

***Tomm40* Cas9-KO Strategy**

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Project Overview

Project Name

Tomm40

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tomm40* gene. The schematic diagram is as follows:



- The *Tomm40* gene has 6 transcripts. According to the structure of *Tomm40* gene, exon2-exon3 of *Tomm40-201* (ENSMUST00000032555.9) transcript is recommended as the knockout region. The region contains 161bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tomm40* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Tomm40* gene is located on the Chr7. 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.
- Knockout the region may affect the 5 terminal regulation function of *Gm20512* gene.
- 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)

Tomm40 translocase of outer mitochondrial membrane 40 [*Mus musculus* (house mouse)]

Gene ID: 53333, updated on 12-Aug-2019

Summary

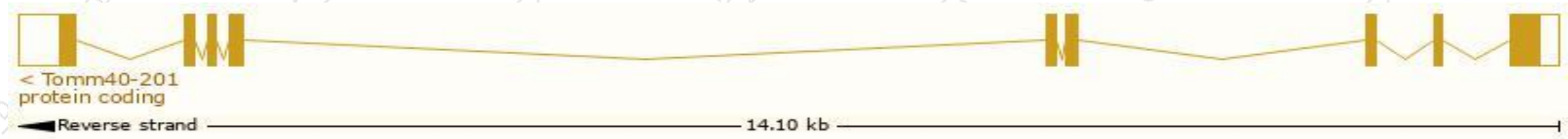
Official Symbol	Tomm40 provided by MGI
Official Full Name	translocase of outer mitochondrial membrane 40 provided by MGI
Primary source	MGI:MGI:1858259
See related	Ensembl:ENSMUSG000000002984
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Mom35; Tom40; AW539759
Expression	Ubiquitous expression in adrenal adult (RPKM 63.6), ovary adult (RPKM 47.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

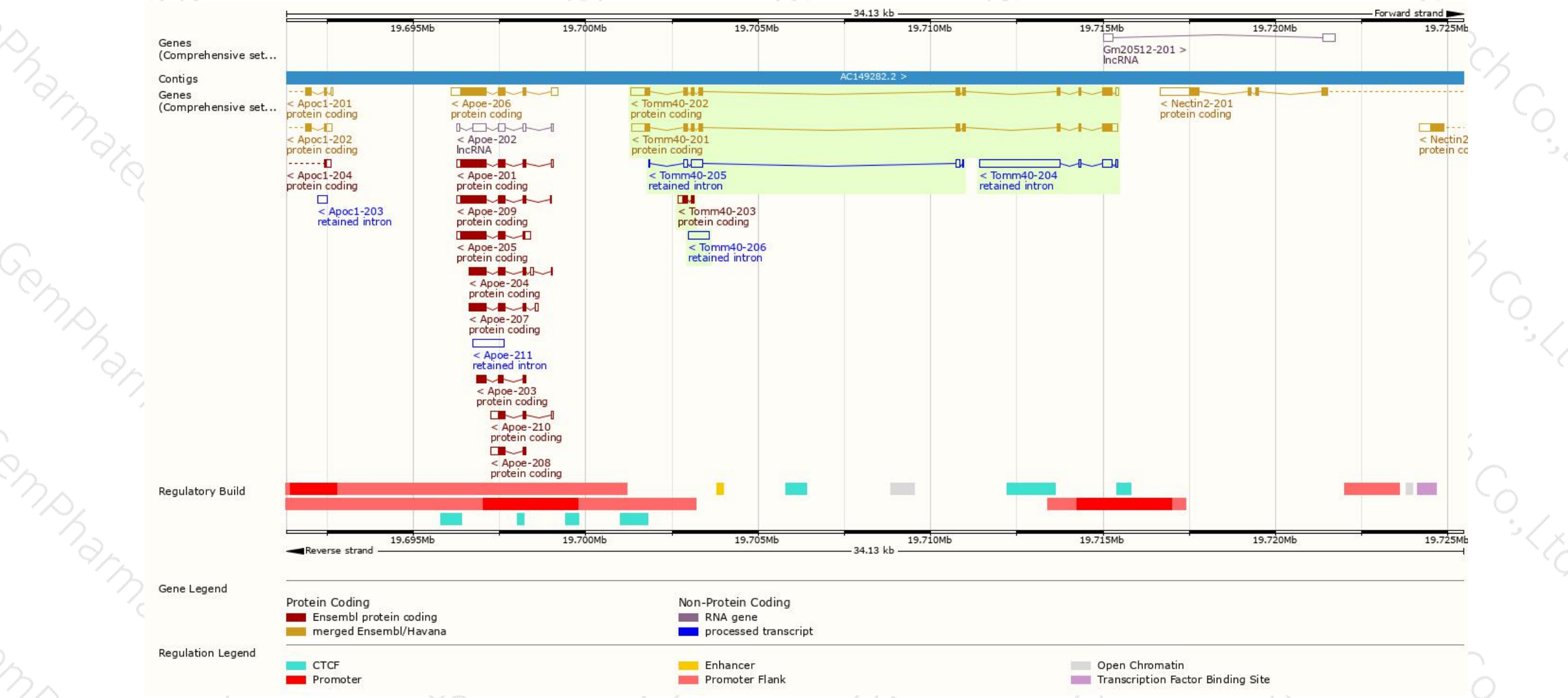
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tomm40-201	ENSMUST00000032555.9	1646	361aa	Protein coding	CCDS52062	Q9QYA2	TSL:1 GENCODE basic APPRIS P1
Tomm40-202	ENSMUST00000093552.11	1577	361aa	Protein coding	CCDS52062	Q9QYA2	TSL:1 GENCODE basic APPRIS P1
Tomm40-203	ENSMUST00000172705.1	361	73aa	Protein coding	-	G3UY77	CDS 5' incomplete TSL:2
Tomm40-204	ENSMUST00000173966.1	2766	No protein	Retained intron	-	-	TSL:2
Tomm40-205	ENSMUST00000174476.1	620	No protein	Retained intron	-	-	TSL:3
Tomm40-206	ENSMUST00000208286.1	600	No protein	Retained intron	-	-	TSL:NA

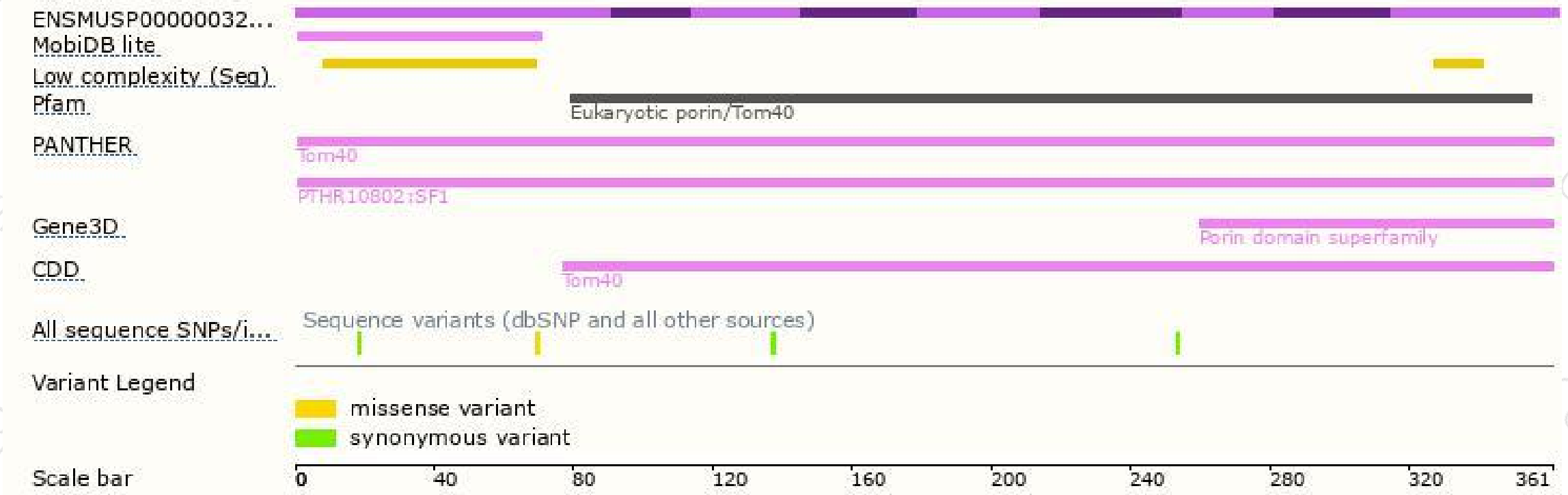
The strategy is based on the design of *Tomm40-201* transcript,The transcription is shown below



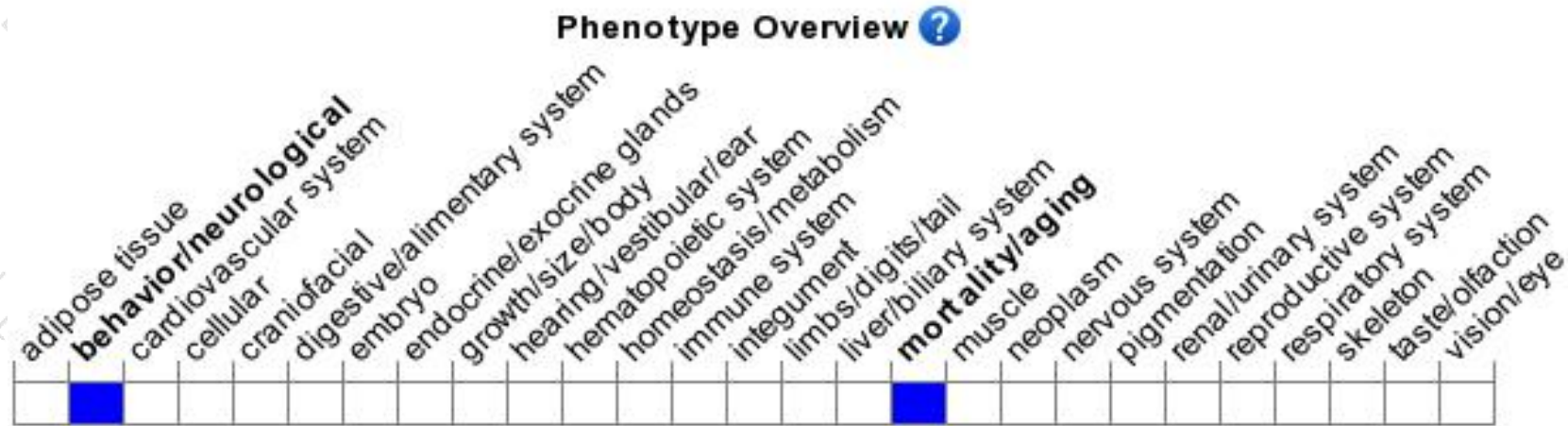
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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