

Slc27a3 Cas9-KO Strategy

Designer: Ruirui Zhang

Reviewer: Yanhua Shen

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Project Overview

Project Name

Slc27a3

Project type

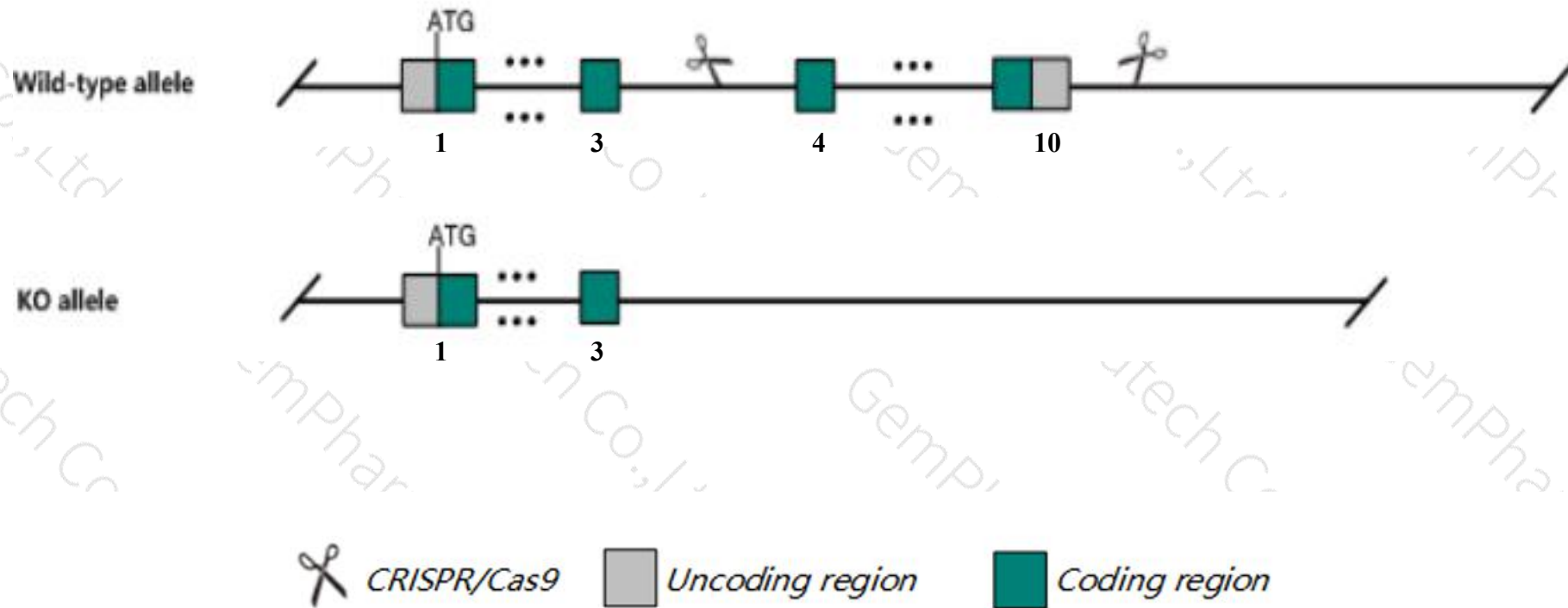
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc27a3* gene. The schematic diagram is as follows:



- The *Slc27a3* gene has 5 transcripts. According to the structure of *Slc27a3* gene, exon4-exon10 of *Slc27a3-201*(ENSMUST00000029541.11) transcript is recommended as the knockout region. The region contains most of coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc27a3* 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 Intron3 is only 567bp, loxp insertion may affect mRNA splicing.
- The *Slc27a3* gene is located on the Chr3. 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)

Slc27a3 solute carrier family 27 (fatty acid transporter), member 3 [*Mus musculus* (house mouse)]

Gene ID: 26568, updated on 10-Oct-2020

Summary

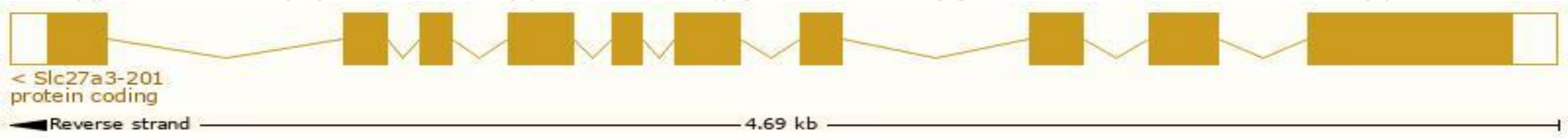
Official Symbol	Slc27a3 provided by MGI
Official Full Name	solute carrier family 27 (fatty acid transporter), member 3 provided by MGI
Primary source	MGI:MGI:1347358
See related	Ensembl:ENSMUSG00000027932
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Ac; FAT; FATP3; Acsvl3; FATP-3; Vlcs-3
Expression	Biased expression in adrenal adult (RPKM 148.3), ovary adult (RPKM 32.5) and 7 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

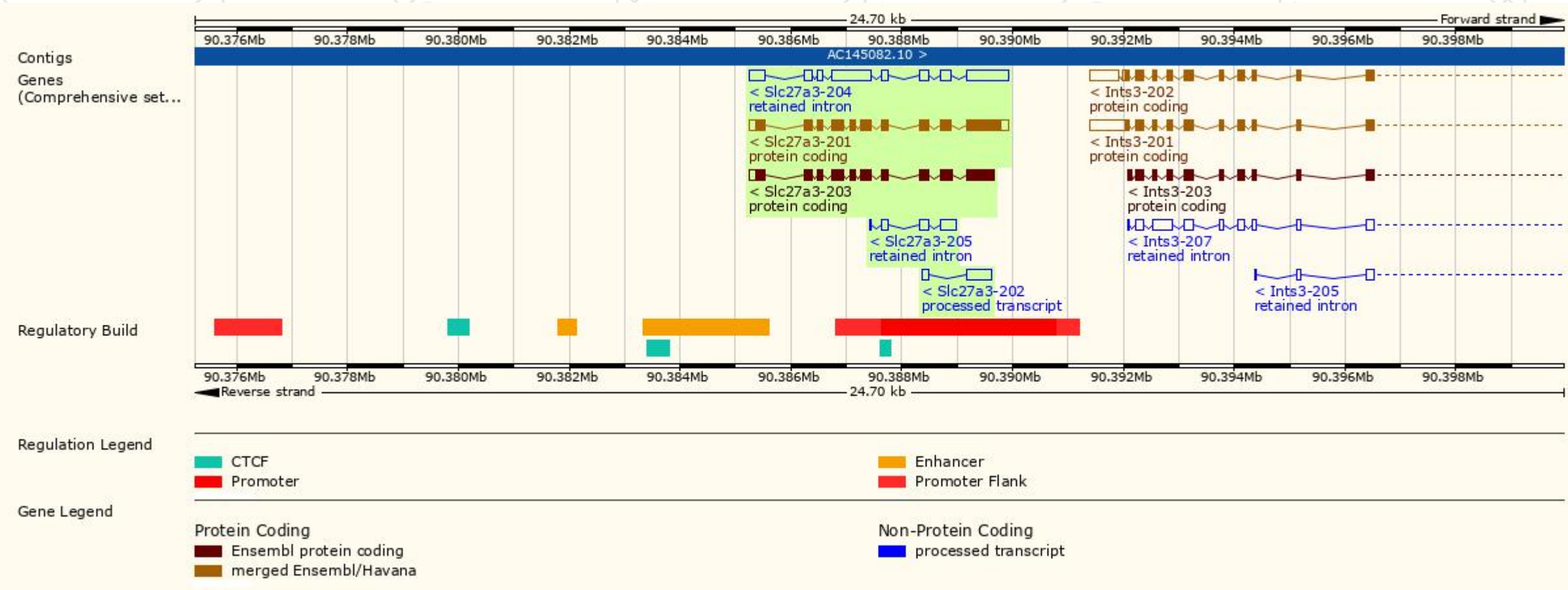
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc27a3-201	ENSMUST00000029541.11	2259	667aa	Protein coding	CCDS17527	G3X8Y7	TSL:1 GENCODE basic APPRIS P1
Slc27a3-203	ENSMUST00000132041.1	2016	633aa	Protein coding	-	F7CPA3	CDS 5' incomplete TSL:1
Slc27a3-202	ENSMUST00000127064.1	583	No protein	Processed transcript	-	-	TSL:3
Slc27a3-204	ENSMUST00000144572.7	2487	No protein	Retained intron	-	-	TSL:2
Slc27a3-205	ENSMUST00000153978.1	591	No protein	Retained intron	-	-	TSL:2

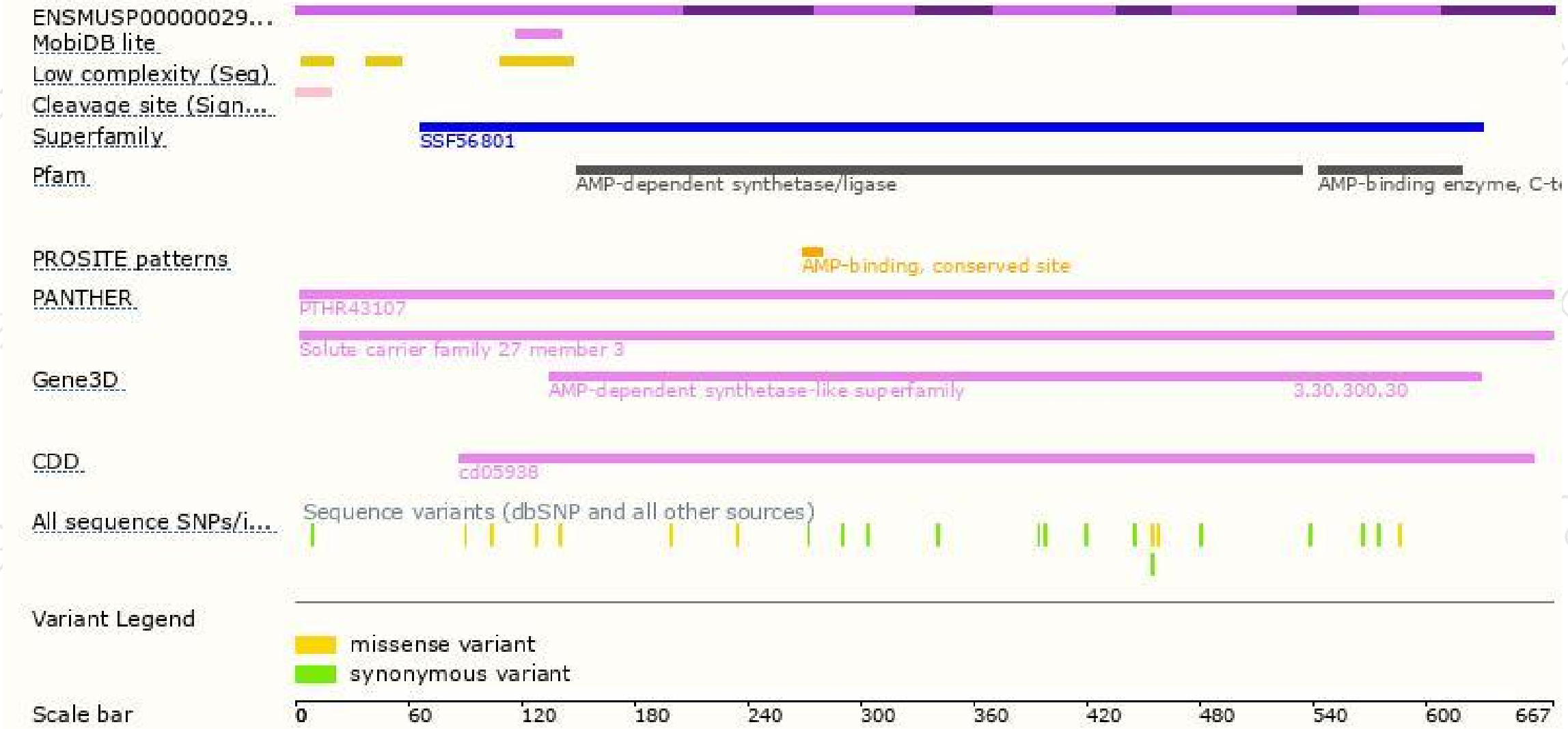
The strategy is based on the design of *Slc27a3-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

