

Slc6a16 Cas9-KO Strategy

Designer: Daohua Xu

Reviewer: Huimin Su

Design Date: 2020-8-24

Project Overview

Project Name

Slc6a16

Project type

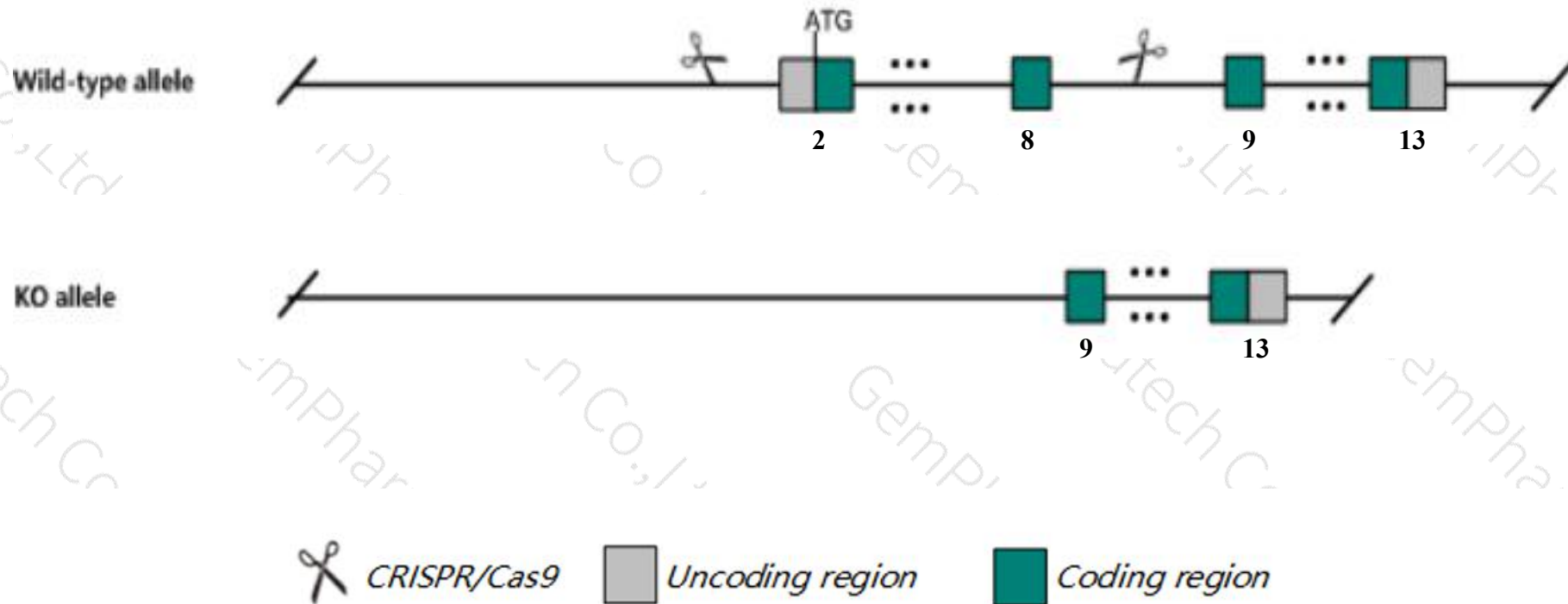
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc6a16* gene. The schematic diagram is as follows:



- The *Slc6a16* gene has 3 transcripts. According to the structure of *Slc6a16* gene, exon2-exon8 of *Slc6a16*-203(ENSMUST00000213347.1) 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 *Slc6a16* 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 KO region contains functional region of the *Gm23585* gene. Knockout the region may affect the function of *Gm23585* gene.
- The *Slc6a16* gene is located on the Chr7. 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)

Slc6a16 solute carrier family 6, member 16 [Mus musculus (house mouse)]

Gene ID: 381884, updated on 13-Mar-2020

Summary



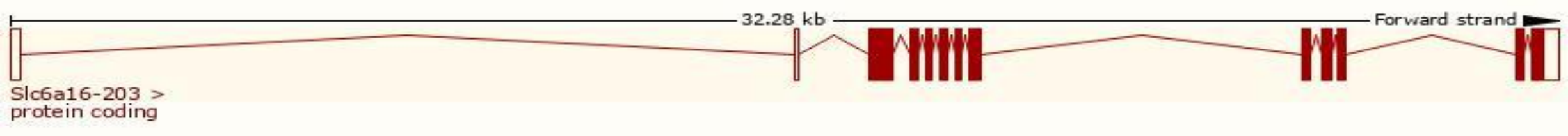
Official Symbol	Slc6a16 provided by MGI
Official Full Name	solute carrier family 6, member 16 provided by MGI
Primary source	MGI:MGI:2685930
See related	Ensembl:ENSMUSG00000094152
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm1084
Expression	Restricted expression toward testis adult (RPKM 27.4) See more
Orthologs	human all

Transcript information (Ensembl)

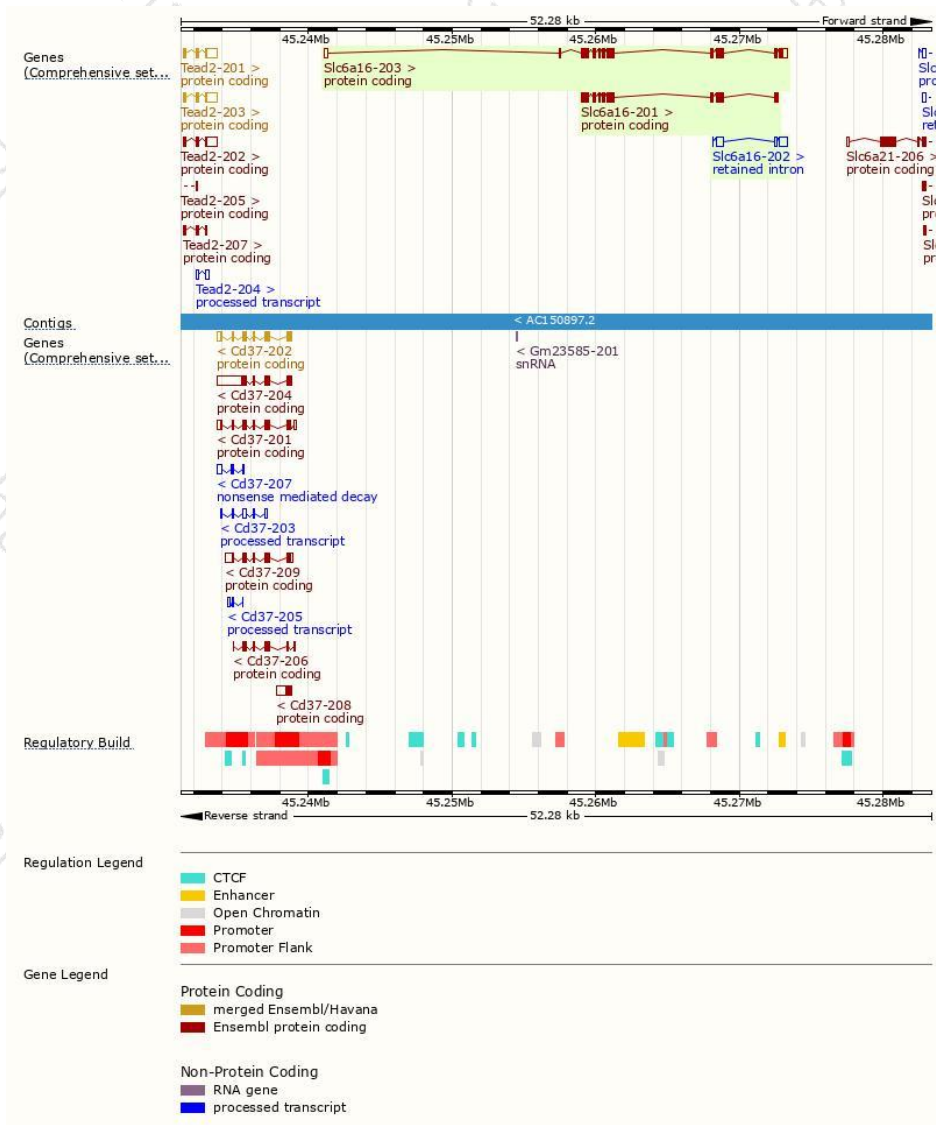
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc6a16-203	ENSMUST00000213347.1	2865	742aa	Protein coding	-	A0A1L1SR47	TSL:5 GENCODE basic APPRIS P5
Slc6a16-201	ENSMUST00000179310.3	2007	669aa	Protein coding	-	A0A1L1SVE2	TSL:5 GENCODE basic APPRIS ALT2
Slc6a16-202	ENSMUST00000210163.1	1241	No protein	Retained intron	-	-	TSL:3

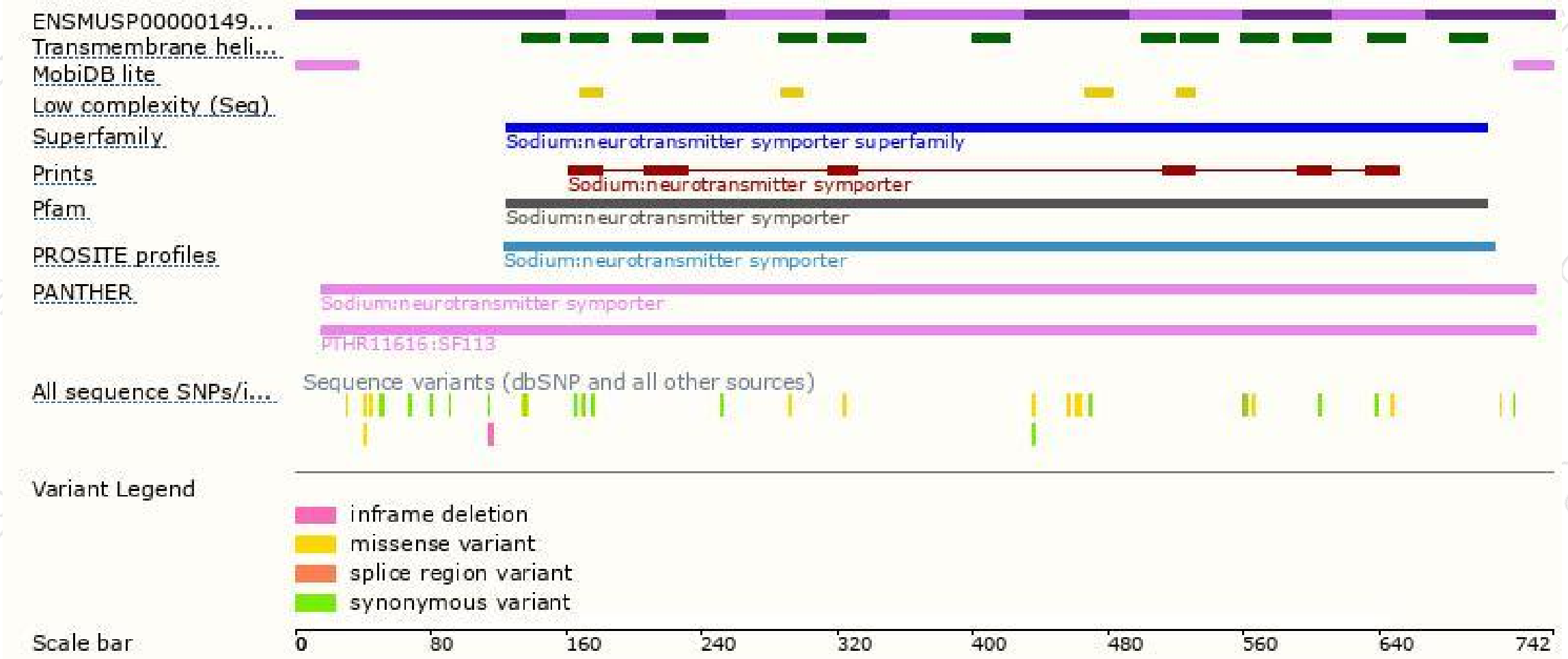
The strategy is based on the design of *Slc6a16-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

