

Mul1 Cas9-KO Strategy

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Project Overview

Project Name

Mul1

Project type

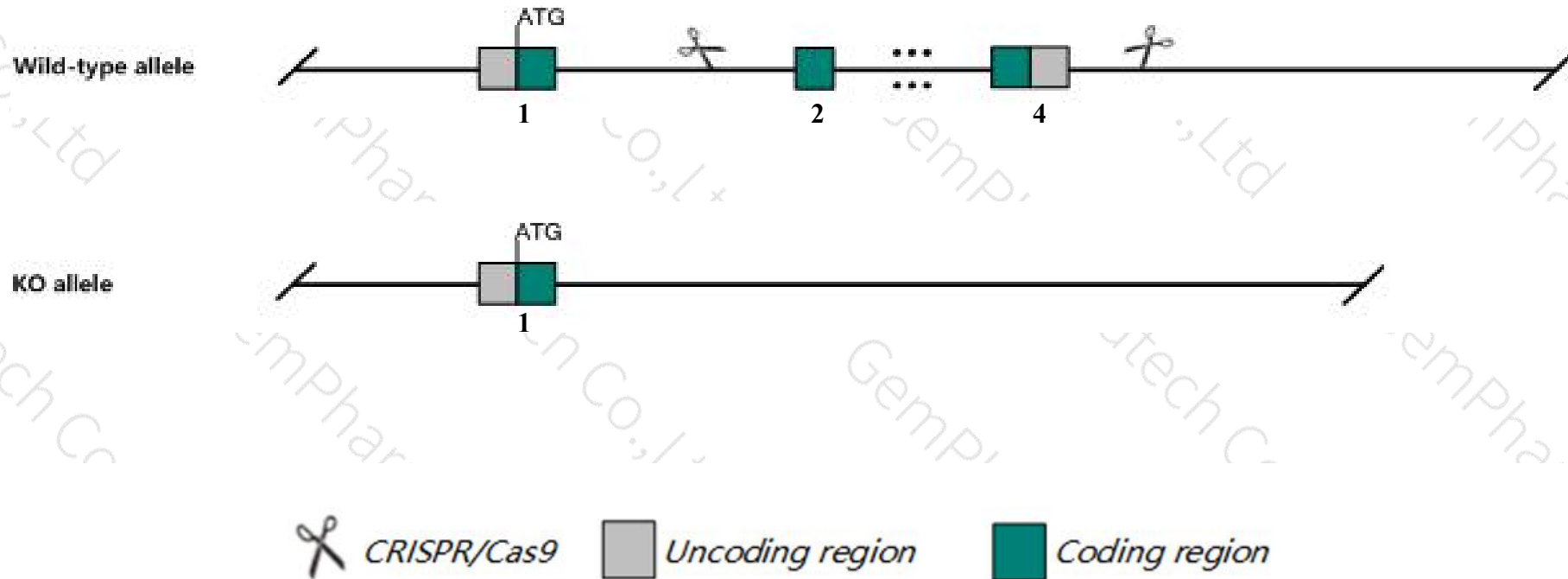
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Mull* gene has 3 transcripts. According to the structure of *Mull* gene, exon2-exon4 of *Mull-201* (ENSMUST00000044058.10) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Mull* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Mull* gene is located on the Chr4. 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)

Mul1 mitochondrial ubiquitin ligase activator of NFKB 1 [Mus musculus (house mouse)]

Gene ID: 68350, updated on 5-Feb-2019

Summary



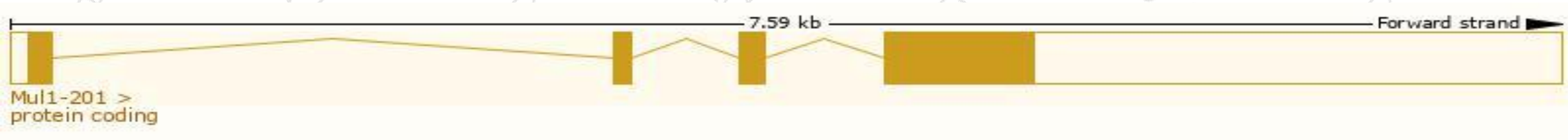
Official Symbol	Mul1 provided by MGI
Official Full Name	mitochondrial ubiquitin ligase activator of NFKB 1 provided by MGI
Primary source	MGI:MGI:1915600
See related	Ensembl:ENSMUSG00000041241
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	0610009K11Rik, AV000801, Gide
Expression	Ubiquitous expression in testis adult (RPKM 21.6), colon adult (RPKM 15.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

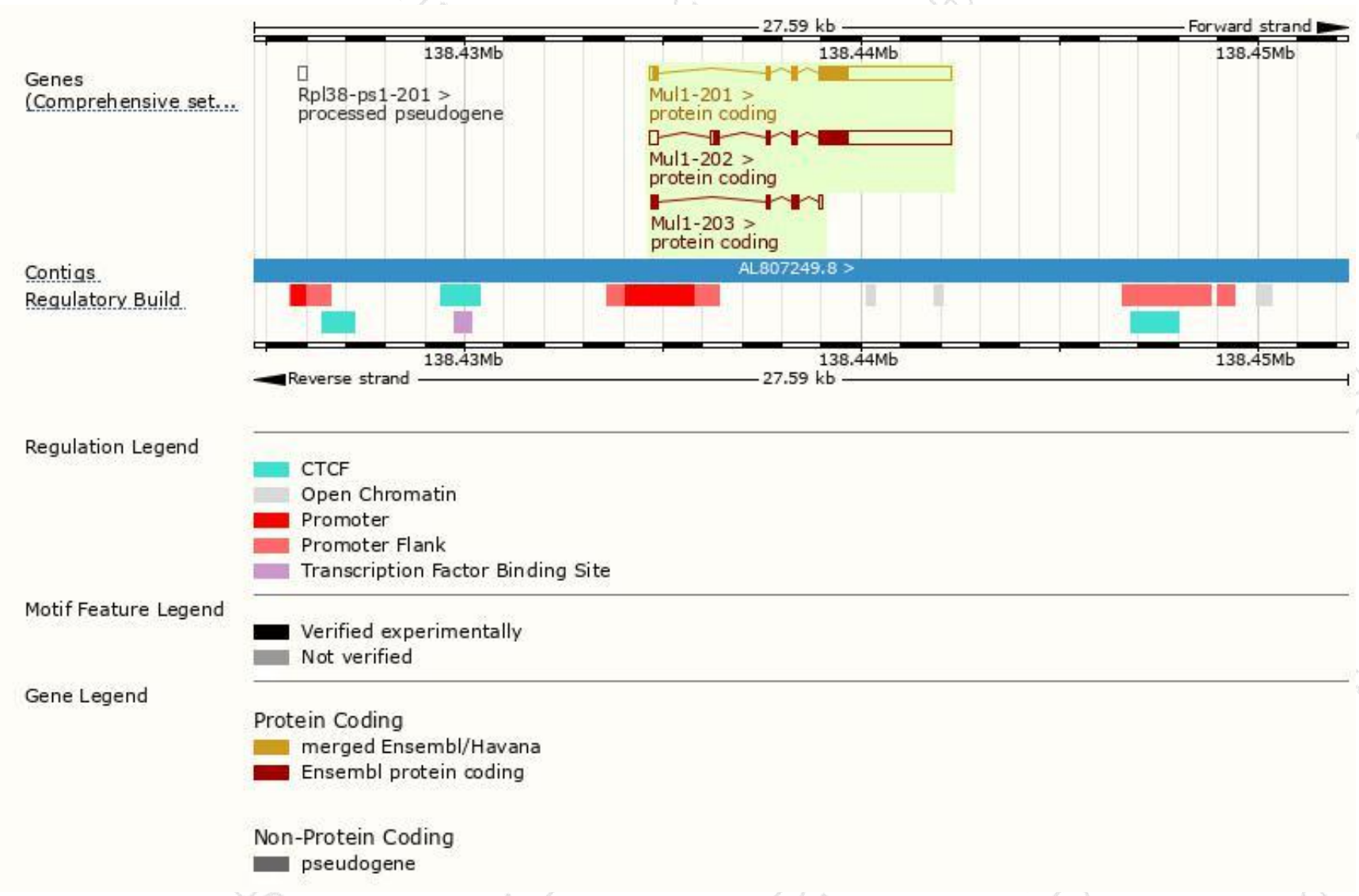
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Mu1-201	ENSMUST00000044058.10	3733	352aa	Protein coding	CCDS18828	Q8VCM5	TSL:1 GENCODE basic APPRIS P1
Mu1-202	ENSMUST00000105813.7	3944	347aa	Protein coding	-	Q8VCM5	TSL:5 GENCODE basic
Mu1-203	ENSMUST00000105815.1	473	123aa	Protein coding	-	Q8VCM5	TSL:3 GENCODE basic

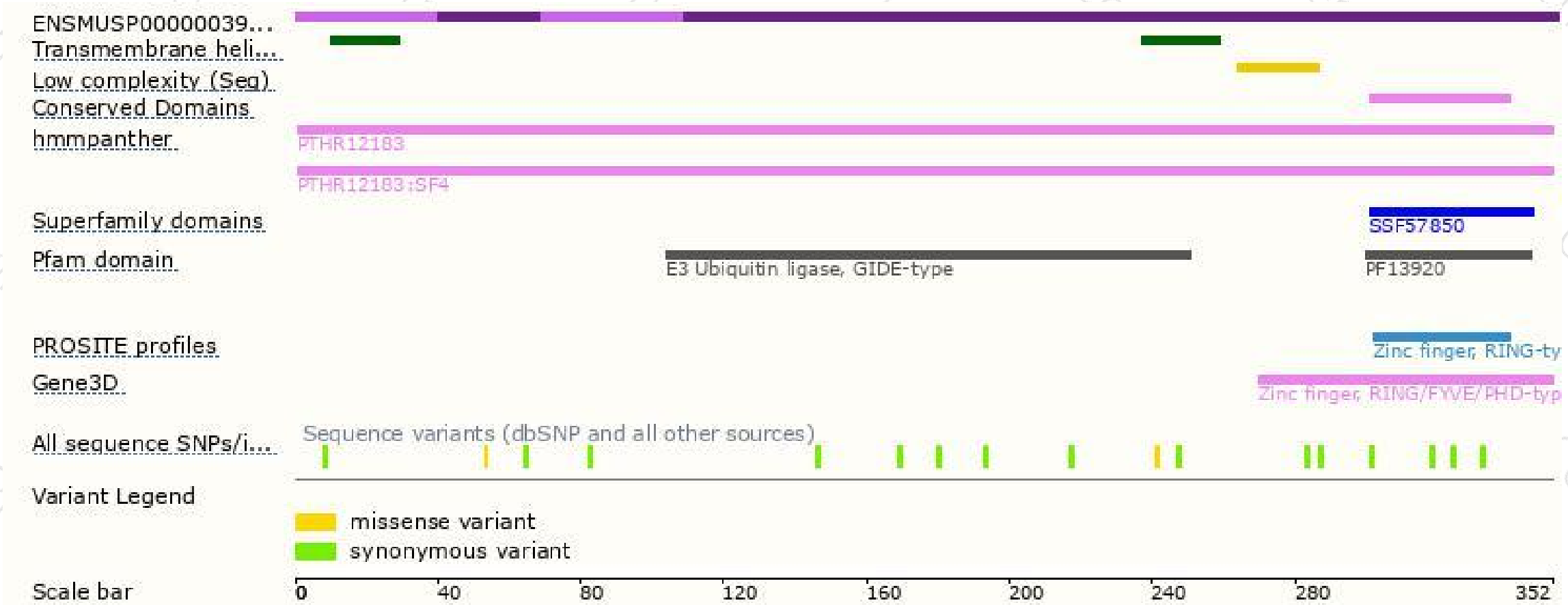
The strategy is based on the design of *Mu1-201* transcript,The transcription is shown below



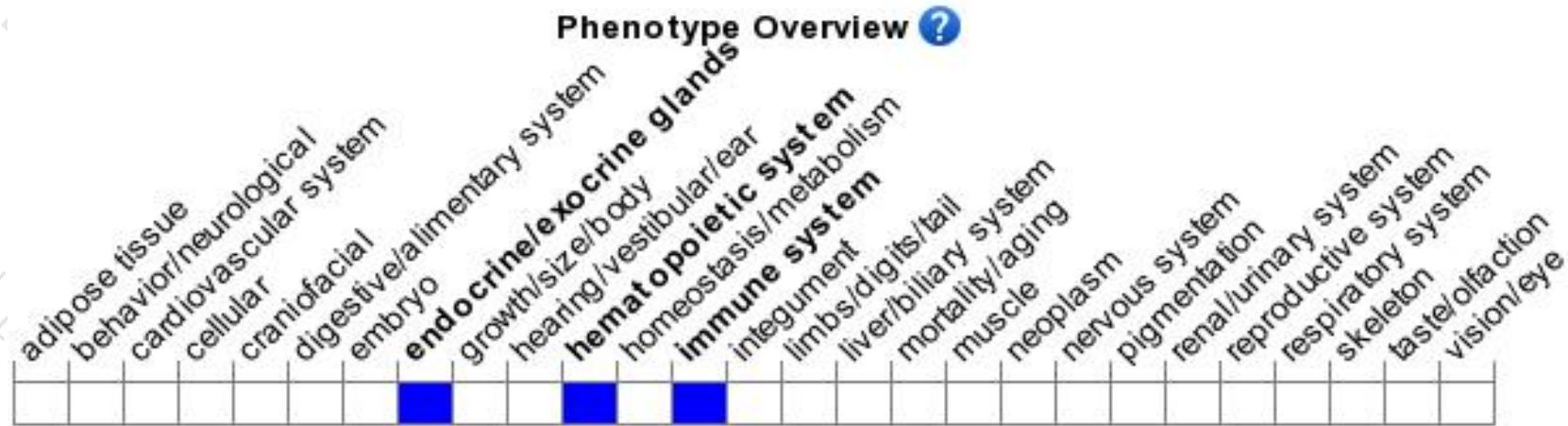
Genomic location distribution



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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