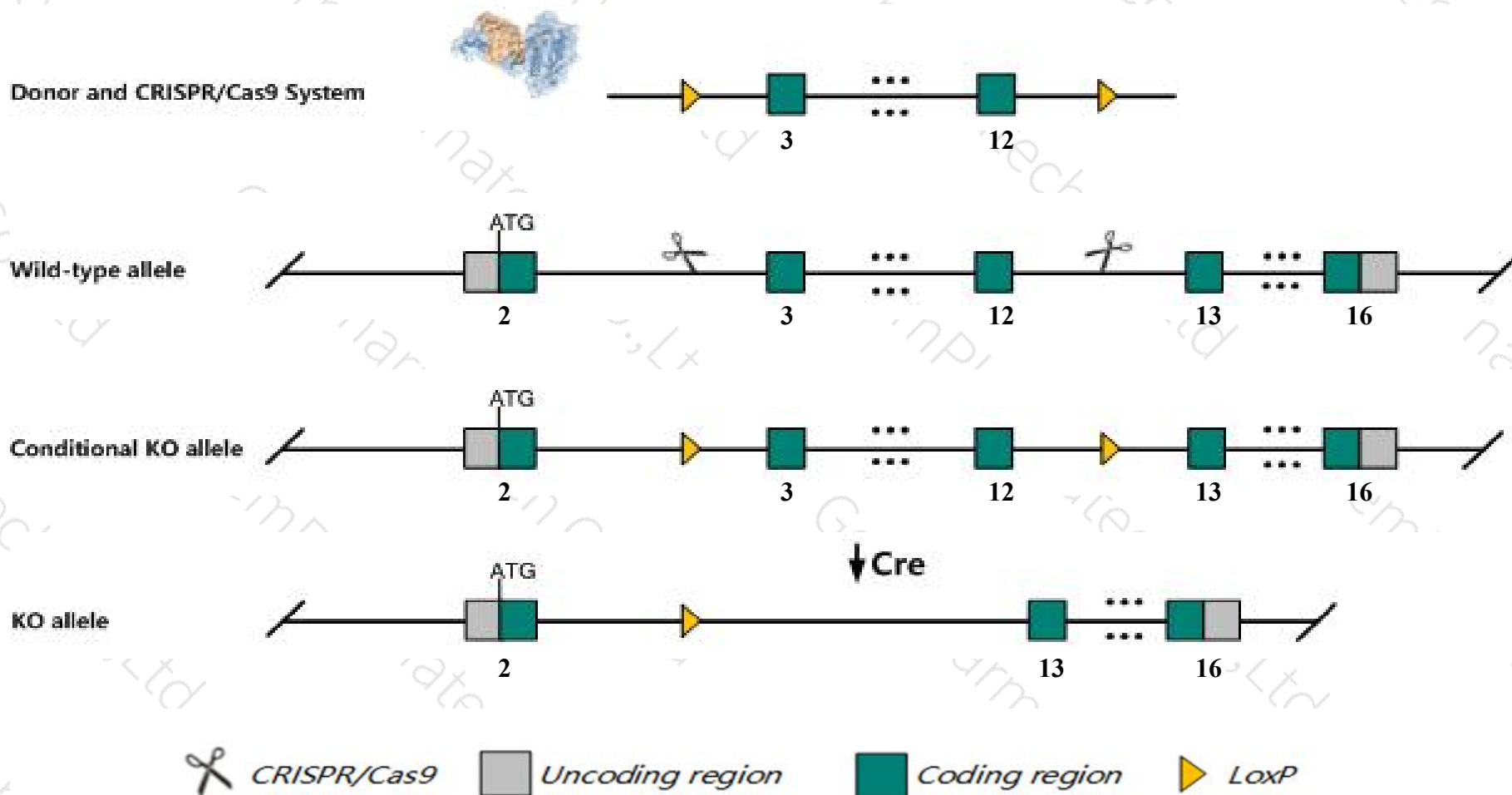
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc38a4* gene. The schematic diagram is as follows:



Technical routes

- The *Slc38a4* gene has 5 transcripts. According to the structure of *Slc38a4* gene, exon3-exon12 of *Slc38a4-201* (ENSMUST00000023101.9) transcript is recommended as the knockout region. The region contains 1055bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc38a4* 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 *Slc38a4* gene is located on the Chr15. 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)

Slc38a4 solute carrier family 38, member 4 [*Mus musculus* (house mouse)]

Gene ID: 69354, updated on 26-Nov-2019

Summary

- Official Symbol** Slc38a4 provided by [MGI](#)
- Official Full Name** solute carrier family 38, member 4 provided by [MGI](#)
- Primary source** [MGI:MGI:1916604](#)
- See related** [Ensembl:ENSMUSG00000022464](#)
- 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** Ata3; mATA3; mNAT3; 1110012E16Rik; 1700012A18Rik
- Expression** Biased expression in liver adult (RPKM 139.1), placenta adult (RPKM 78.5) and 6 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 15; 15 F1

See Slc38a4 in [Genome Data Viewer](#)

Exon count: 20

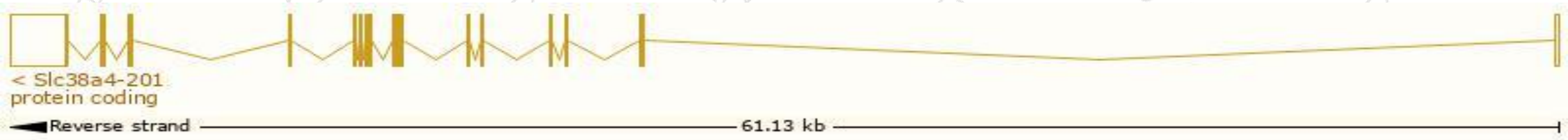
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	15	NC_000081.6 (96994816..97055956, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	15	NC_000081.5 (96825254..96886387, complement)

Transcript information (Ensembl)

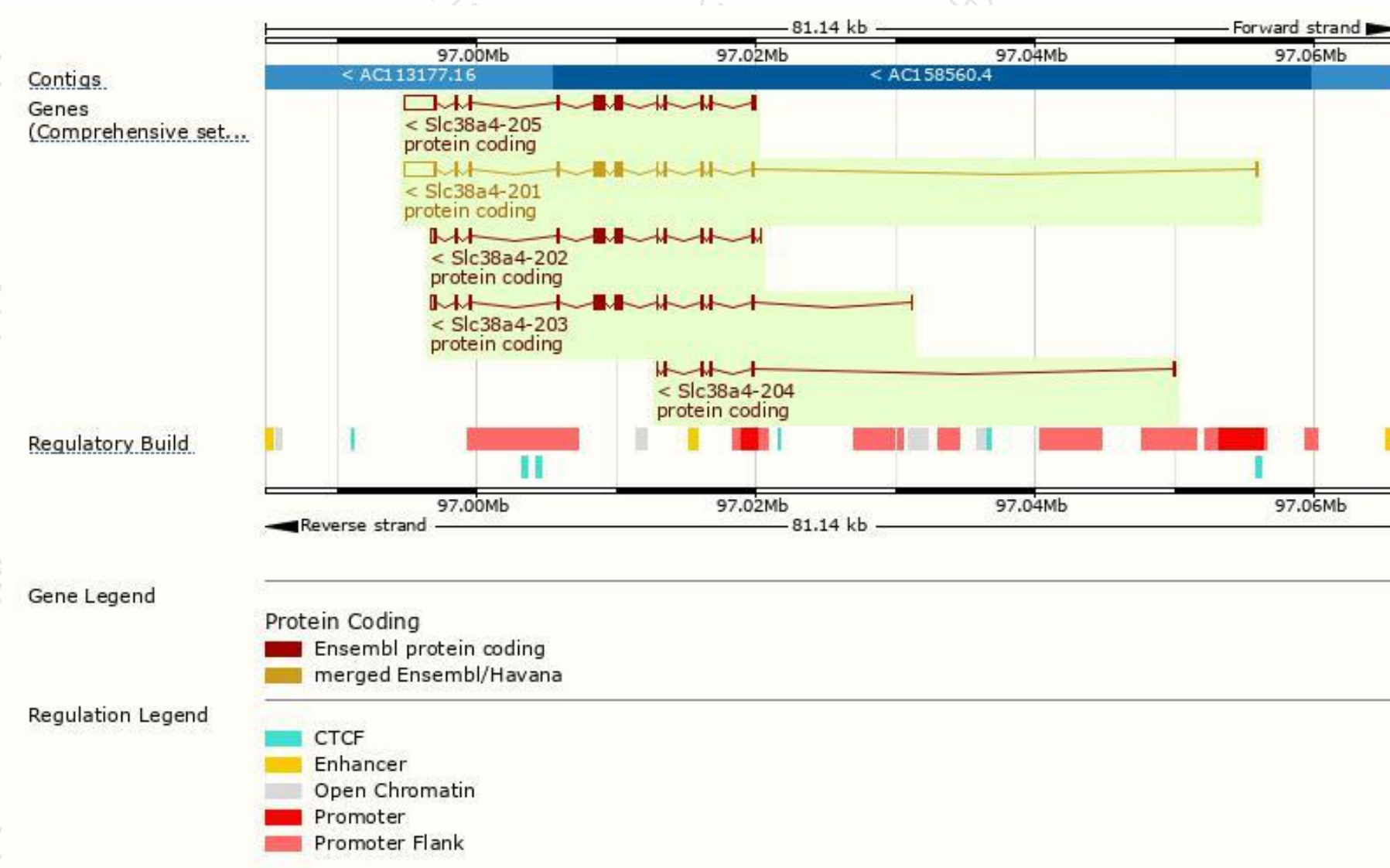
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc38a4-201	ENSMUST00000023101.9	3932	547aa	Protein coding	CCDS27779	Q8R1S9	TSL:1 GENCODE basic APPRIS P1
Slc38a4-205	ENSMUST00000231039.1	3923	547aa	Protein coding	CCDS27779	Q8R1S9	GENCODE basic APPRIS P1
Slc38a4-203	ENSMUST00000230086.1	1963	547aa	Protein coding	CCDS27779	Q8R1S9	GENCODE basic APPRIS P1
Slc38a4-202	ENSMUST00000166223.1	1908	547aa	Protein coding	CCDS27779	Q8R1S9	TSL:1 GENCODE basic APPRIS P1
Slc38a4-204	ENSMUST00000230907.1	637	160aa	Protein coding	-	A0A2R8VHR9	CDS 3' incomplete

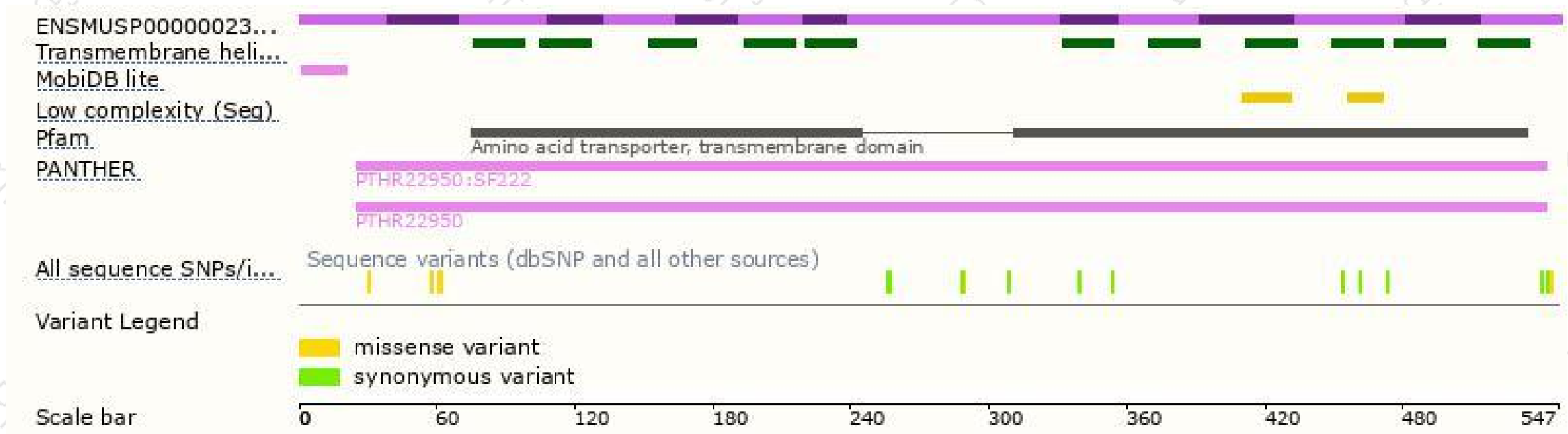
The strategy is based on the design of *Slc38a4-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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