

***Slc45a4* Cas9-KO Strategy**

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Reviewer: JiaYu

Design Date: 2020-7-21

Project Overview

Project Name

Slc45a4

Project type

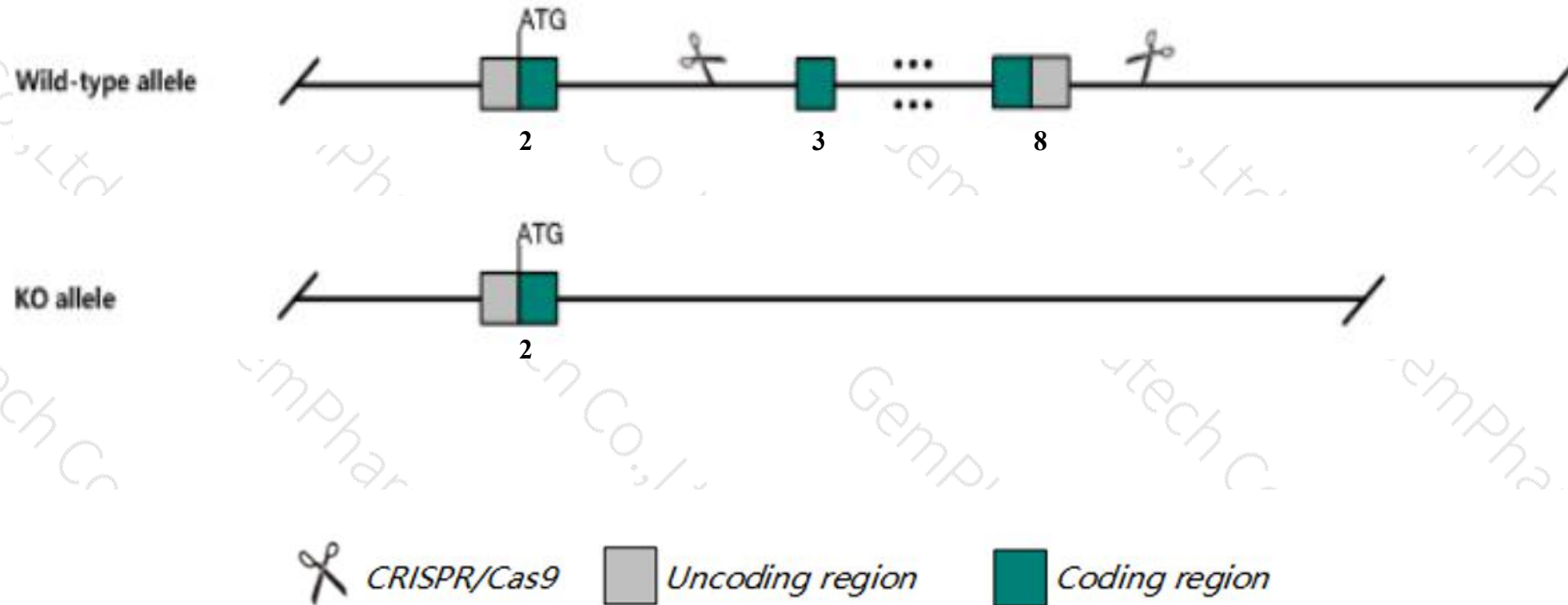
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc45a4* gene. The schematic diagram is as follows:



- The *Slc45a4* gene has 8 transcripts. According to the structure of *Slc45a4* gene, exon3-exon8 of *Slc45a4*-207(ENSMUST00000151288.7) transcript is recommended as the knockout region. The region contains 2114bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc45a4* 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 *Slc45a4* 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)

Slc45a4 solute carrier family 45, member 4 [Mus musculus (house mouse)]

Gene ID: 106068, updated on 13-Mar-2020

Summary



Official Symbol [Slc45a4](#) provided by [MGI](#)

Official Full Name [solute carrier family 45, member 4](#) provided by [MGI](#)

Primary source [MGI:MGI:2146236](#)

See related [Ensembl:ENSMUSG00000079020](#)

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 [9330175B01Rik](#), [AW552276](#)

Expression Ubiquitous expression in adrenal adult (RPKM 15.9), ovary adult (RPKM 14.7) and 28 other tissues [See more](#)

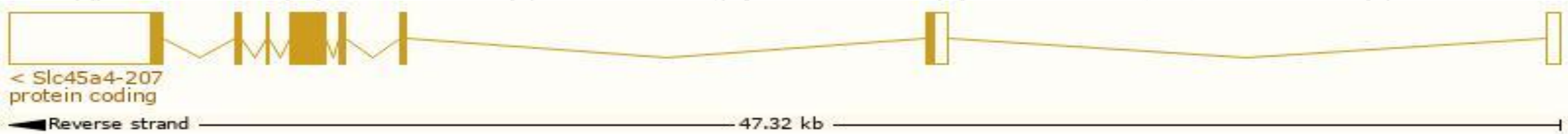
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

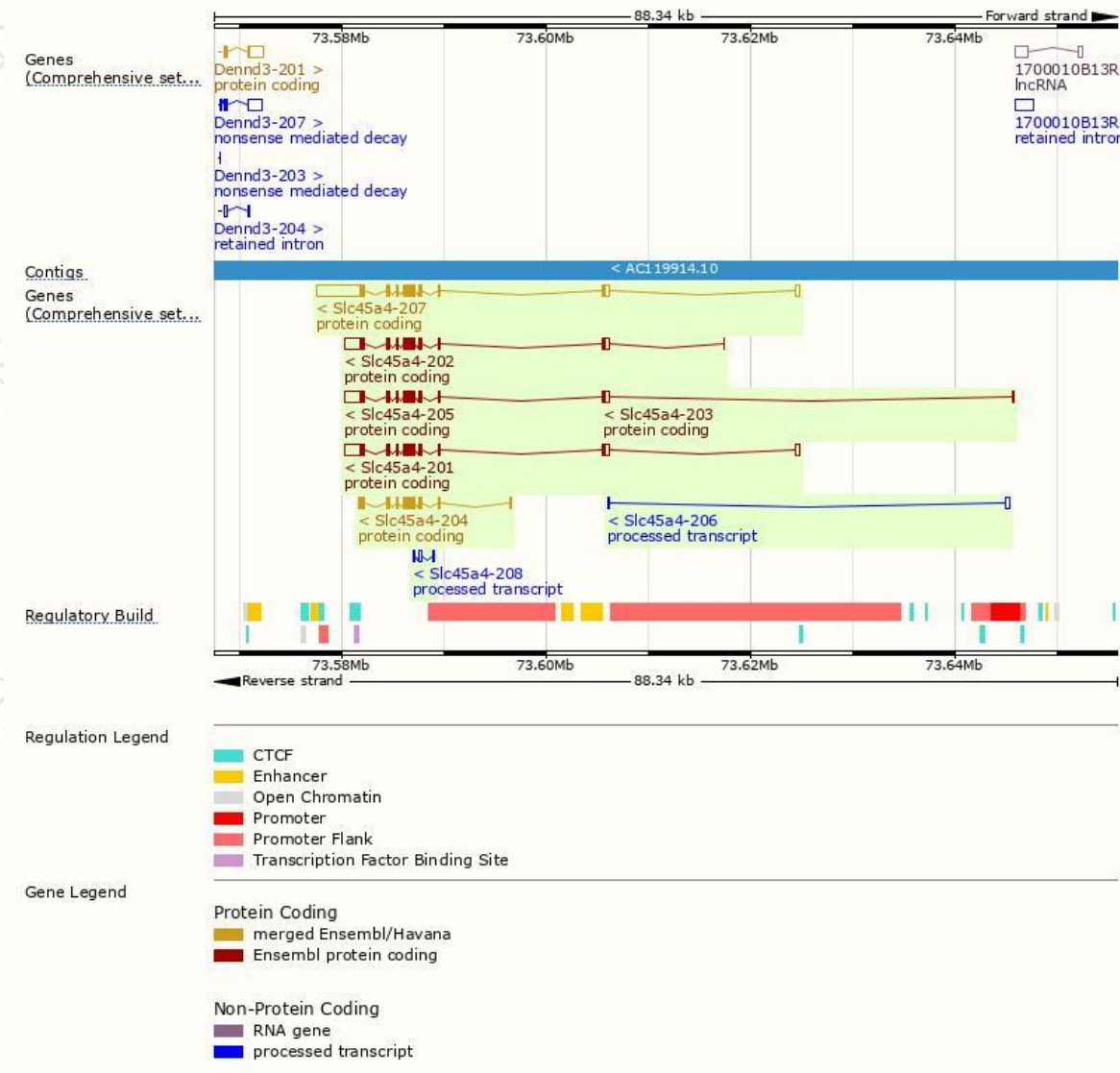
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc45a4-207	ENSMUST00000151288.7	7509	785aa	Protein coding	CCDS27517	Q0P5V9	TSL:1 GENCODE basic APPRIS P2
Slc45a4-202	ENSMUST00000076224.11	4240	785aa	Protein coding	CCDS27517	Q0P5V9	TSL:1 GENCODE basic APPRIS P2
Slc45a4-204	ENSMUST00000132607.1	2457	591aa	Protein coding	CCDS49632	Q0P5V9	TSL:1 GENCODE basic
Slc45a4-201	ENSMUST00000054266.12	4664	793aa	Protein coding	-	Q0P5V9	TSL:5 GENCODE basic APPRIS ALT2
Slc45a4-205	ENSMUST00000144936.7	3639	721aa	Protein coding	-	F7BEQ1	CDS 5' incomplete TSL:1
Slc45a4-203	ENSMUST00000130765.1	753	31aa	Protein coding	-	D3Z0C0	CDS 3' incomplete TSL:2
Slc45a4-206	ENSMUST00000150409.1	581	No protein	Processed transcript	-	-	TSL:3
Slc45a4-208	ENSMUST00000152558.1	438	No protein	Processed transcript	-	-	TSL:3

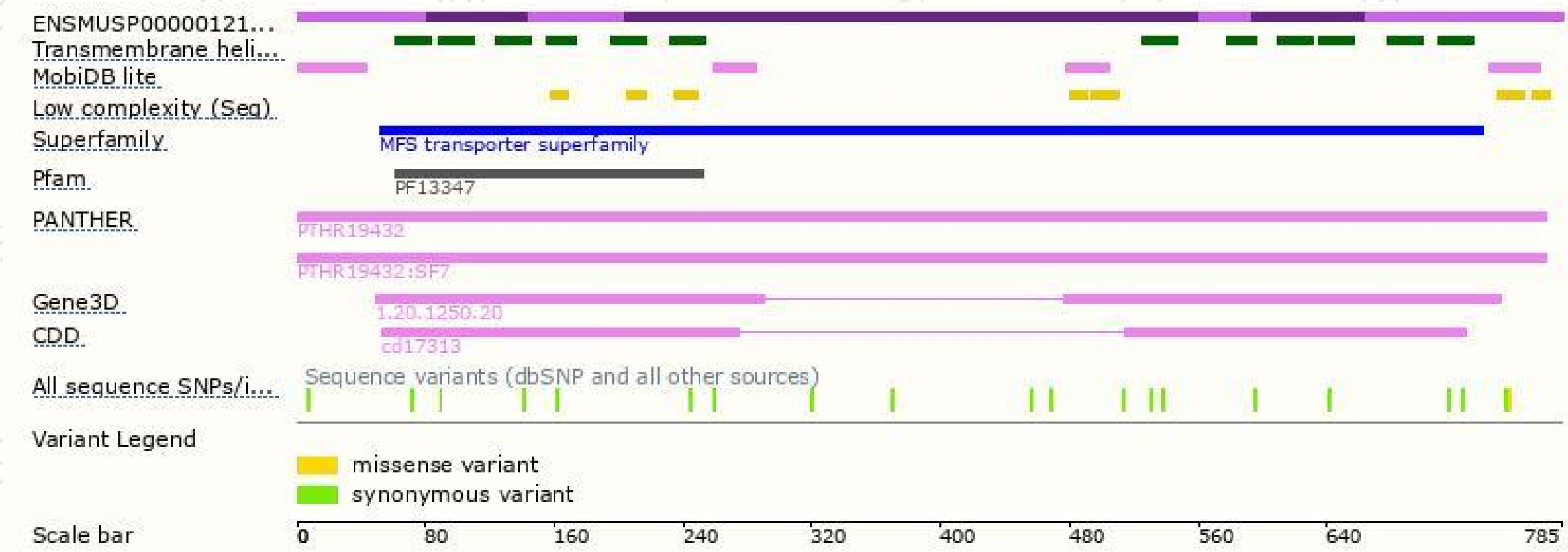
The strategy is based on the design of *Slc45a4-207* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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