

Slc38a1 Cas9-KO Strategy

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Design Date: 2020-2-14

Project Overview

Project Name

Slc38a1

Project type

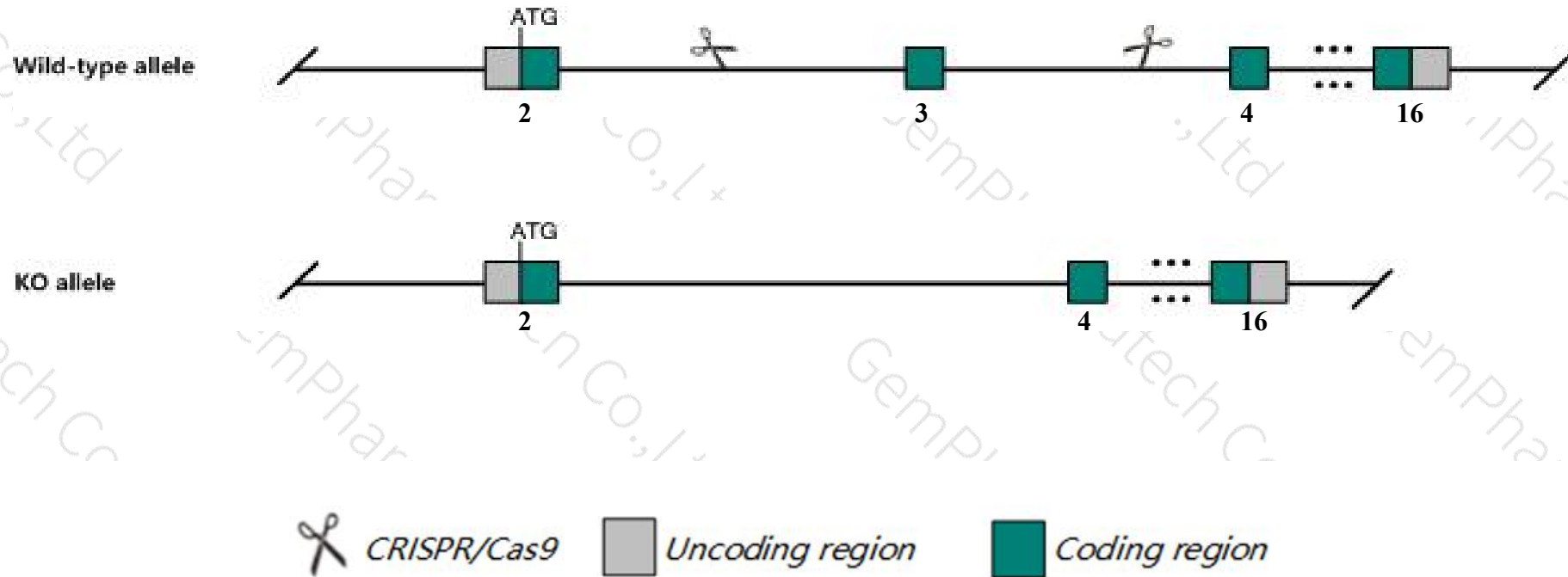
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc38a1* gene. The schematic diagram is as follows:



- The *Slc38a1* gene has 7 transcripts. According to the structure of *Slc38a1* gene, exon3 of *Slc38a1-201* (ENSMUST00000088452.10) transcript is recommended as the knockout region. The region contains 76bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc38a1* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Slc38a1* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Slc38a1 solute carrier family 38, member 1 [*Mus musculus* (house mouse)]

Gene ID: 105727, updated on 12-Aug-2019

Summary

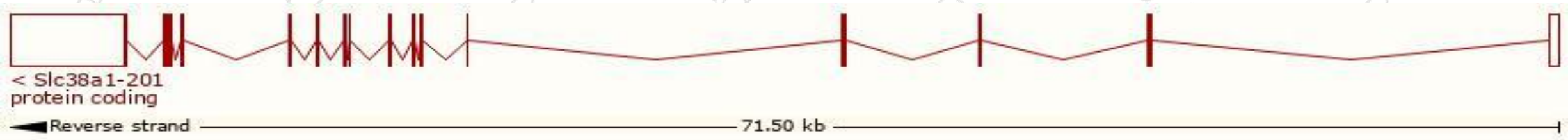
Official Symbol	Slc38a1 provided by MGI
Official Full Name	solute carrier family 38, member 1 provided by MGI
Primary source	MGI:MGI:2145895
See related	Ensembl:ENSMUSG00000023169
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	NAT2; AA408026; AA409865; AL022800; AU015942
Expression	Broad expression in cerebellum adult (RPKM 28.9), placenta adult (RPKM 22.1) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

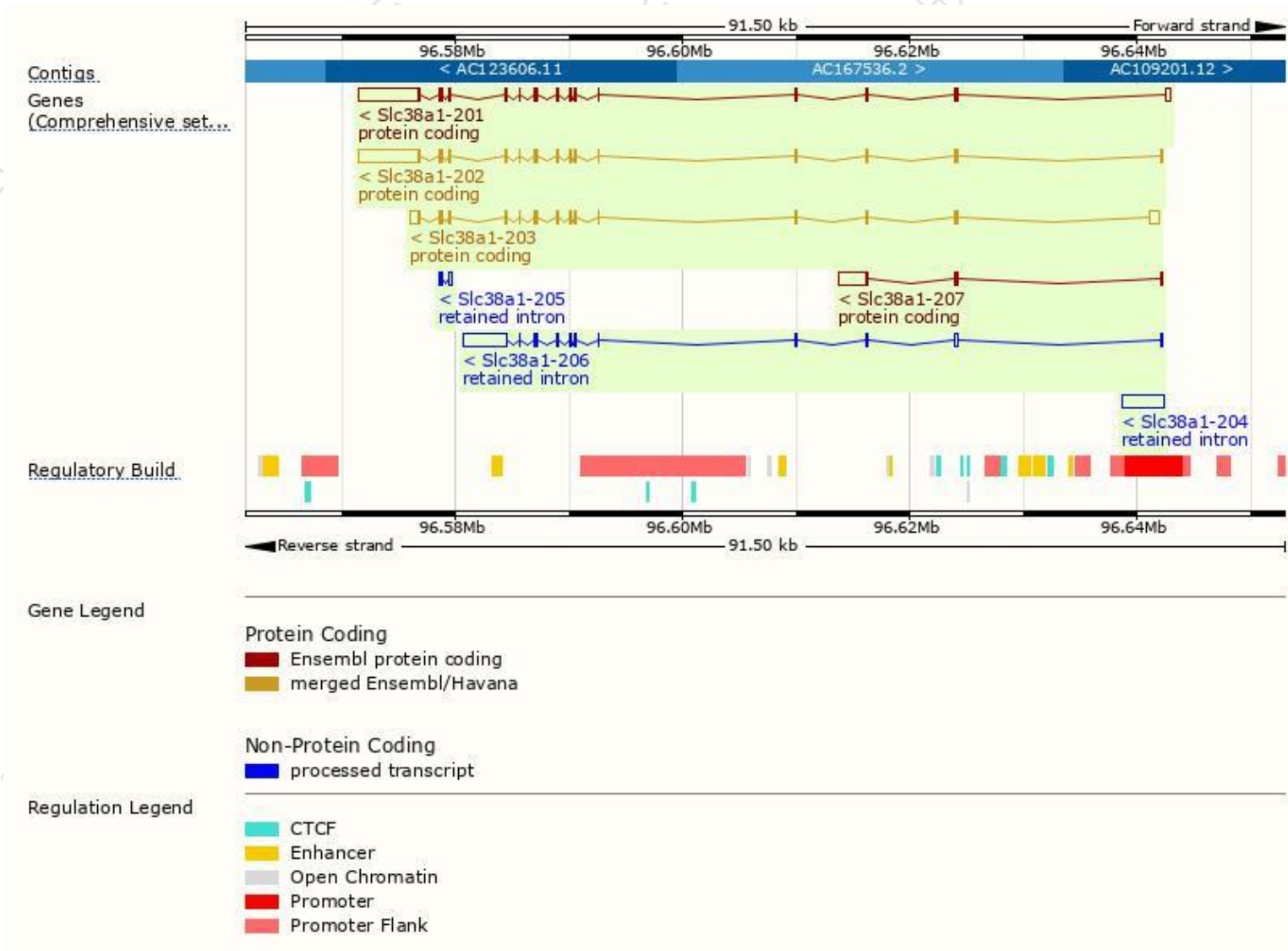
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc38a1-201	ENSMUST00000088452.10	7266	485aa	Protein coding	CCDS27777	Q8K2P7	TSL:1 GENCODE basic APPRIS P1
Slc38a1-202	ENSMUST00000088454.12	6966	485aa	Protein coding	CCDS27777	Q8K2P7	TSL:1 GENCODE basic APPRIS P1
Slc38a1-203	ENSMUST00000100262.3	3183	485aa	Protein coding	CCDS27777	Q8K2P7	TSL:1 GENCODE basic APPRIS P1
Slc38a1-207	ENSMUST00000230767.1	2816	72aa	Protein coding	-	Q8K2P7	GENCODE basic
Slc38a1-206	ENSMUST00000230756.1	4831	No protein	Retained intron	-	-	
Slc38a1-204	ENSMUST00000229253.1	3722	No protein	Retained intron	-	-	
Slc38a1-205	ENSMUST00000230607.1	506	No protein	Retained intron	-	-	

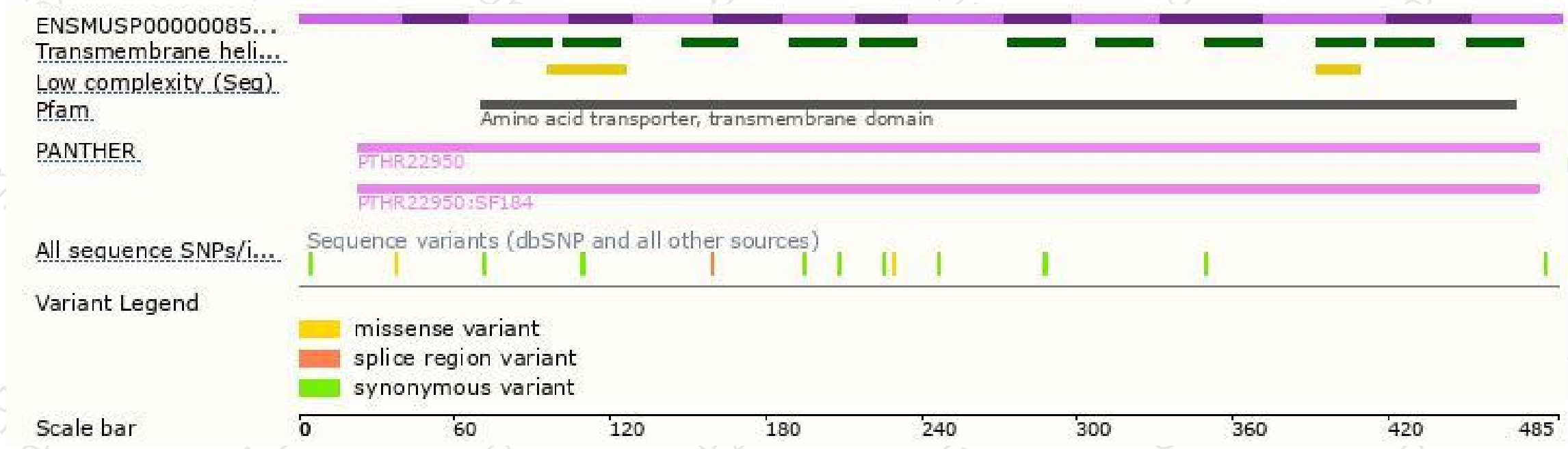
The strategy is based on the design of *Slc38a1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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