

Slc39a12 Cas9-KO Strategy

Designer: Shuang Zhang

Reviewer: Yun Li

Design Date: 2021-4-7

Project Overview

Project Name

Slc39a12

Project type

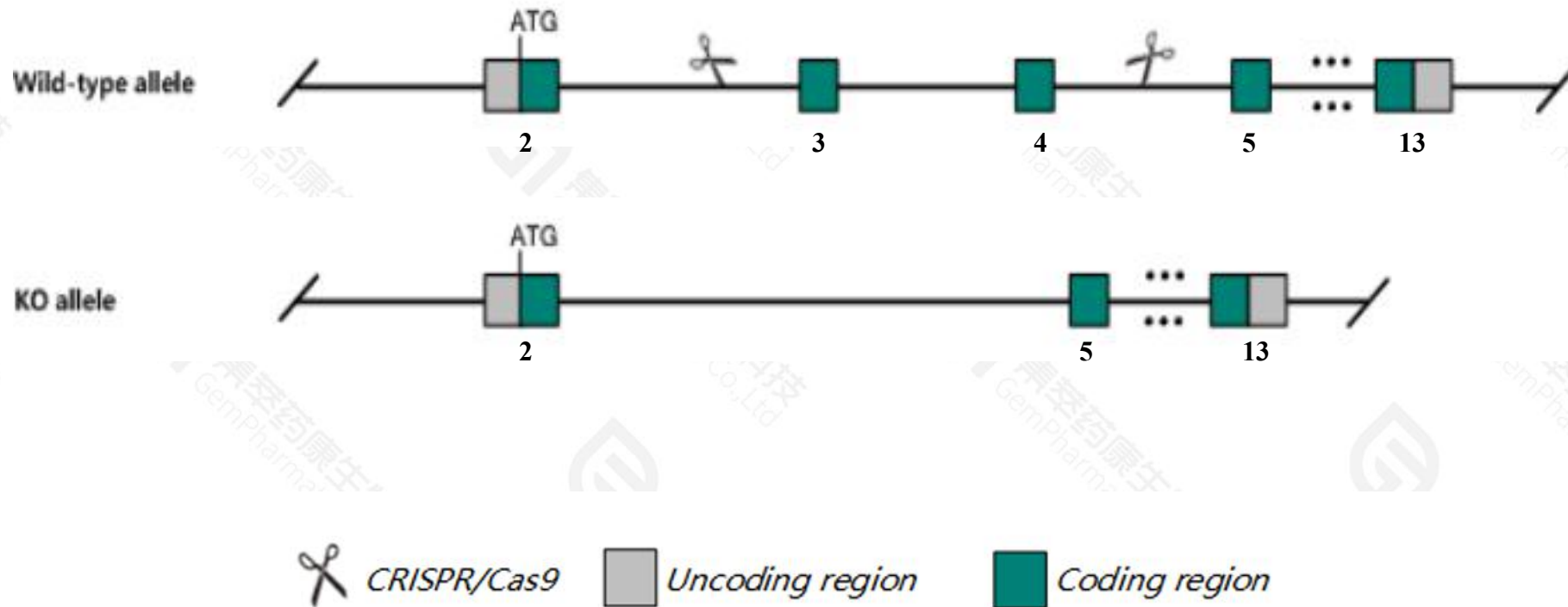
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc39a12* gene. The schematic diagram is as follows:



- The *Slc39a12* gene has 3 transcripts. According to the structure of *Slc39a12* gene, exon3-exon4 of *Slc39a12-201*(ENSMUST00000082290.8) transcript is recommended as the knockout region. The region contains 490bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc39a12* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Slc39a12* gene is located on the Chr2. 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.

Slc39a12 solute carrier family 39 (zinc transporter), member 12 [Mus musculus (house mouse)]

Gene ID: 277468, updated on 17-Dec-2020

Summary



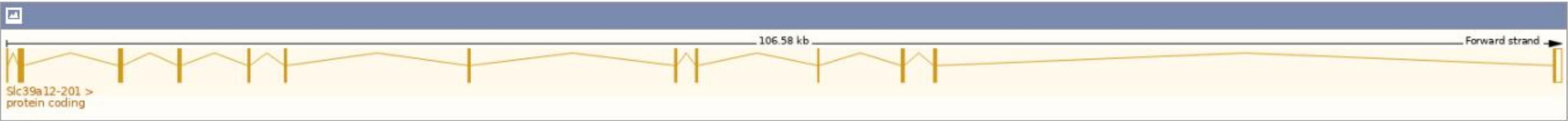
Official Symbol	Slc39a12 provided by MGI
Official Full Name	solute carrier family 39 (zinc transporter), member 12 provided by MGI
Primary source	MGI:MGI:2139274
See related	Ensembl:ENSMUSG00000036949
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW046938, Gm731
Expression	Biased expression in cerebellum adult (RPKM 13.0), cortex adult (RPKM 12.2) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

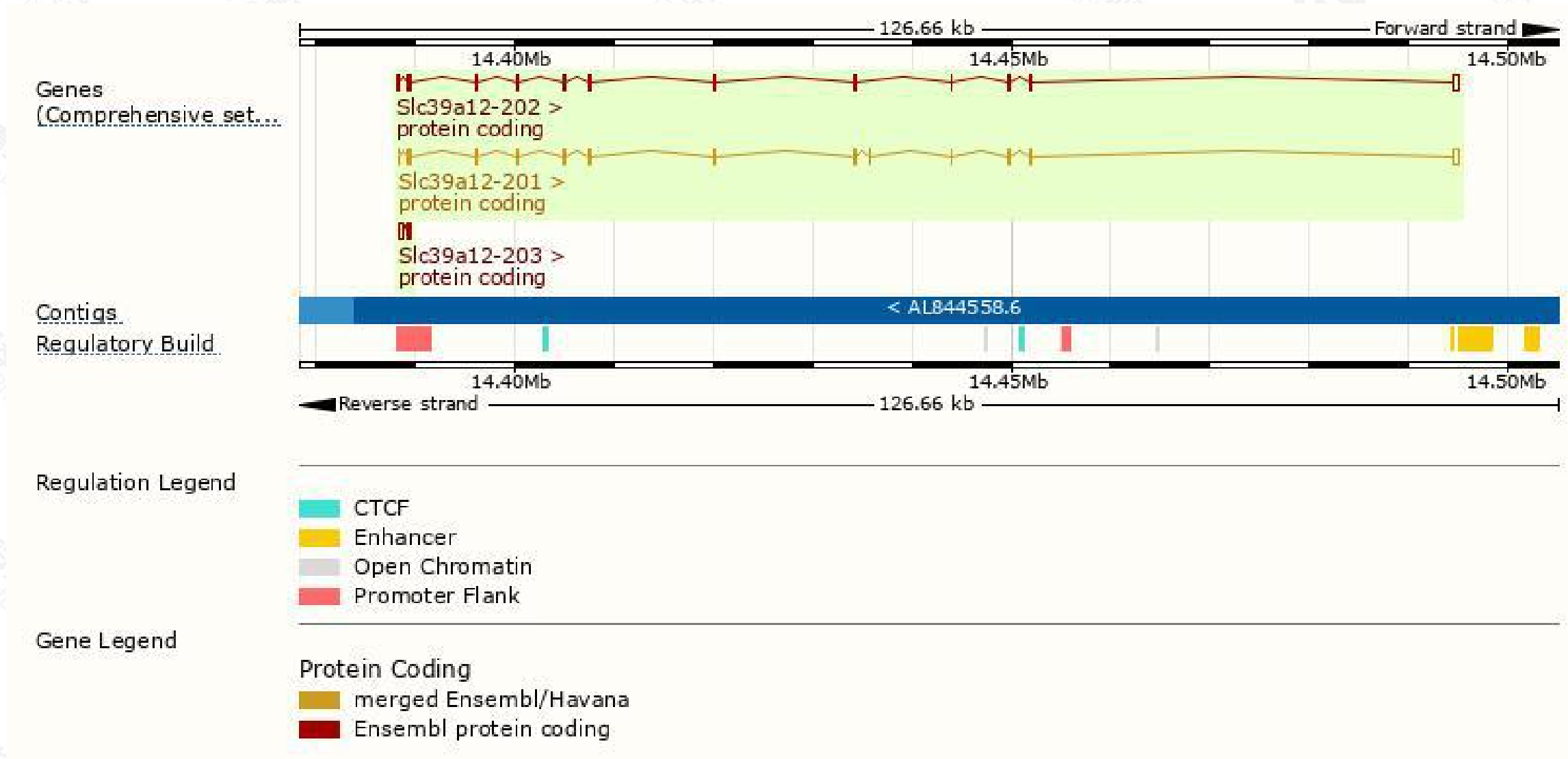
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc39a12-201	ENSMUST00000082290.8	2675	689aa	Protein coding	CCDS15701		TSL:1 , GENCODE basic , APPRIS P2 ,
Slc39a12-202	ENSMUST00000114731.8	2648	653aa	Protein coding	-		TSL:5 , GENCODE basic , APPRIS ALT2 ,
Slc39a12-203	ENSMUST00000133258.2	536	73aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,

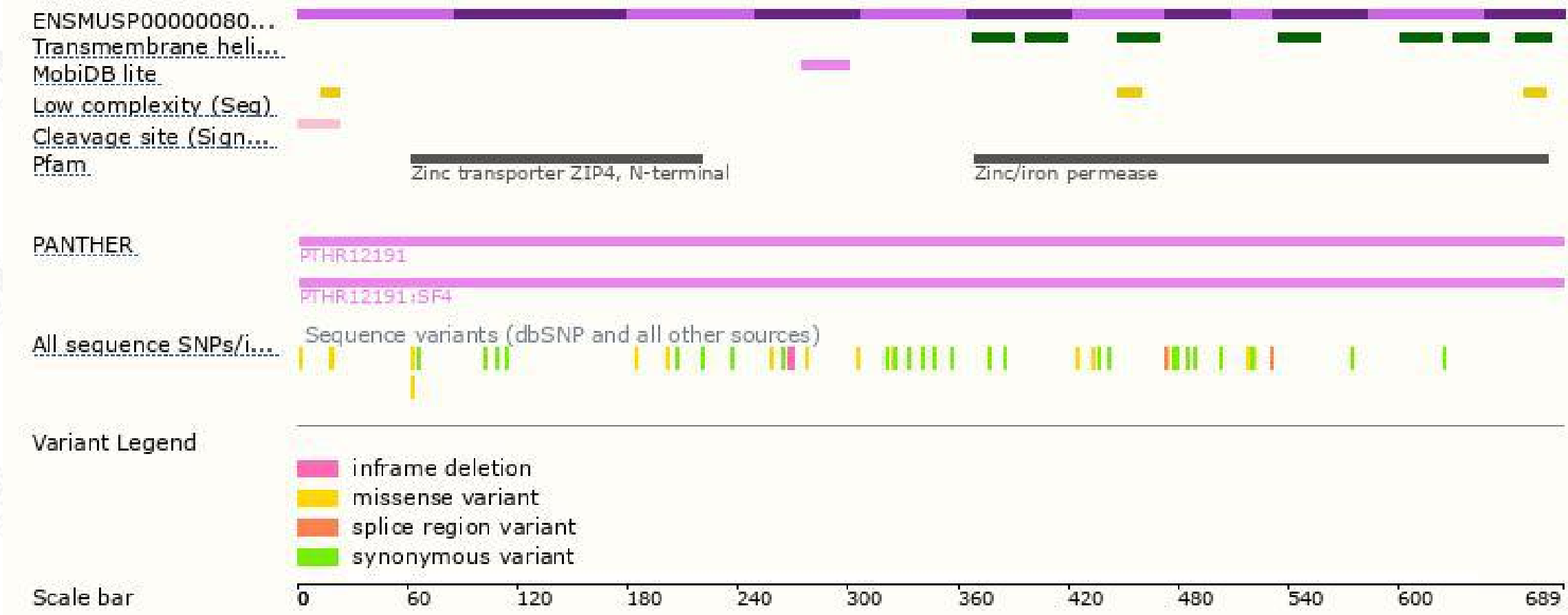
The strategy is based on the design of *Slc39a12-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.
Tel: 400-9660890

