

***Ttll8* Cas9-KO Strategy**

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Project Overview

Project Name

Ttll8

Project type

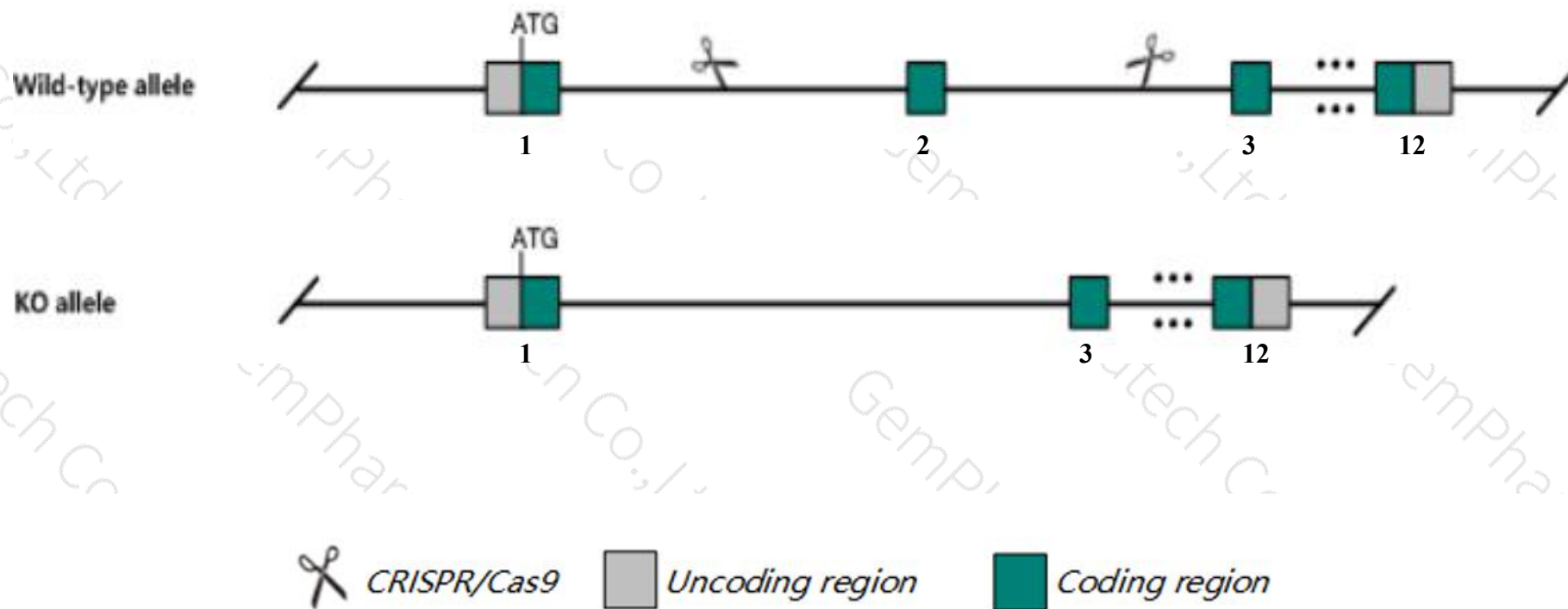
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ttll8* gene. The schematic diagram is as follows:



- The *Tll8* gene has 4 transcripts. According to the structure of *Tll8* gene, exon2 of *Tll8-201*(ENSMUST00000109371.7) transcript is recommended as the knockout region. The region contains 92bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tll8* 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 *Ttll8* gene is located on the Chr15. 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.
- Transcript *Ttll8*-202 may not be affected.
- 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)

Ttll8 tubulin tyrosine ligase-like family, member 8 [Mus musculus (house mouse)]

Gene ID: 239591, updated on 13-Mar-2020

Summary



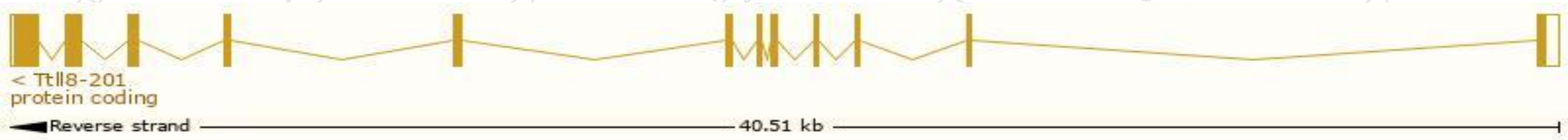
Official Symbol	Ttll8 provided by MGI
Official Full Name	tubulin tyrosine ligase-like family, member 8 provided by MGI
Primary source	MGI:MGI:1922902
See related	Ensembl:ENSMUSG00000022388
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700019P01Rik, 4933401B17
Expression	Restricted expression toward testis adult (RPKM 37.7) See more
Orthologs	human all

Transcript information (Ensembl)

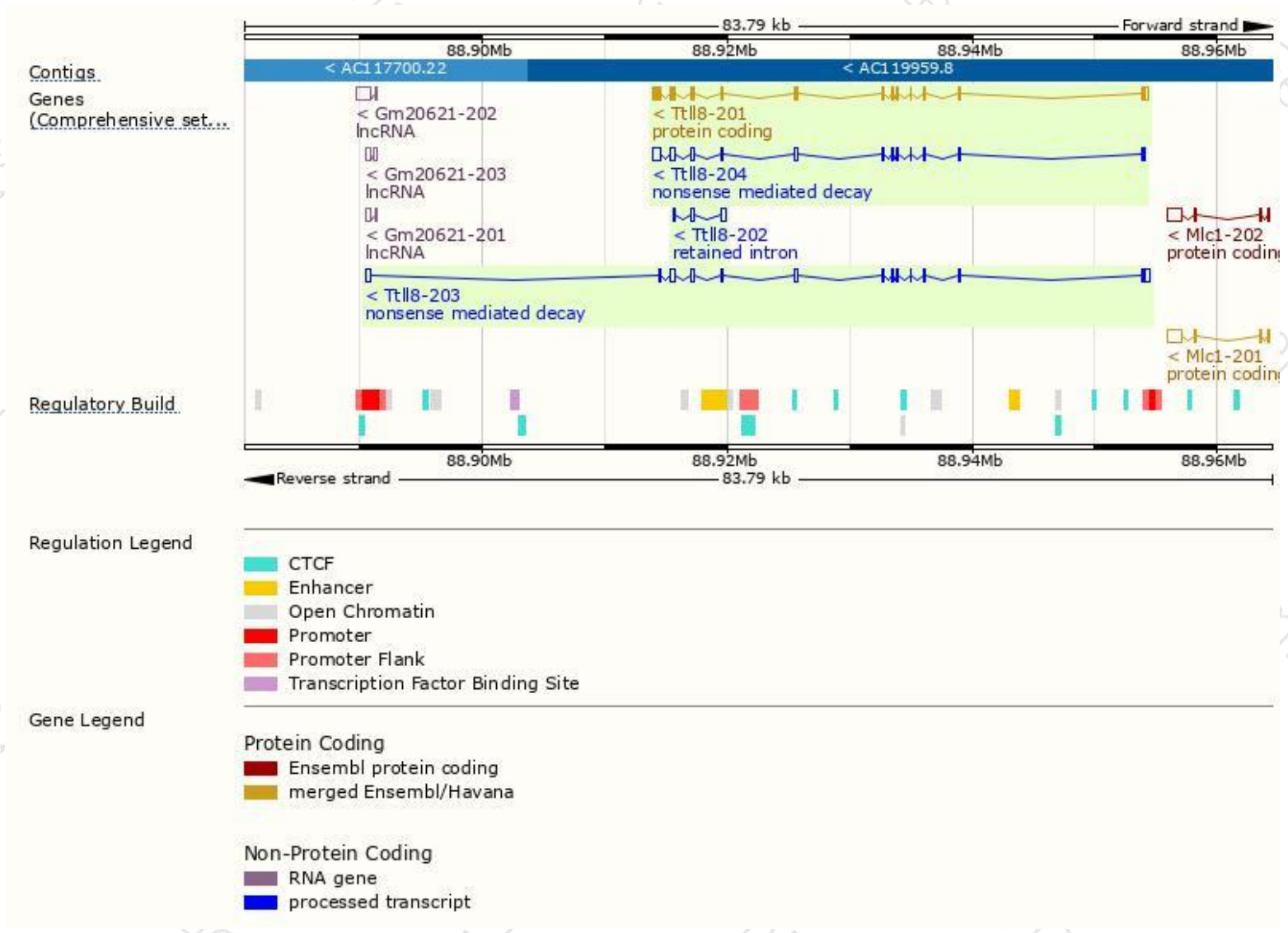
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ttll8-201	ENSMUST00000109371.7	2968	832aa	Protein coding	CCDS27735	A4Q9F1	TSL:1 GENCODE basic APPRIS P1
Ttll8-203	ENSMUST00000177180.7	2719	194aa	Nonsense mediated decay	-	H3BKG4	TSL:1
Ttll8-204	ENSMUST00000177254.7	2556	189aa	Nonsense mediated decay	-	H3BJ58	CDS 5' incomplete TSL:1
Ttll8-202	ENSMUST00000137740.1	690	No protein	Retained intron	-	-	TSL:2

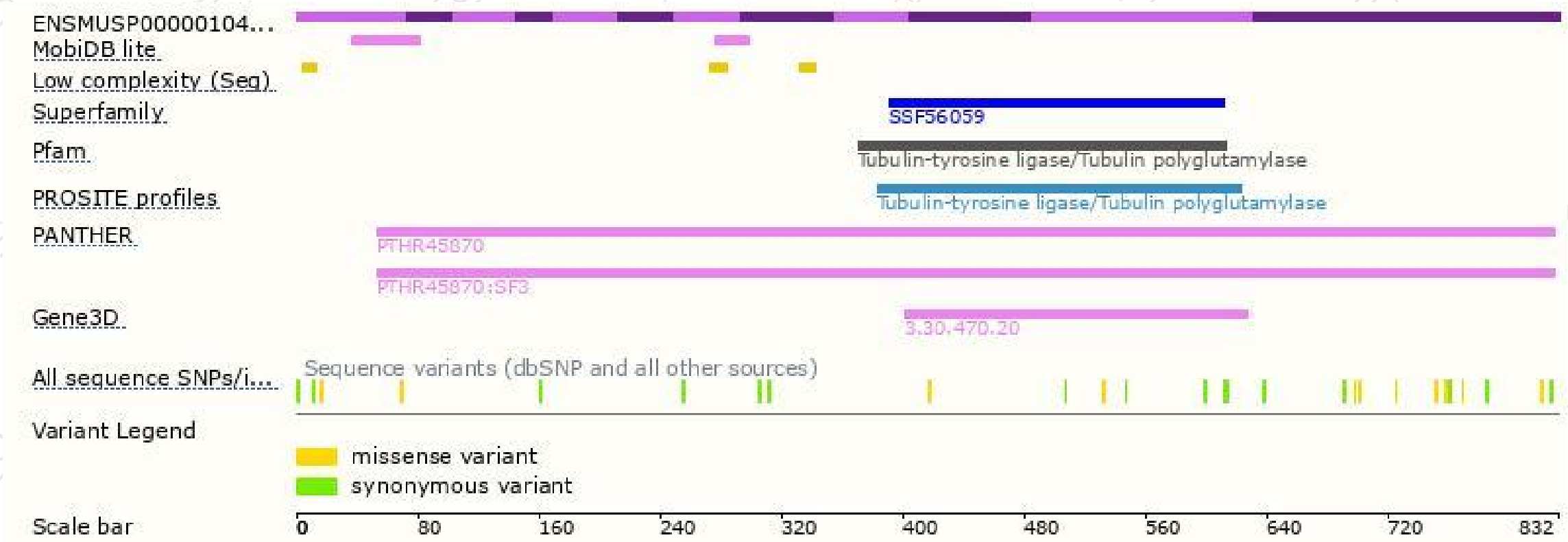
The strategy is based on the design of *Ttll8-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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