

Tmcc3 Cas9-KO Strategy

Designer: Rui Xiong

Reviewer: Miaomiao Cui

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Project Overview

Project Name

Tmcc3

Project type

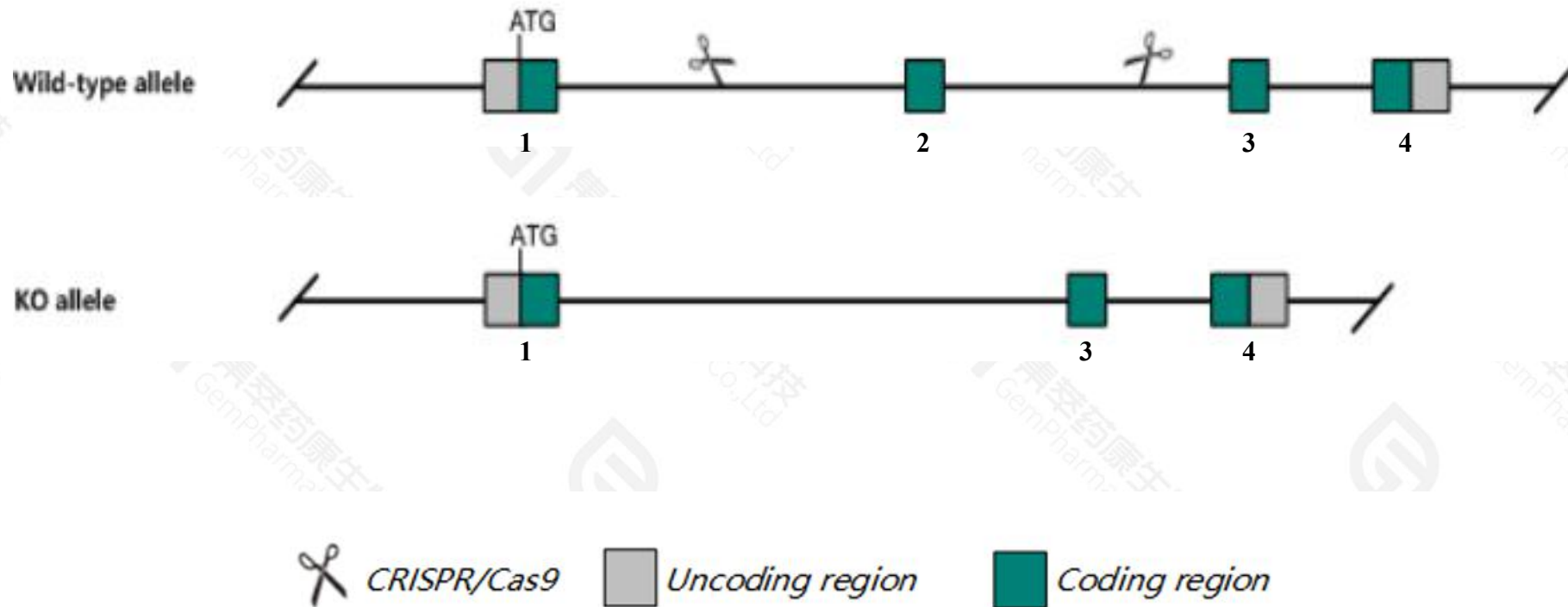
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tmcc3* gene. The schematic diagram is as follows:



- The *Tmcc3* gene has 9 transcripts. According to the structure of *Tmcc3* gene, exon2 of *Tmcc3*-201(ENSMUST00000065060.12) transcript is recommended as the knockout region. The region contains 917bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tmcc3* 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 knockout region is in the intron of *Tmcc3os-201*, Knockout the region may affect *Tmcc3os-201* gene.
- The *Tmcc3* gene is located on the Chr10. 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.

Tmcc3 transmembrane and coiled coil domains 3 [Mus musculus (house mouse)]

Gene ID: 319880, updated on 3-Jan-2021

Summary



Official Symbol Tmcc3 provided by [MGI](#)

Official Full Name transmembrane and coiled coil domains 3 provided by [MGI](#)

Primary source [MGI:MGI:2442900](#)

See related [Ensembl:ENSMUSG00000020023](#)

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 A230066D03Rik, AW488095, C630016B22Rik, C88213, Gm1556, Tmcc1

Expression Ubiquitous expression in lung adult (RPKM 15.1), colon adult (RPKM 12.4) and 26 other tissues [See more](#)

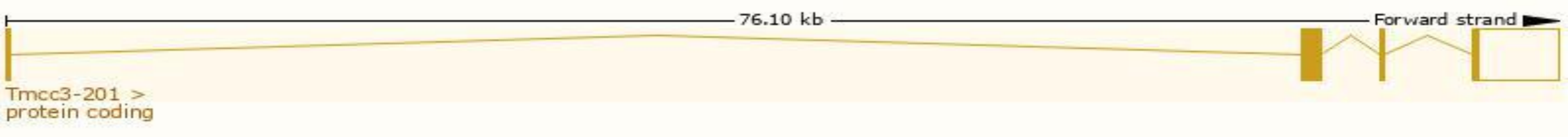
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

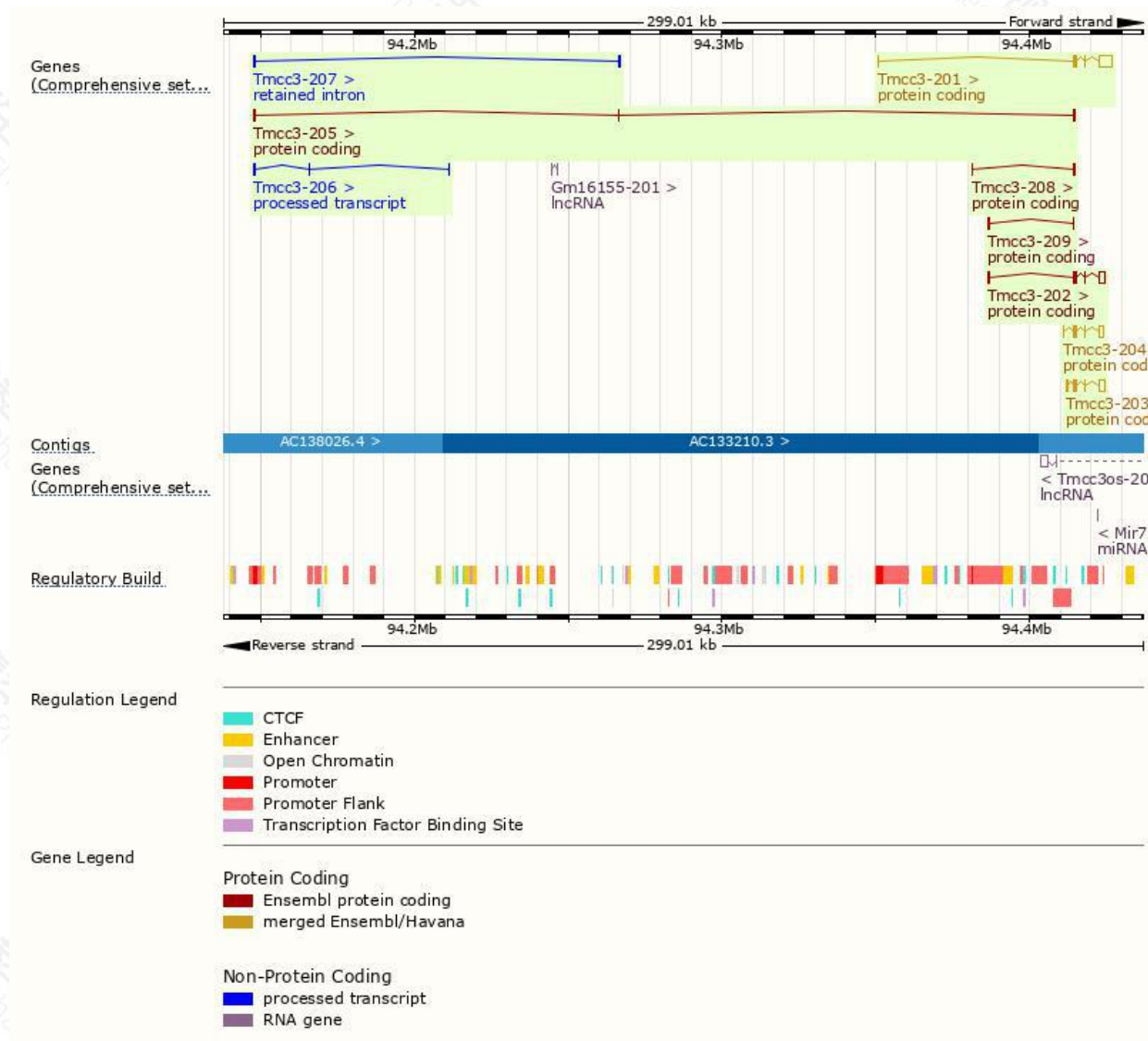
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tmcc3-201	ENSMUST00000065060.12	5530	477aa	Protein coding	CCDS24134		TSL:1 , GENCODE basic , APPRIS P3 ,
Tmcc3-203	ENSMUST00000117929.2	3317	446aa	Protein coding	CCDS48675		TSL:1 , GENCODE basic , APPRIS ALT1 ,
Tmcc3-202	ENSMUST00000117460.8	3217	446aa	Protein coding	CCDS48675		TSL:1 , GENCODE basic , APPRIS ALT1 ,
Tmcc3-204	ENSMUST00000121471.8	2614	446aa	Protein coding	CCDS48675		TSL:1 , GENCODE basic , APPRIS ALT1 ,
Tmcc3-205	ENSMUST00000132743.3	670	119aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Tmcc3-208	ENSMUST00000148823.3	638	161aa	Protein coding	-		CDS 3' incomplete , TSL:2 ,
Tmcc3-209	ENSMUST00000148910.3	420	76aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Tmcc3-206	ENSMUST00000139230.2	386	No protein	Processed transcript	-		TSL:3 ,
Tmcc3-207	ENSMUST00000147869.2	629	No protein	Retained intron	-		TSL:1 ,

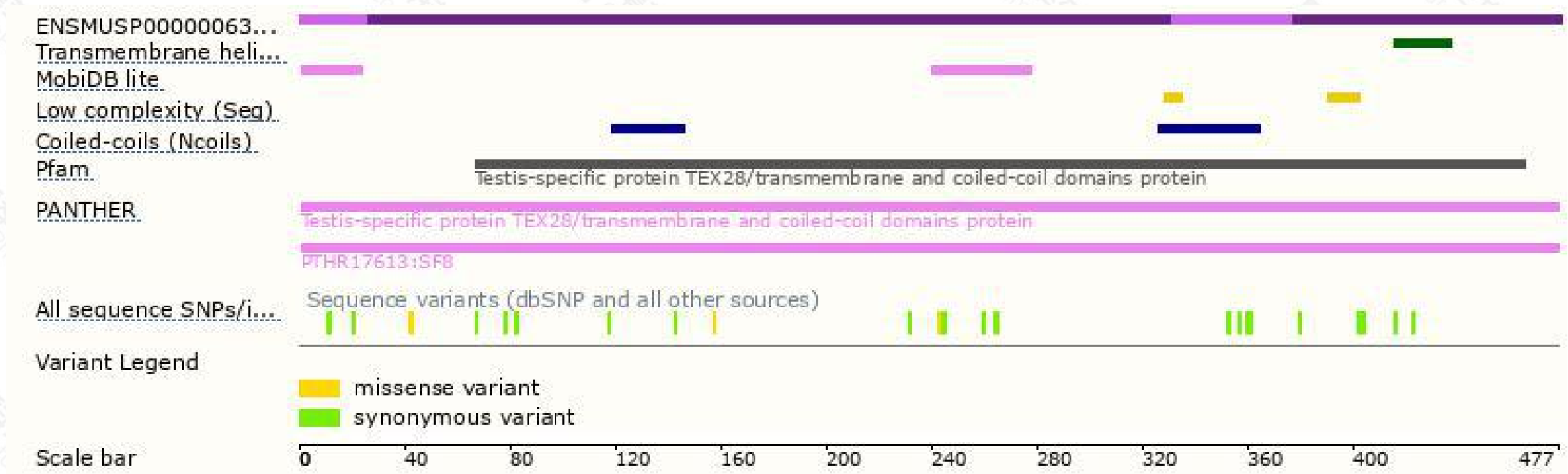
The strategy is based on the design of *Tmcc3-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.
Tel: 400-9660890

