Slc25a44 Cas9-KO Strategy

Designer: Lingyan Wu

Reviewer: Miaomiao Cui

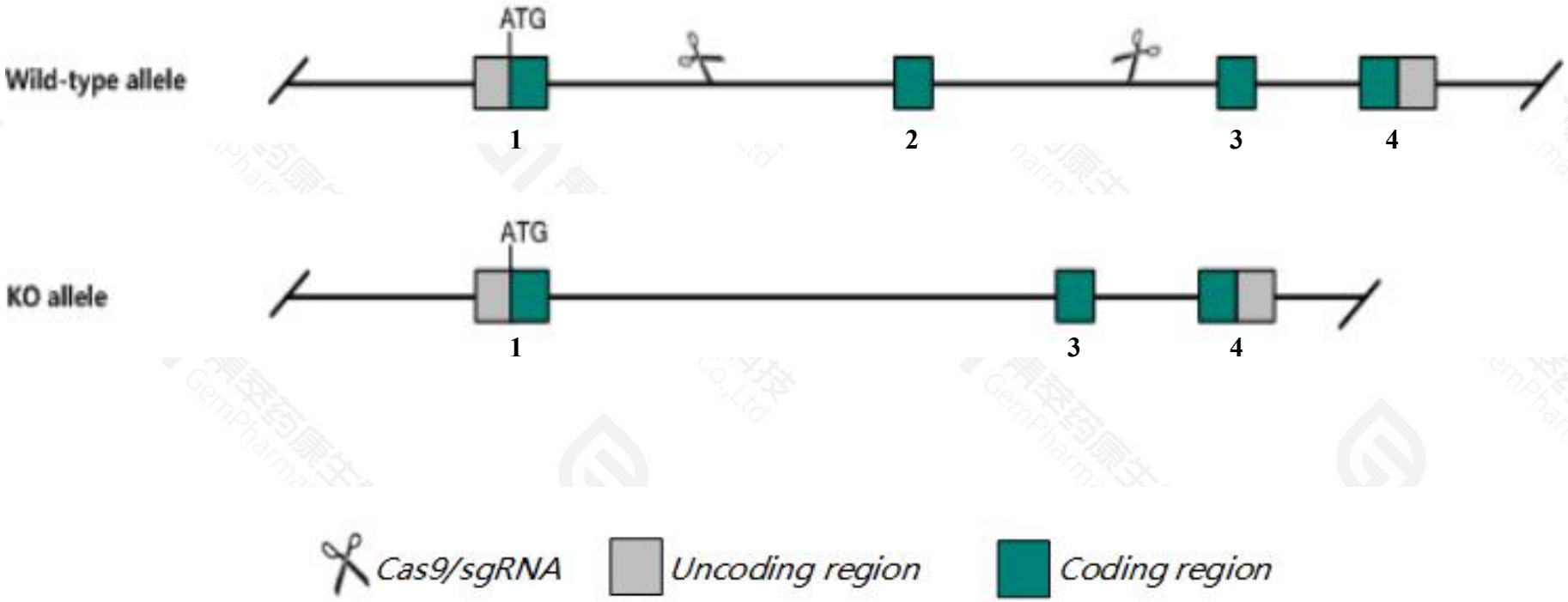
Design Date: 2021-7-9

Project Overview

Project Name	***Slc25a44***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc25a44* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc25a44* gene has 4 transcripts. According to the structure of *Slc25a44* gene, exon2 of *Slc25a44-201*(ENSMUST00000057935.9) transcript is recommended as the knockout region.The region contains 638bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc25a44* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA 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.

Notice

➢ The *Slc25a44* 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）

集萃药康 GemPharmatech

Slc25a44 solute carrier family 25, member 44 [Mus musculus (house mouse)]

Gene ID: 229517, updated on 17-Dec-2020

Summary

Official Symbol	Slc25a44 provided by MGI
Official Full Name	solute carrier family 25, member 44 provided by MGI
Primary source	MGI:MGI:2444391
See related	Ensembl:ENSMUSG00000050144
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	6720482A19, B430110G05Rik
Expression	Ubiquitous expression in mammary gland adult (RPKM 24.5), subcutaneous fat pad adult (RPKM 23.3) and 28 other tissues See more
Orthologs	human all

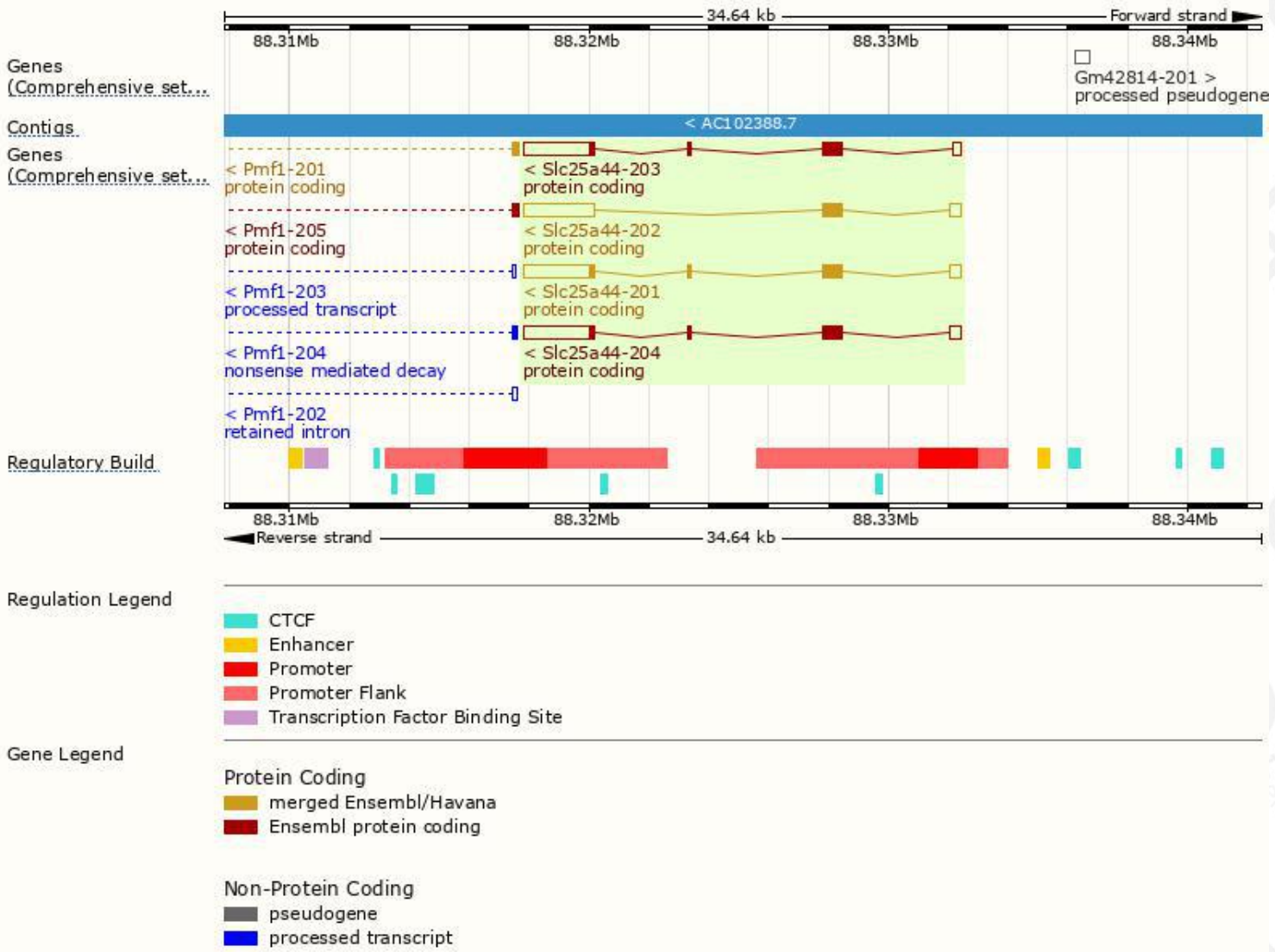
Transcript information（Ensembl）

The gene has 4 transcripts,all transcripts are shown below:

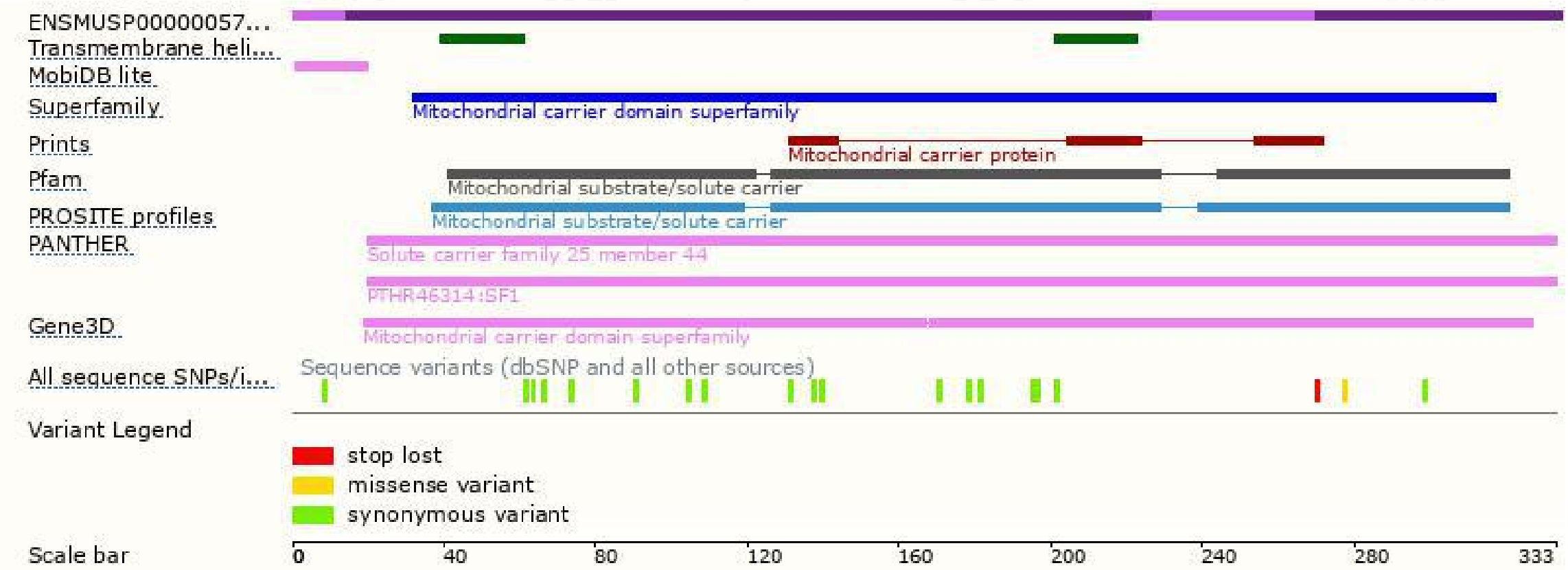
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc25a44-201	ENSMUST00000057935.9	3577	333aa	Protein coding	CCDS50950		TSL:1 , GENCODE basic ,
Slc25a44-204	ENSMUST00000195657.6	3504	314aa	Protein coding	CCDS79943		TSL:1 , GENCODE basic , APPRIS P1 ,
Slc25a44-203	ENSMUST00000193433.6	3429	314aa	Protein coding	CCDS79943		TSL:1 , GENCODE basic , APPRIS P1 ,
Slc25a44-202	ENSMUST00000168755.7	3418	228aa	Protein coding	CCDS50949		TSL:1 , GENCODE basic ,

The strategy is based on the design of *Slc25a44-201* transcript,the transcription is shown below:

Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

集萃药康生物科技
GemPharmatech Co.,Ltd