

***Tomm70a* Cas9-CKO Strategy**

Designer:

Huimin Su

Reviewer:

Ruirui Zhang

Design Date:

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Project Overview

Project Name

Tomm70a

Project type

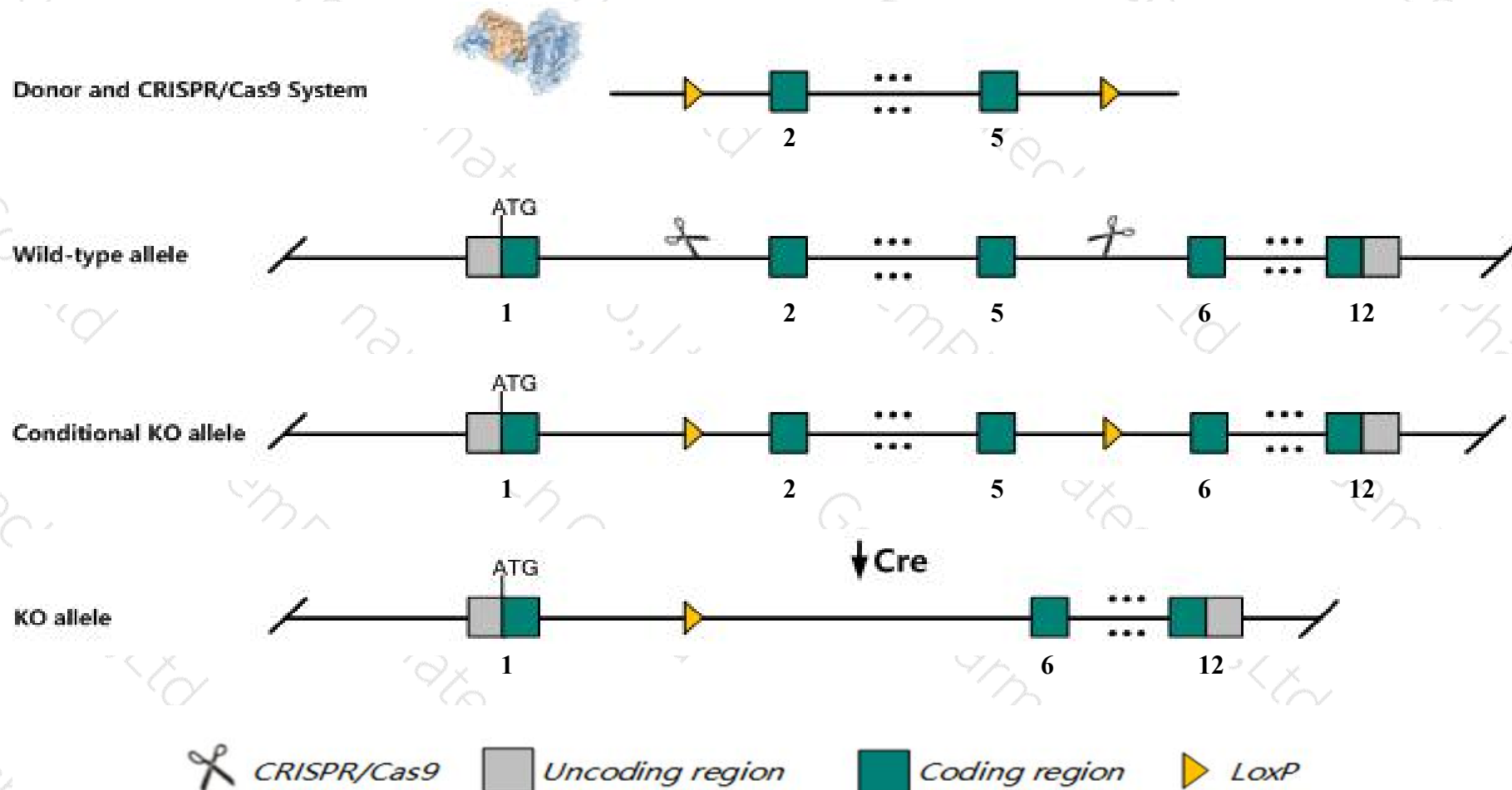
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tomm70a* gene. The schematic diagram is as follows:



- The *Tomm70a* gene has 3 transcripts. According to the structure of *Tomm70a* gene, exon2-exon5 of *Tomm70a-201* (ENSMUST00000166897.2) transcript is recommended as the knockout region. The region contains 560bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tomm70a* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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 flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Tomm70a* gene is located on the Chr16. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Tomm70a translocase of outer mitochondrial membrane 70A [*Mus musculus* (house mouse)]

Gene ID: 28185, updated on 9-Mar-2020

Summary

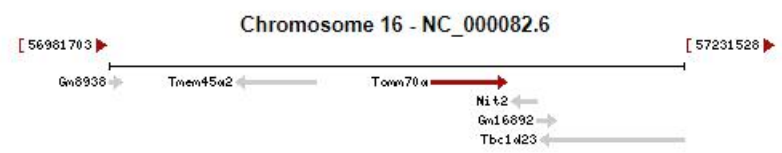
Official Symbol Tomm70a provided by [MGI](#)
Official Full Name translocase of outer mitochondrial membrane 70A provided by [MGI](#)
Primary source [MGI:MGI:106295](#)
See related [Ensembl:ENSMUSG00000022752](#)
Gene type protein coding
RefSeq status PROVISIONAL
Organism [Mus musculus](#)
Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as Tom70; Tomm70; D16lum22; D16lum22e; mKIAA0719; D16Wsu109e; 2610044B22Rik
Expression Ubiquitous expression in CNS E18 (RPKM 30.1), CNS E11.5 (RPKM 26.0) and 28 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 16 C1.1; 16 34.22 cM [See Tomm70a in Genome Data Viewer](#)

Exon count: 12

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	16	NC_000082.6 (57121714..57154530)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	16	NC_000082.5 (57121827..57154643)

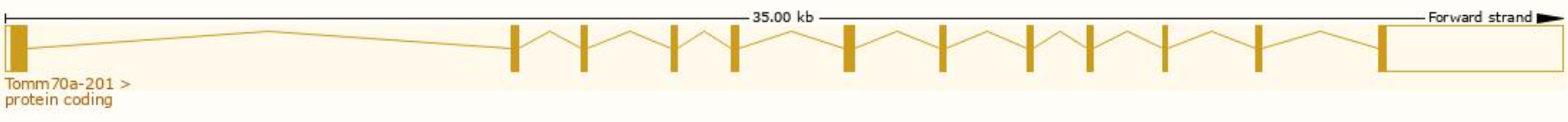


Transcript information (Ensembl)

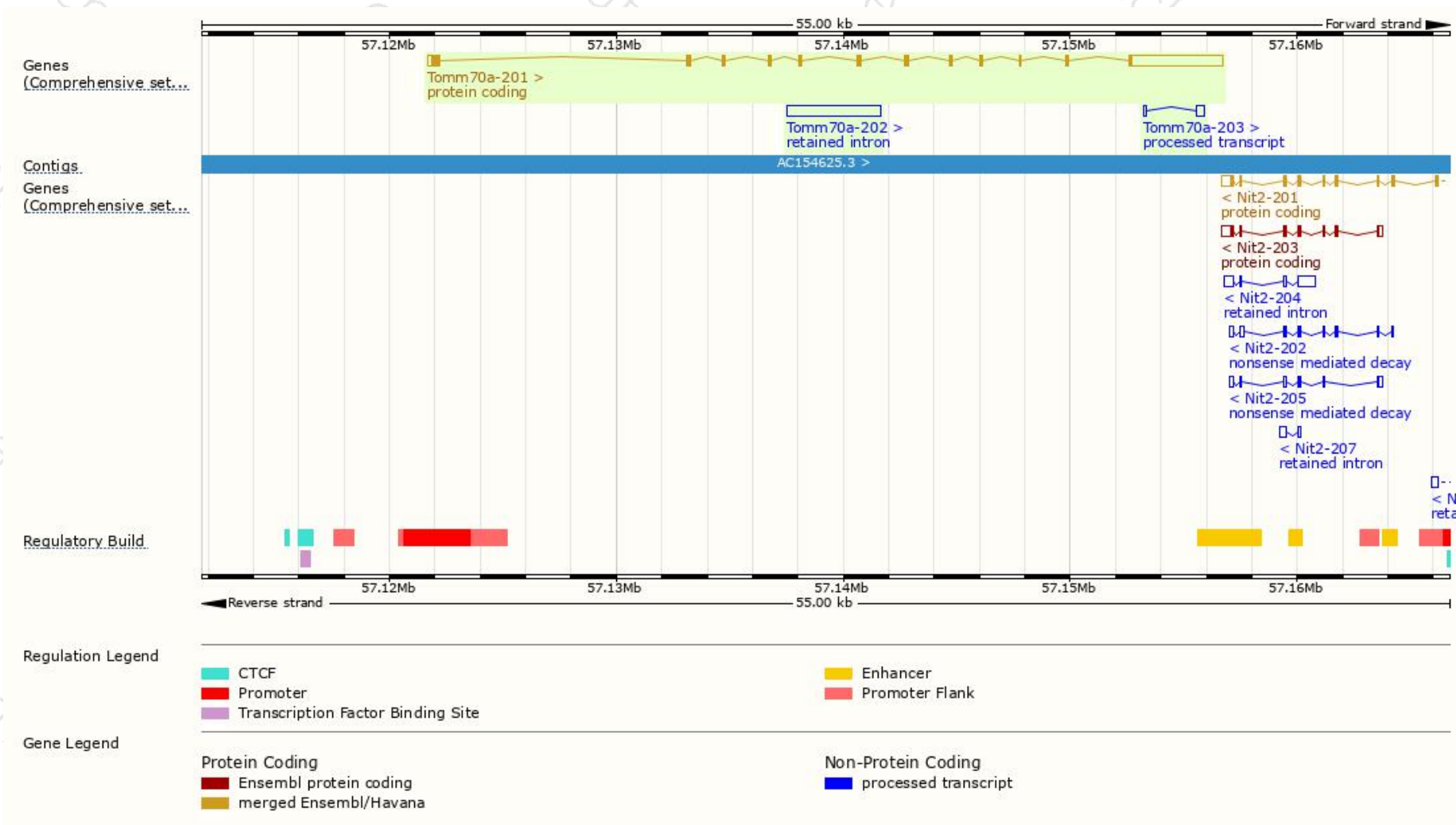
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tomm70a-201	ENSMUST00000166897.2	5964	611aa	Protein coding	CCDS28227	Q9CZW5	TSL:1 GENCODE basic APPRIS P1
Tomm70a-203	ENSMUST00000231901.1	429	No protein	Processed transcript	-	-	-
Tomm70a-202	ENSMUST00000231298.1	4170	No protein	Retained intron	-	-	-

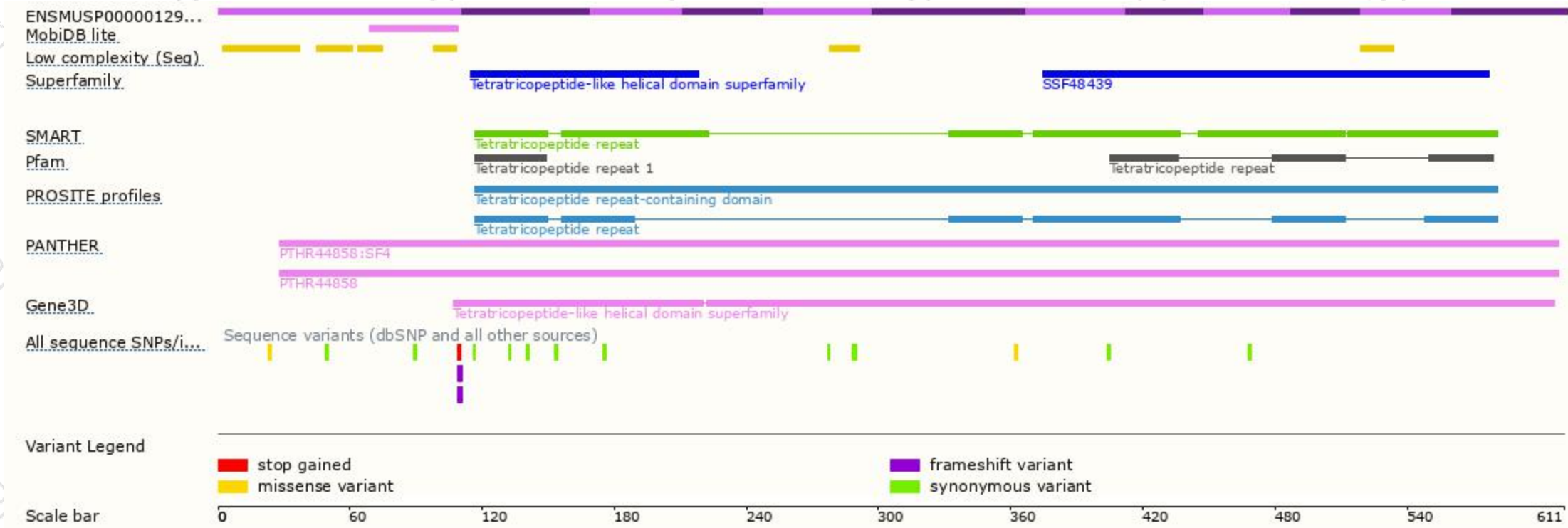
The strategy is based on the design of *Tomm70a-201* transcript, the transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

