Tomm7 Cas9-CKO Strategy

Designer: **Lingyan Wu**

Reviewer **Longyun Hu**

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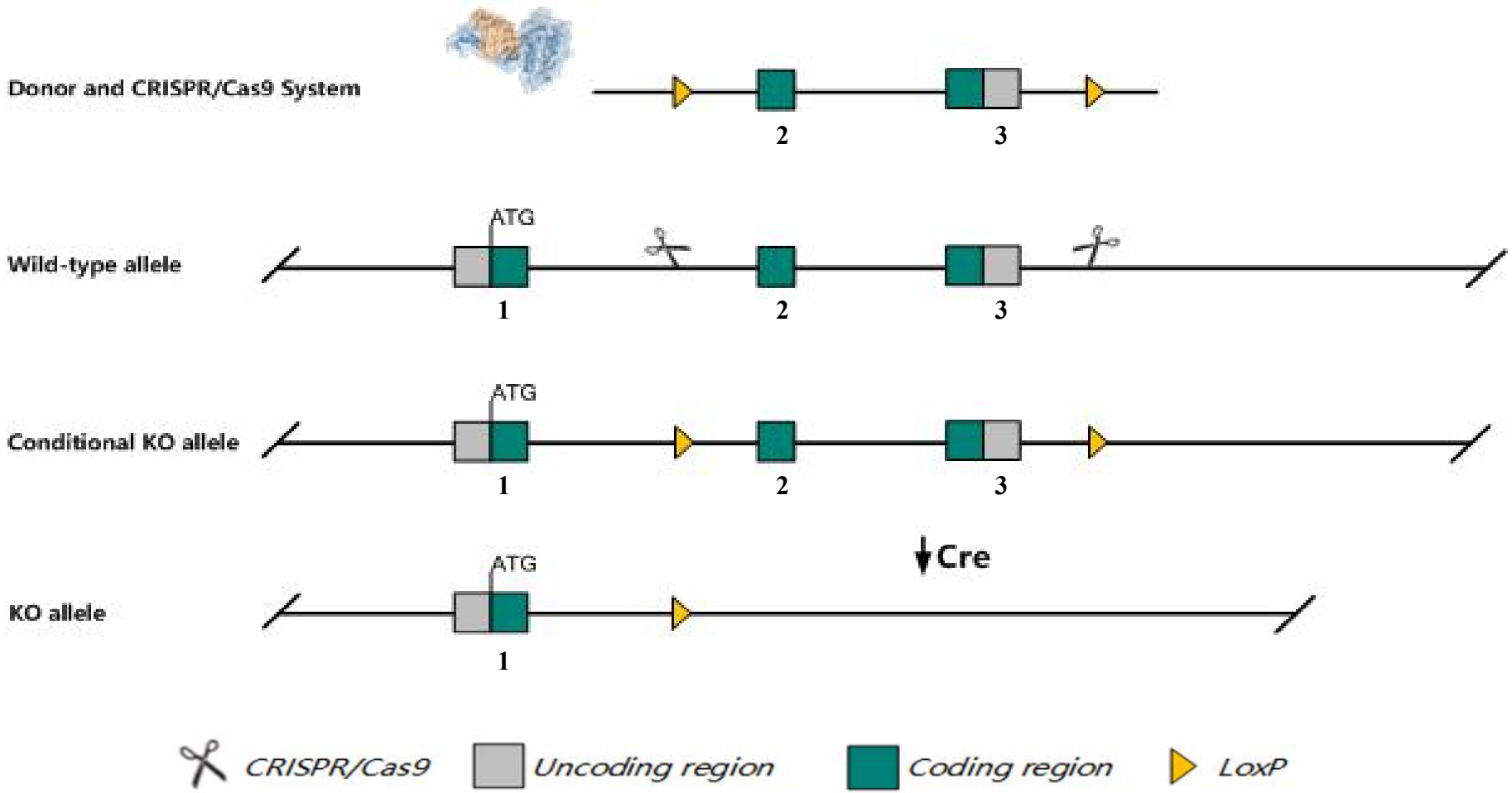
Project Overview

Project Name	***Tomm7***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tomm7* gene. The schematic diagram is as follows:



Technical routes

The *Tomm7* gene has 1 transcript. According to the structure of *Tomm7* gene, exon2-exon3 of *Tomm7-201* (ENSMUST00000030851.6) transcript is recommended as the knockout region.The region contains 65bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Tomm7* 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 *Tomm7* gene is located on the Chr5. 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

集萃药康 GemPharmatech

Tomm7 translocase of outer mitochondrial membrane 7 [Mus musculus (house mouse)]

Gene ID: 66169, updated on 31-Jan-2019

Summary

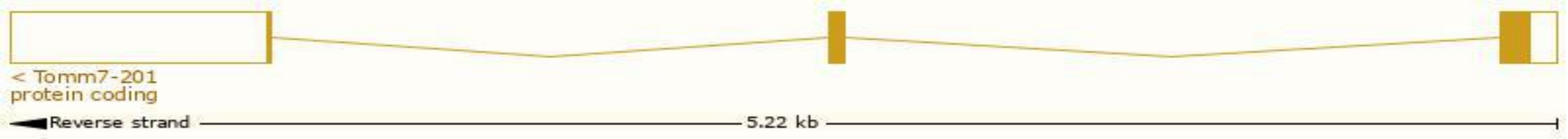
Official Symbol	Tomm7 provided by MGI
Official Full Name	translocase of outer mitochondrial membrane 7 provided by MGI
Primary source	MGI:MGI:1913419
See related	Ensembl:ENSMUSG00000028998
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110020J08Rik, AW047273, Tom7
Expression	Ubiquitous expression in testis adult (RPKM 42.3), CNS E11.5 (RPKM 41.4) and 28 other tissues See more
Orthologs	human all

Transcript information Ensembl

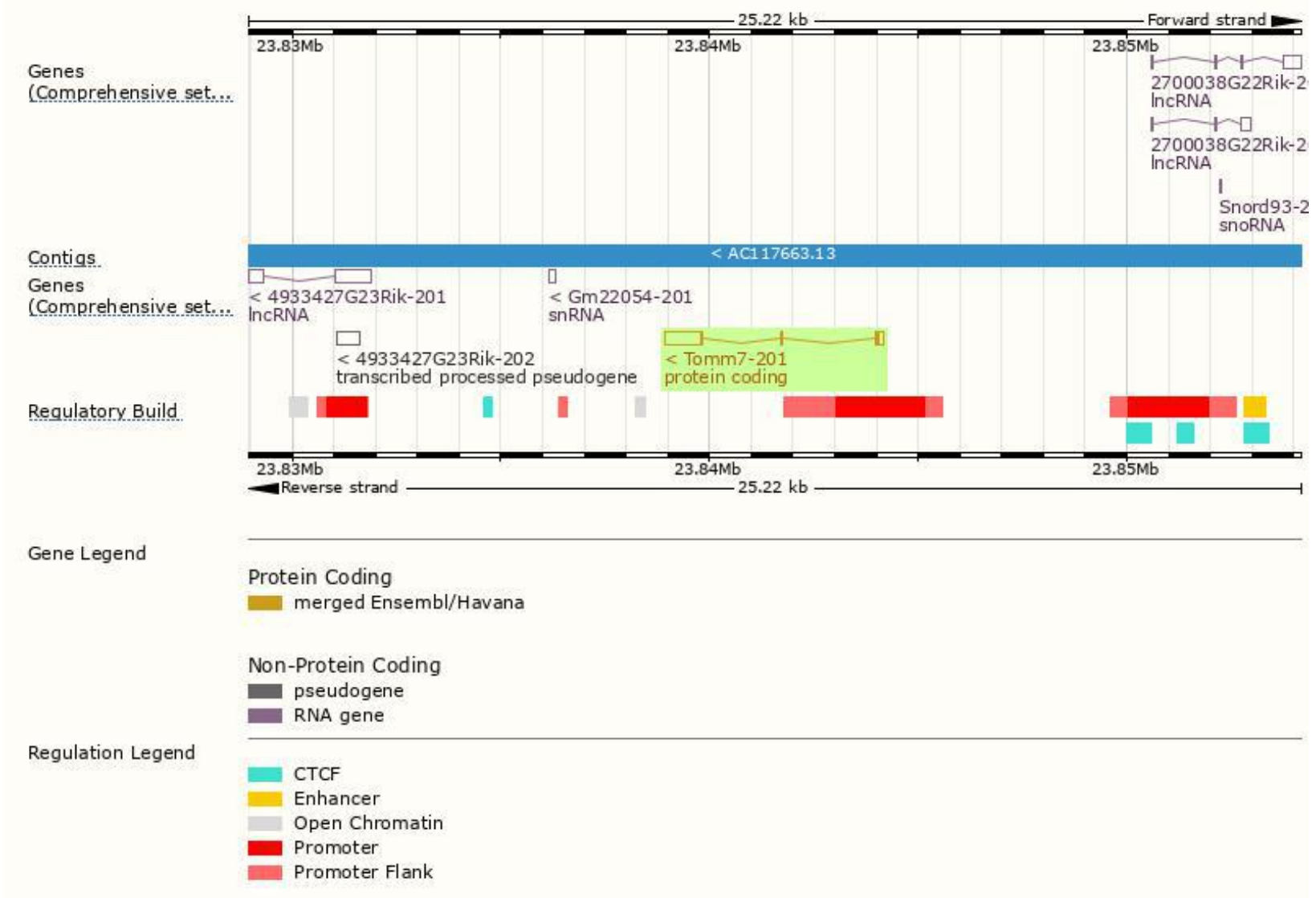
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tomm7-201	ENSMUST00000030851.6	1125	55aa	Protein coding	CCDS39026	Q9D173	TSL:1 GENCODE basic APPRIS P1

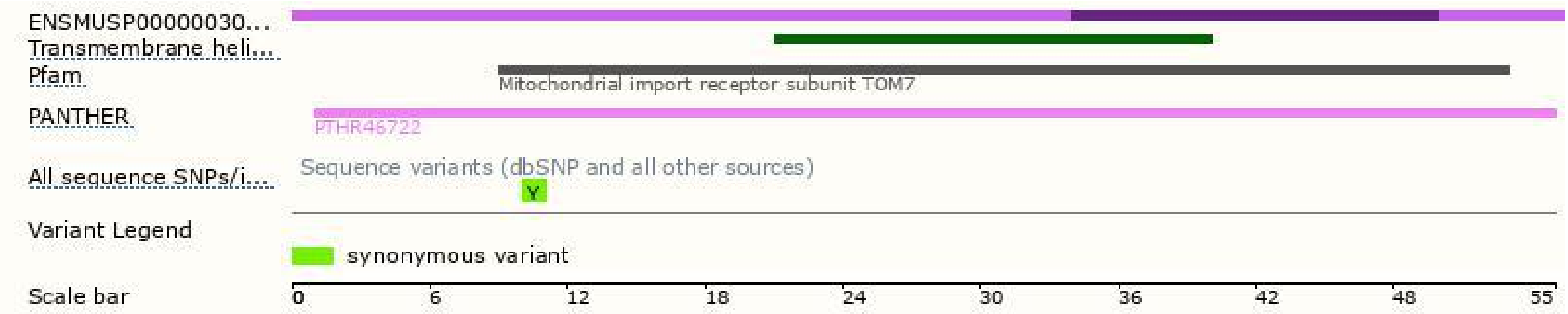
The strategy is based on the design of *Tomm7-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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