

Slc7a3 Cas9-KO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

Design Date:

2019-8-30

Project Overview

Project Name

Slc7a3

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc7a3* gene. The schematic diagram is as follows:



- The *Slc7a3* gene has 7 transcripts. According to the structure of *Slc7a3* gene, exon3-exon9 of *Slc7a3-203* (ENSMUST00000113710.7) 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 *Slc7a3* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Slc7a3* gene is located on the ChrX. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Slc7a3 solute carrier family 7 (cationic amino acid transporter, y+ system), member 3 [*Mus musculus* (house mouse)]

Gene ID: 11989, updated on 14-Aug-2019

Summary

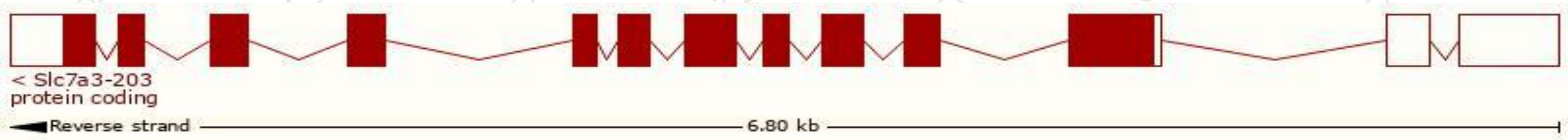
Official Symbol	Slc7a3 provided by MGI
Official Full Name	solute carrier family 7 (cationic amino acid transporter, y+ system), member 3 provided by MGI
Primary source	MGI:MGI:1100521
See related	Ensembl:ENSMUSG00000031297
Gene type	protein coding
RefSeq status	REVIEWED
Organism	<i>Mus musculus</i>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CAT3; Atrc3; CAT-3; SLC7A1; SLC7A2
Summary	The protein encoded by this gene is a member of the system y+ cationic amino acid transporter family. Proteins of this family allow uptake of arginine from extracellular media. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Sep 2014]
Expression	Broad expression in CNS E18 (RPKM 4.8), limb E14.5 (RPKM 1.7) and 17 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

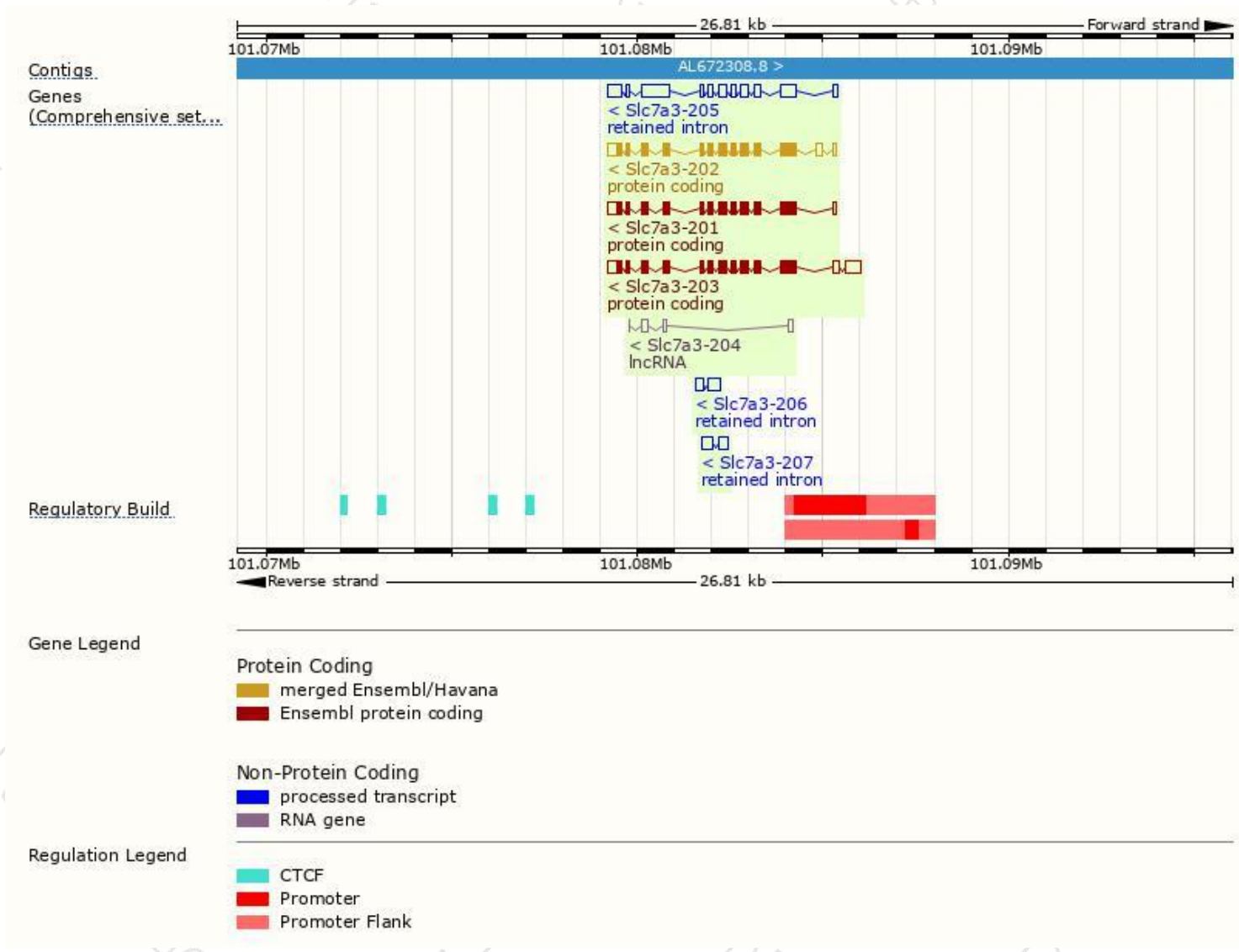
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc7a3-203	ENSMUST00000113710.7	2750	618aa	Protein coding	CCDS30309	P70423	TSL:5 GENCODE basic APPRIS P1
Slc7a3-202	ENSMUST00000101362.7	2371	618aa	Protein coding	CCDS30309	P70423	TSL:1 GENCODE basic APPRIS P1
Slc7a3-201	ENSMUST00000073927.4	2232	618aa	Protein coding	CCDS30309	P70423	TSL:1 GENCODE basic APPRIS P1
Slc7a3-205	ENSMUST00000138162.1	2717	No protein	Retained intron	-	-	TSL:2
Slc7a3-206	ENSMUST00000144410.1	570	No protein	Retained intron	-	-	TSL:2
Slc7a3-207	ENSMUST00000151922.1	544	No protein	Retained intron	-	-	TSL:3
Slc7a3-204	ENSMUST00000126282.1	367	No protein	lncRNA	-	-	TSL:5

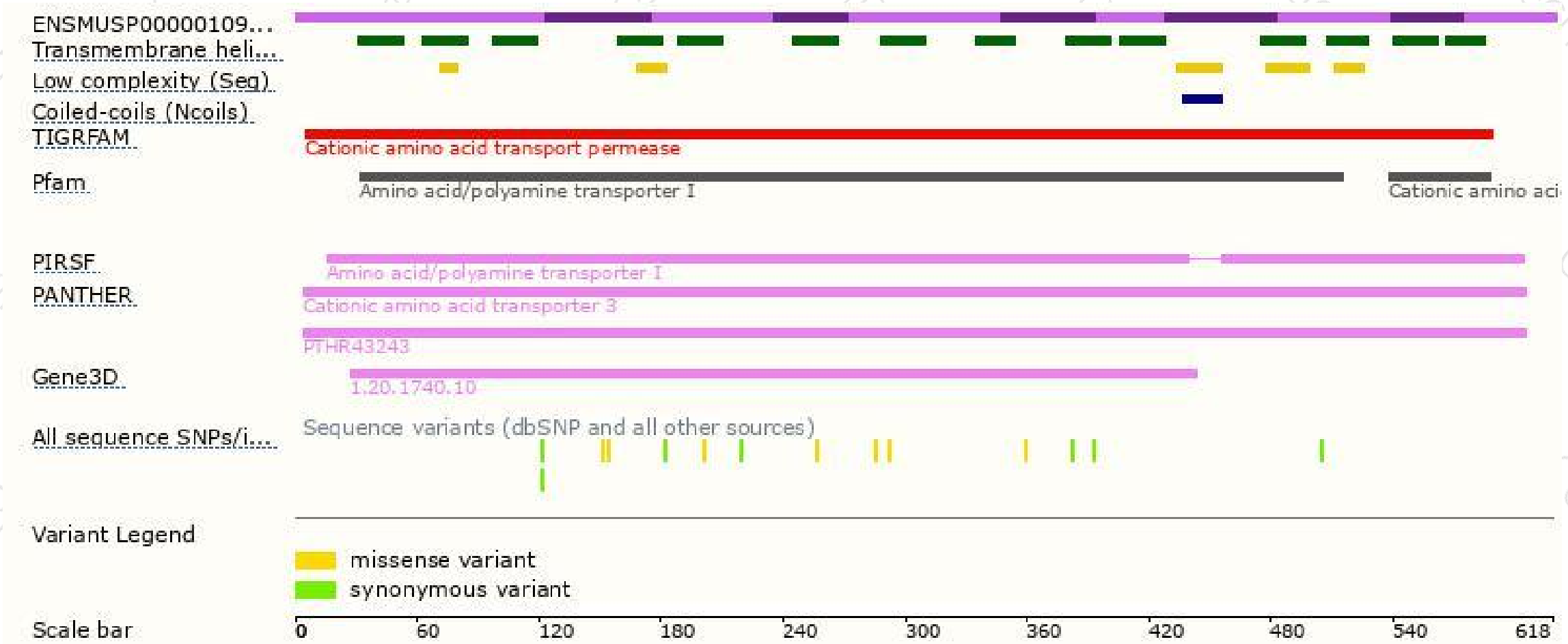
The strategy is based on the design of *Slc7a3-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

