Tomm70a Cas9-KO Strategy

Designer: Huimin Su

Reviewer: Ruirui Zhang

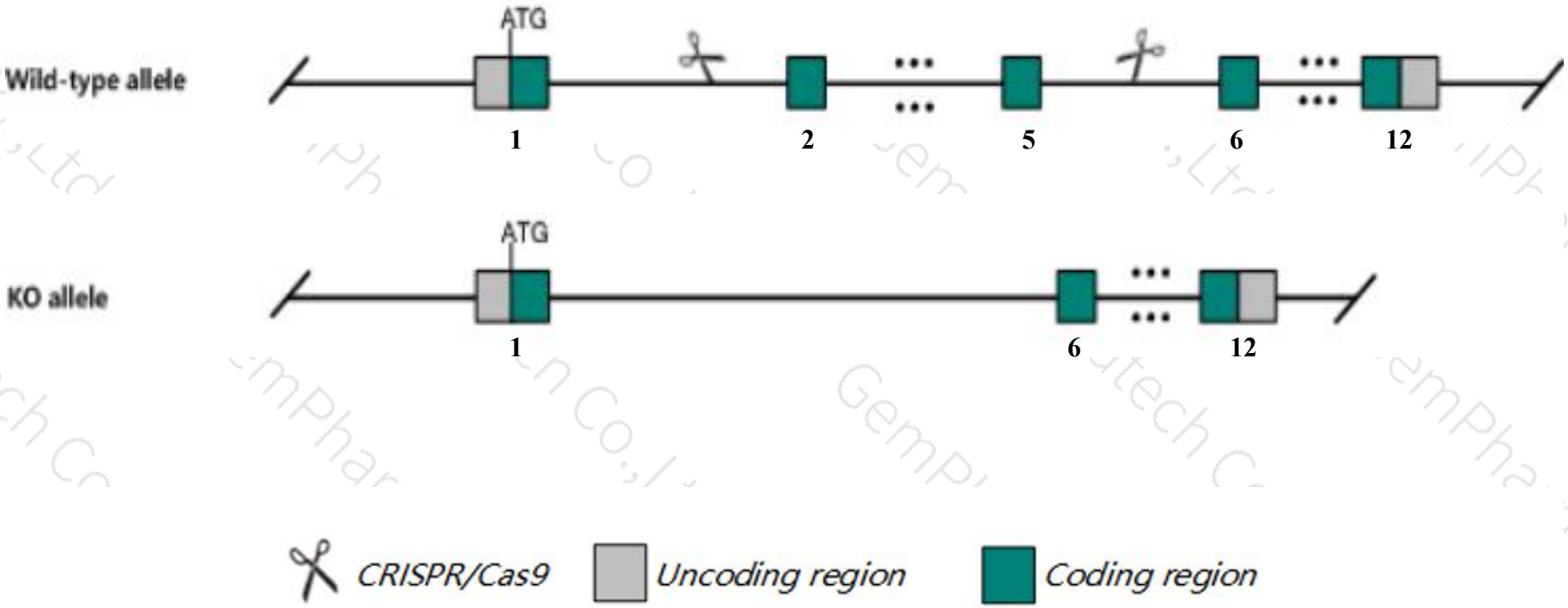
Design Date: 2020-3-12

Project Overview

Project Name	***Tomm70a***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

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



Technical routes

➢ 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 syste

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 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

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; D16Ium22; D16Ium22e; 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

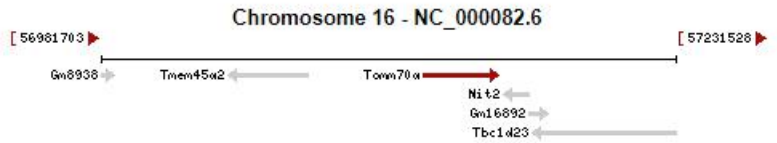
Genomic context

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)

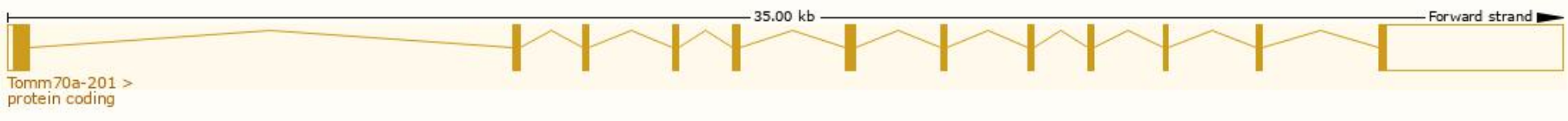


Transcript information（Ensembl）

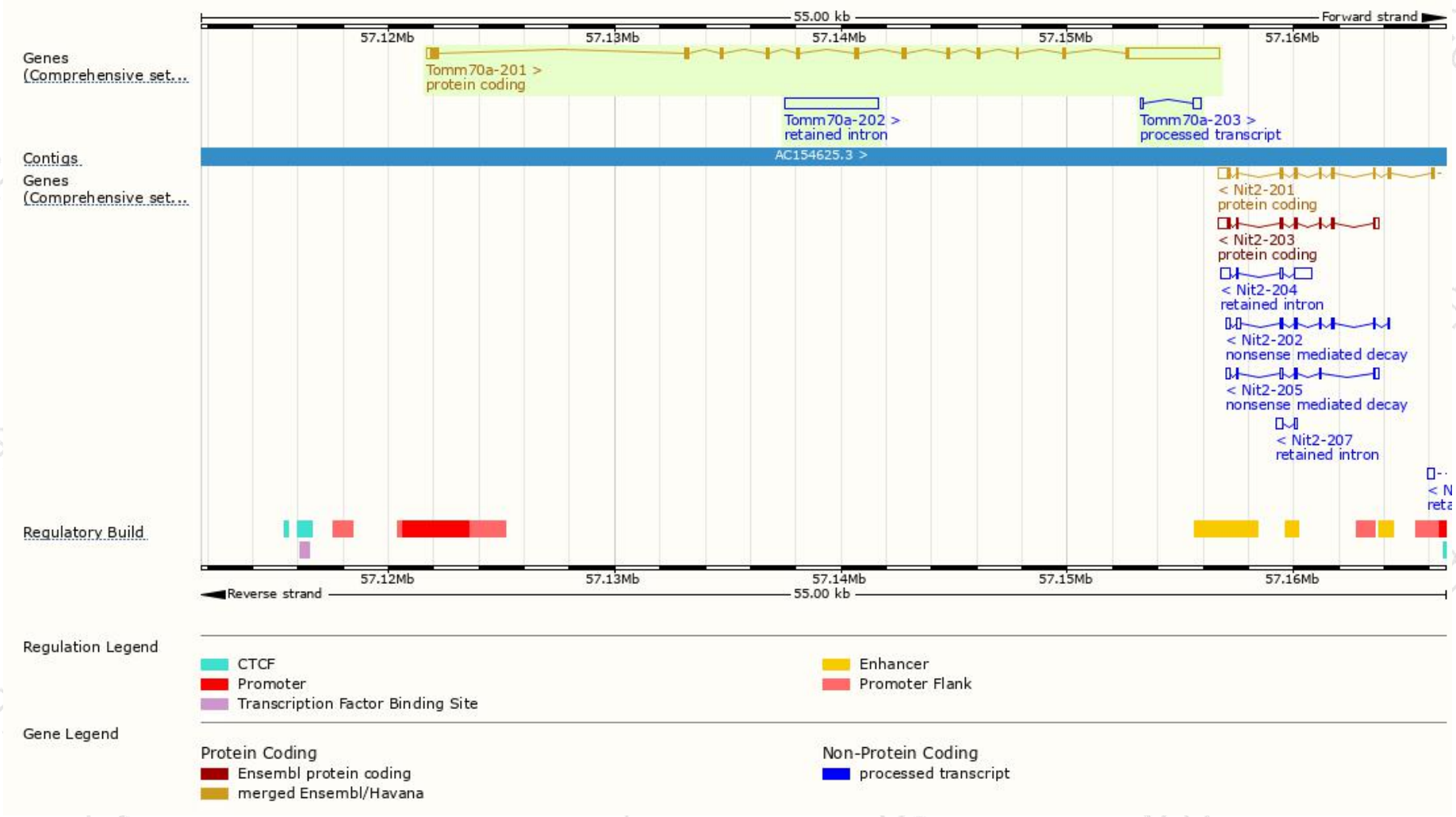
The gene has 3 transcripts,all transcripts are shown below:

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	-	-	-

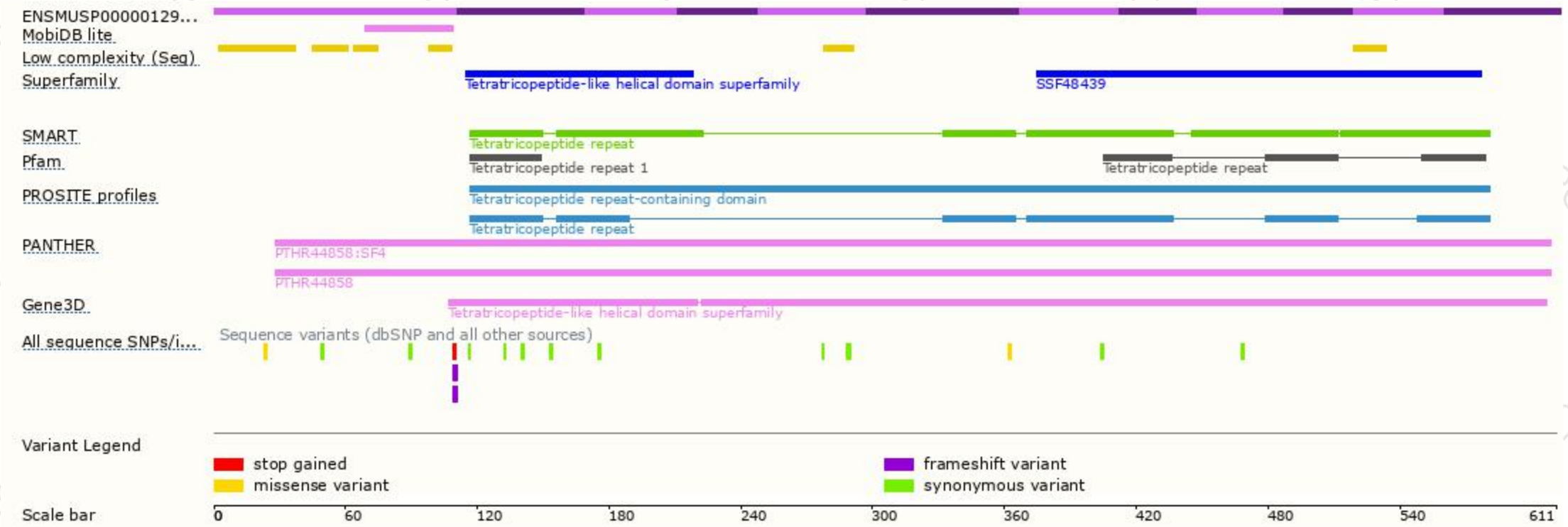
The strategy is based on the design of *Tomm70a-201* transcript, the transcription is shown below



Genomic location distribution



Protein domain



集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd