

Slc7a6 Cas9-CKO Strategy

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Project Overview

Project Name

Slc7a6

Project type

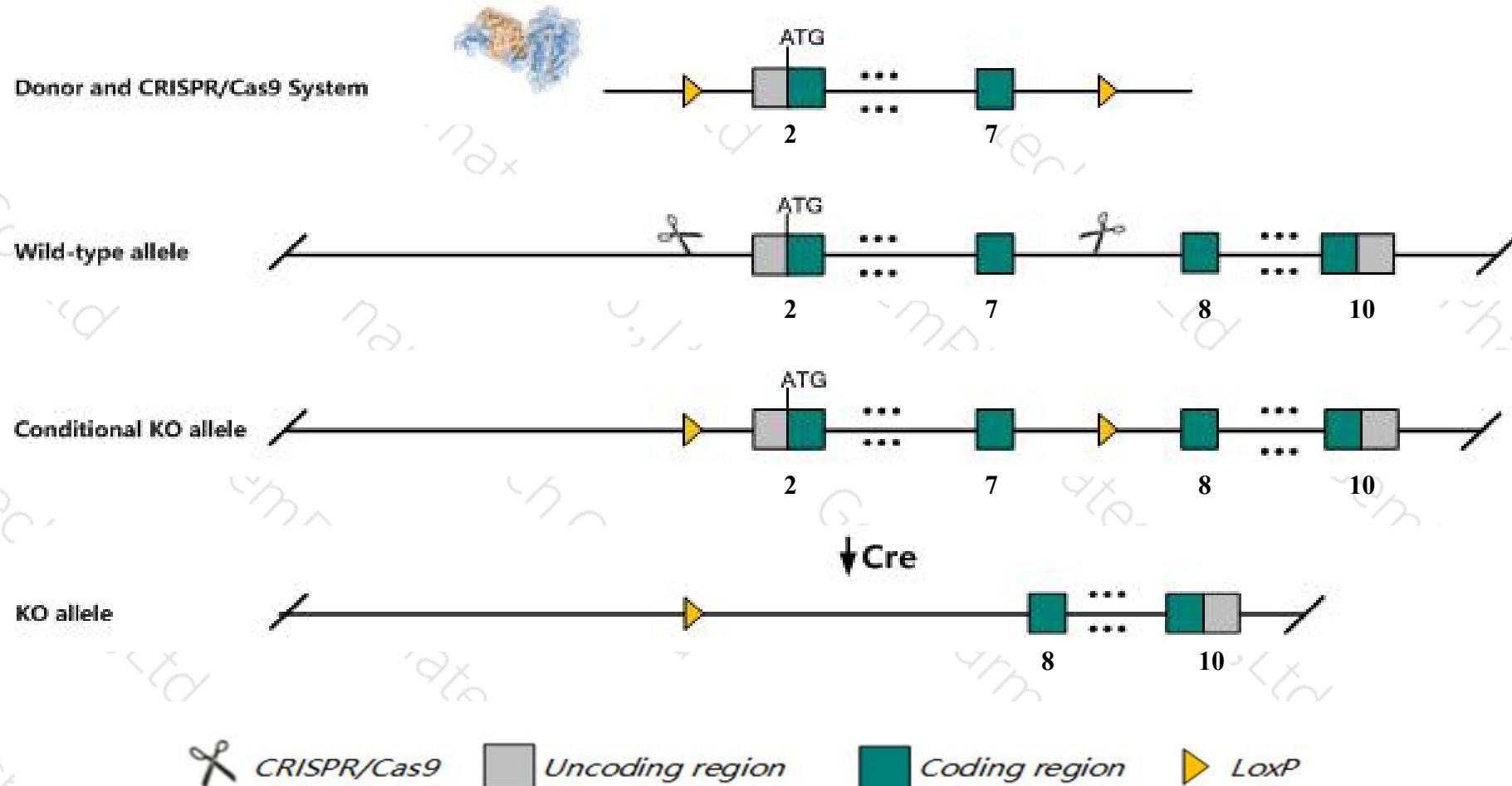
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc7a6* gene. The schematic diagram is as follows:



- The *Slc7a6* gene has 7 transcripts. According to the structure of *Slc7a6* gene, exon2-exon7 of *Slc7a6-201* (ENSMUST00000034378.4) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc7a6* 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 *Slc7a6* 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)

Slc7a6 solute carrier family 7 (cationic amino acid transporter, y+ system), member 6 [Mus musculus (house mouse)]

Gene ID: 330836, updated on 13-Mar-2020

Summary



Official Symbol	Slc7a6 provided by MGI
Official Full Name	solute carrier family 7 (cationic amino acid transporter, y+ system), member 6 provided by MGI
Primary source	MGI:MGI:2142598
See related	Ensembl:ENSMUSG00000031904
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	Al643885, LAT-2, LAT3, y+LAT-2
Expression	Ubiquitous expression in testis adult (RPKM 13.4), whole brain E14.5 (RPKM 13.3) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

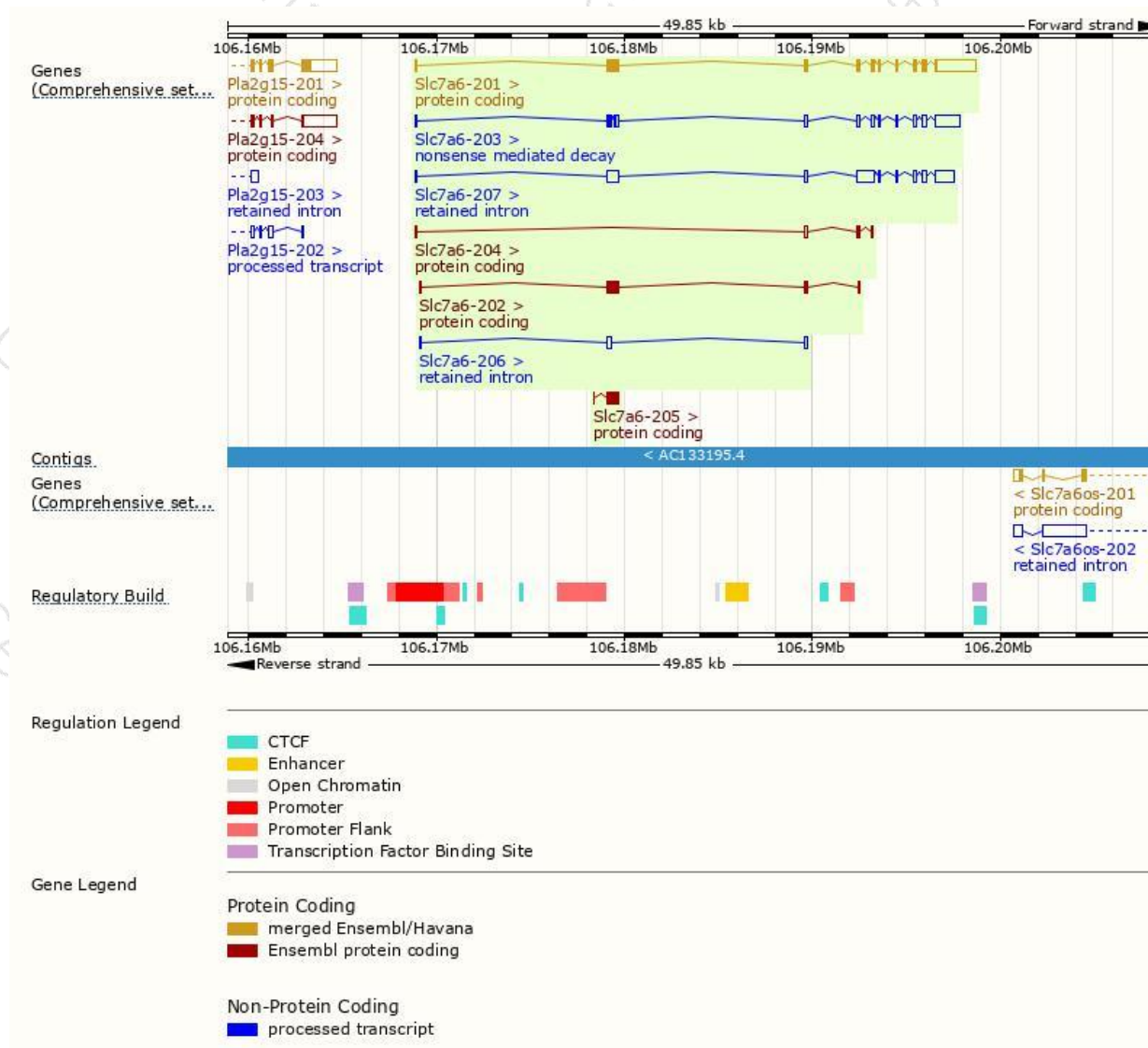
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc7a6-201	ENSMUST00000034378.4	3750	515aa	Protein coding	CCDS22631	Q8BGK6	TSL:1 GENCODE basic APPRIS P1
Slc7a6-202	ENSMUST00000211824.1	766	232aa	Protein coding	-	A0A1D5RM43	CDS 3' incomplete TSL:5
Slc7a6-205	ENSMUST00000212802.1	616	174aa	Protein coding	-	A0A1D5RMI7	CDS 3' incomplete TSL:3
Slc7a6-204	ENSMUST00000212421.1	408	79aa	Protein coding	-	A0A1D5RLG1	CDS 3' incomplete TSL:2
Slc7a6-203	ENSMUST00000212377.1	2672	66aa	Nonsense mediated decay	-	A0A1D5RMA4	TSL:1
Slc7a6-207	ENSMUST00000213020.1	3200	No protein	Retained intron	-	-	TSL:1
Slc7a6-206	ENSMUST00000212837.1	359	No protein	Retained intron	-	-	TSL:3

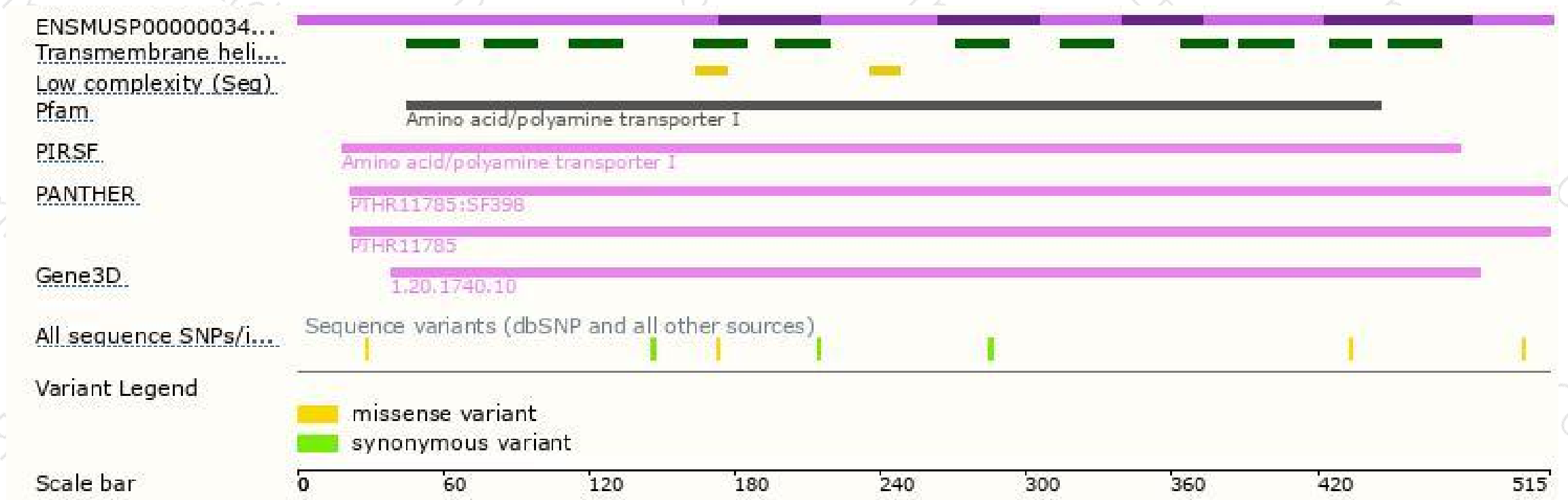
The strategy is based on the design of *Slc7a6-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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