

Slc36a3 Cas9-CKO Strategy

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Project Overview

Project Name

Slc36a3

Project type

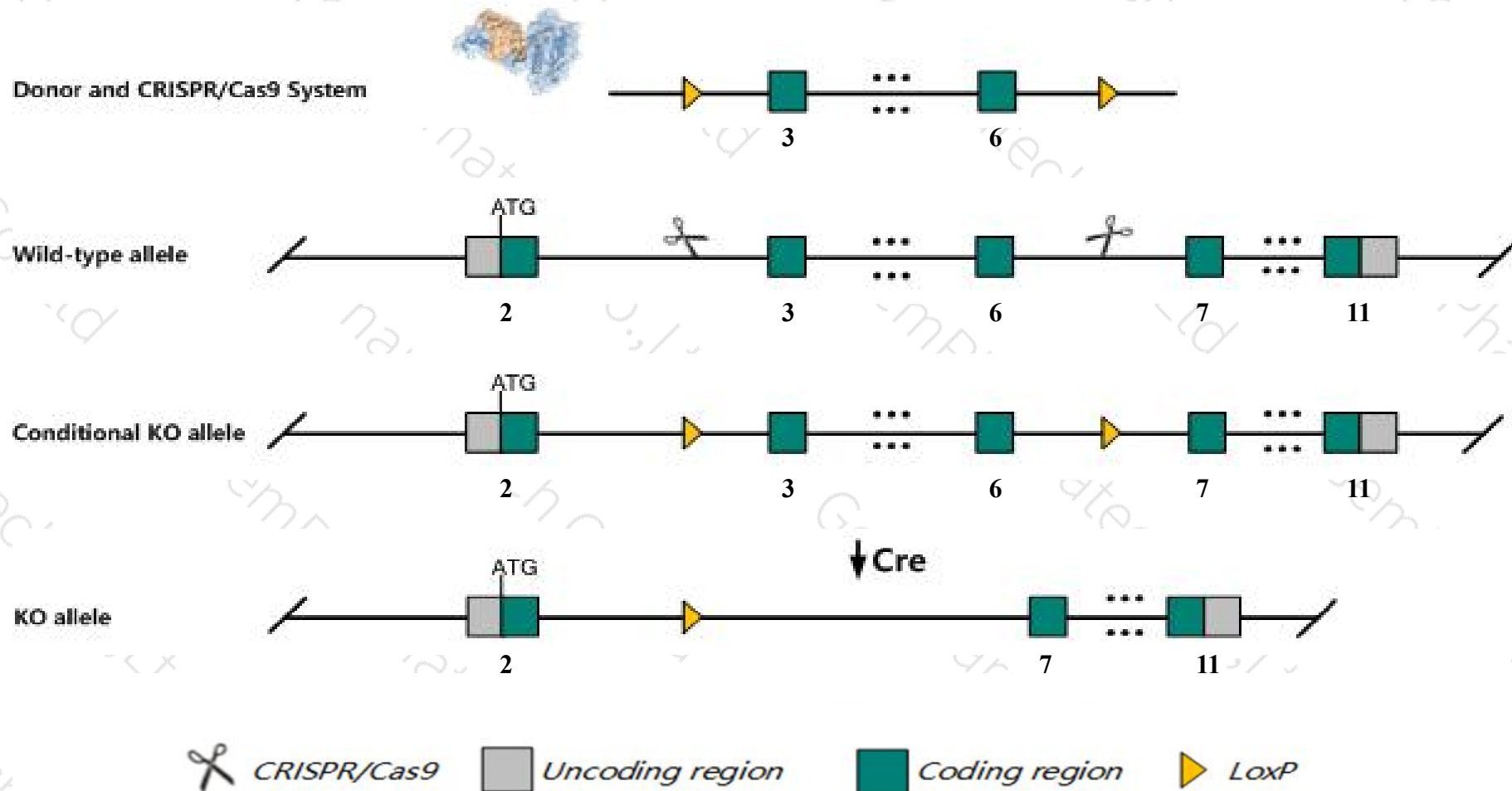
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc36a3* gene. The schematic diagram is as follows:



- The *Slc36a3* gene has 3 transcripts. According to the structure of *Slc36a3* gene, exon3-exon6 of *Slc36a3-201* (ENSMUST00000020502.8) transcript is recommended as the knockout region, which includes exon3 of *Slc36a3-202* transcript. The region contains 361bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc36a3* 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.

- According to the existing MGI data, male mice homozygous for a null allele exhibit normal fecundity.
- The KO region contains functional region of the *Slc36a3os* gene. Knockout the region will affect the function of *Slc36a3os*.
- The *Slc36a3* gene is located on the Chr11. 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)

Slc36a3 solute carrier family 36 (proton/amino acid symporter), member 3 [*Mus musculus* (house mouse)]

Gene ID: 215332, updated on 13-Mar-2020

Summary

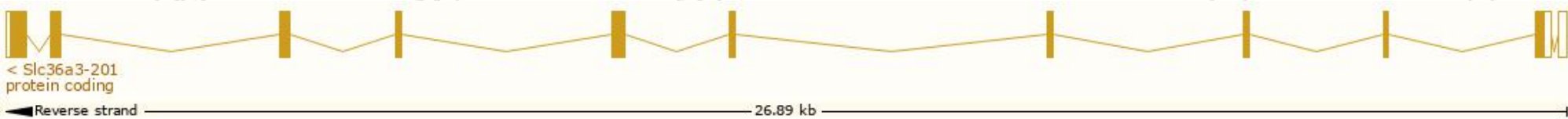
Official Symbol	Slc36a3 provided by MGI
Official Full Name	solute carrier family 36 (proton/amino acid symporter), member 3 provided by MGI
Primary source	MGI:MGI:2665001
See related	Ensembl:ENSMUSG00000049491
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	PAT3; TRAMD2; tramdorin2
Expression	Restricted expression toward testis adult (RPKM 33.3) See more
Orthologs	human all

Transcript information (Ensembl)

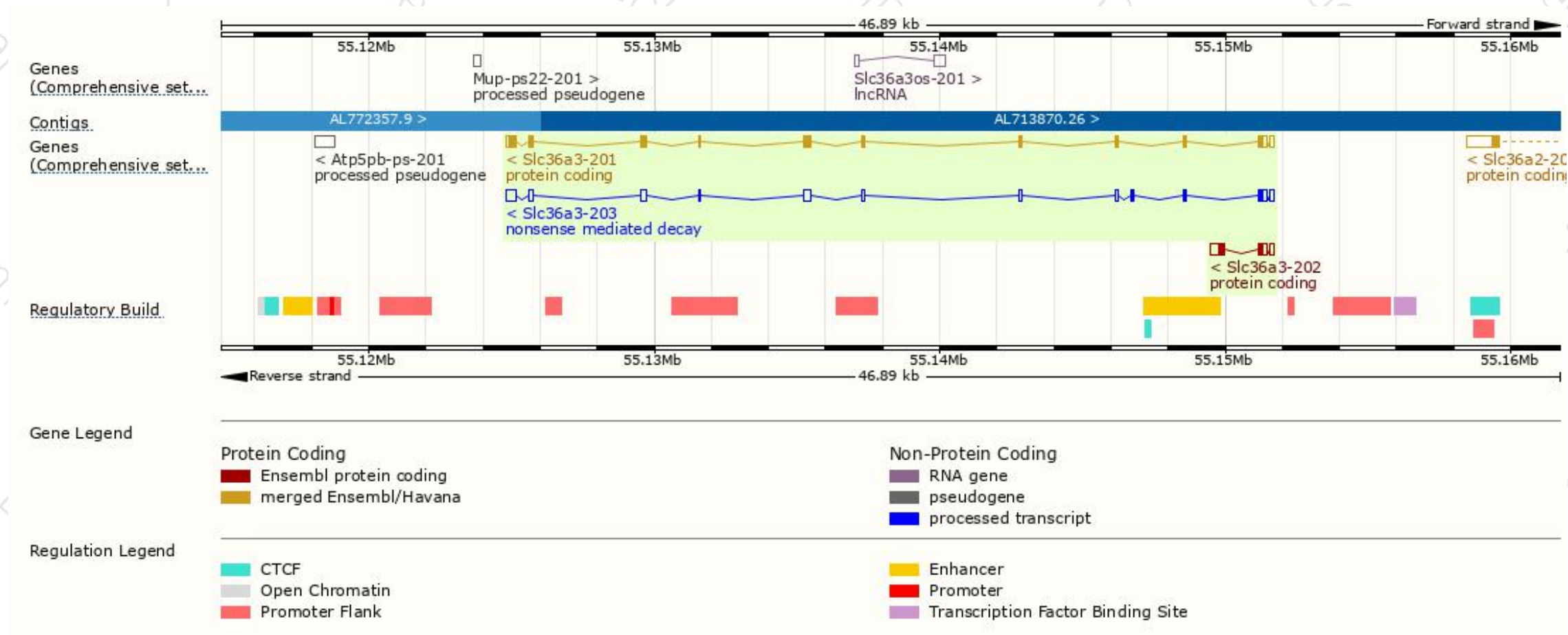
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc36a3-201	ENSMUST00000020502.8	1768	477aa	Protein coding	CCDS24708	Q811P0	TSL:1 APPRIS P1
Slc36a3-202	ENSMUST00000069816.5	893	102aa	Protein coding	-	Q810P4	TSL:1 GENCODE basic
Slc36a3-203	ENSMUST00000128244.7	1841	92aa	Nonsense mediated decay	-	D6RI58	TSL:1

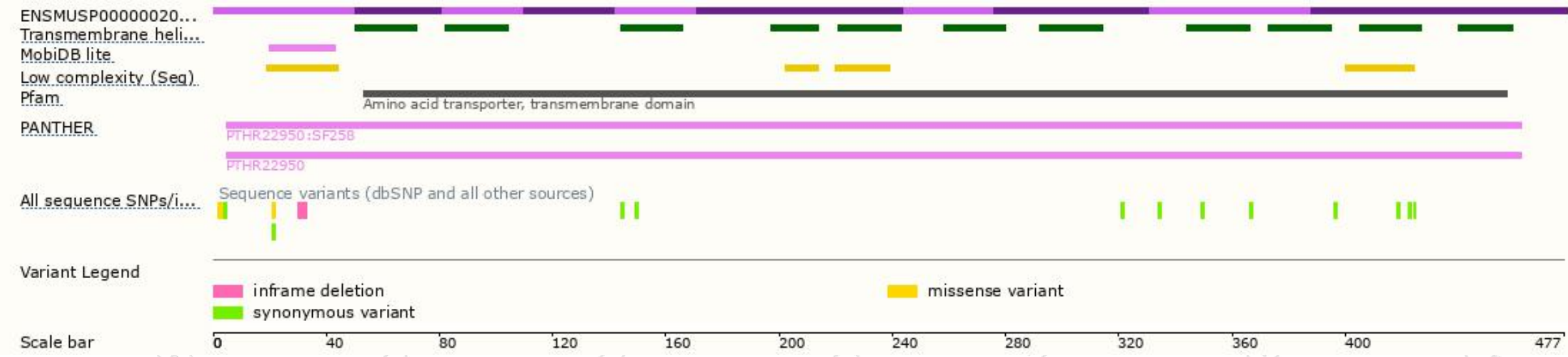
The strategy is based on the design of *Slc36a3-201* transcript, the transcription is shown below



Genomic location distribution



Protein domain



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

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