

Traf2 Cas9-KO Strategy

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Project Overview

Project Name

Traf2

Project type

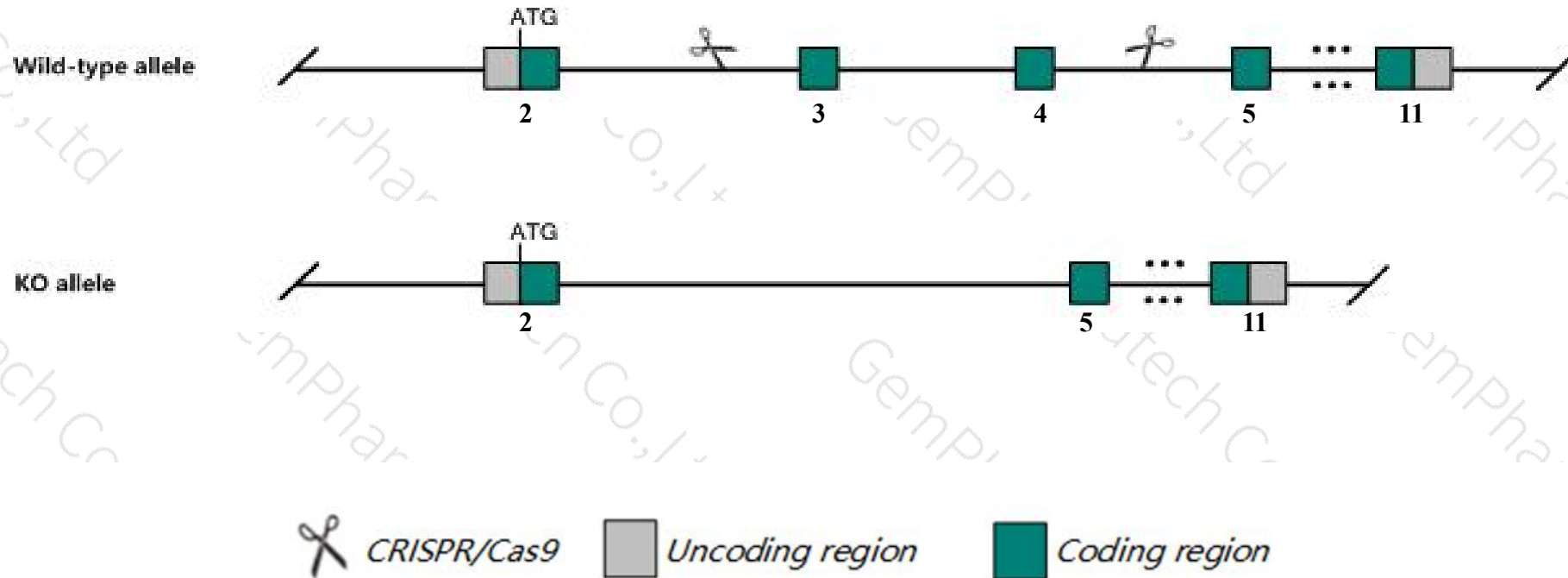
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Traf2* gene. The schematic diagram is as follows:



- The *Traf2* gene has 3 transcripts. According to the structure of *Traf2* gene, exon3-exon4 of *Traf2-201* (ENSMUST00000028311.12) transcript is recommended as the knockout region. The region contains 178bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Traf2* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Increased lethality is observed with homozygous null mice. Offspring are runted and exhibit atrophic thymii and spleens with reduced numbers of lymphocytes.
- The *Traf2* gene is located on the Chr2. 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)

Traf2 TNF receptor-associated factor 2 [Mus musculus (house mouse)]

Gene ID: 22030, updated on 5-Feb-2019

Summary



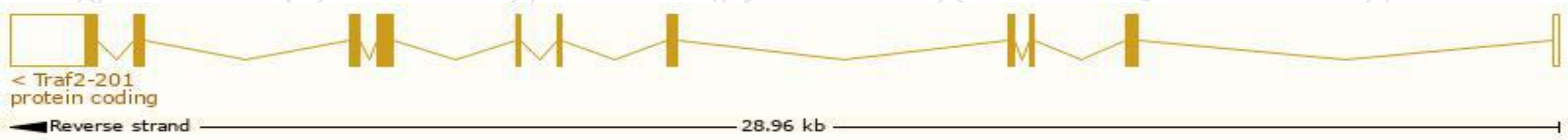
Official Symbol	Traf2 provided by MGI
Official Full Name	TNF receptor-associated factor 2 provided by MGI
Primary source	MGI:MGI:101835
See related	Ensembl:ENSMUSG000000026942
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI325259
Expression	Ubiquitous expression in thymus adult (RPKM 9.5), spleen adult (RPKM 6.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

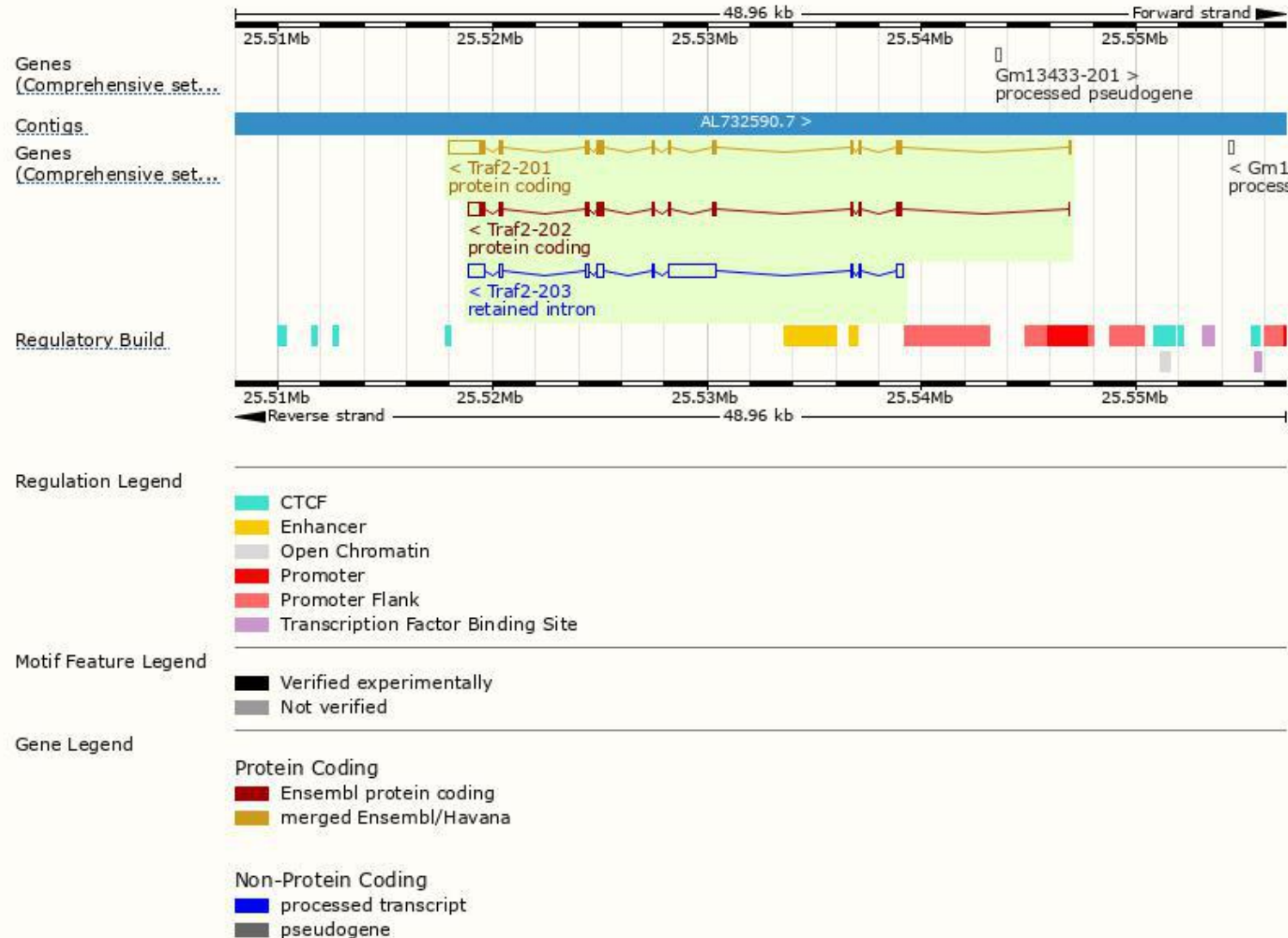
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Traf2-201	ENSMUST00000028311.12	3044	501aa	Protein coding	CCDS15779	P39429 Q3U8L1	TSL:1 GENCODE basic APPRIS P3
Traf2-202	ENSMUST00000114234.1	2151	508aa	Protein coding	CCDS71002	P39429	TSL:5 GENCODE basic APPRIS ALT2
Traf2-203	ENSMUST00000151742.1	4117	No protein	Retained intron	-	-	TSL:2

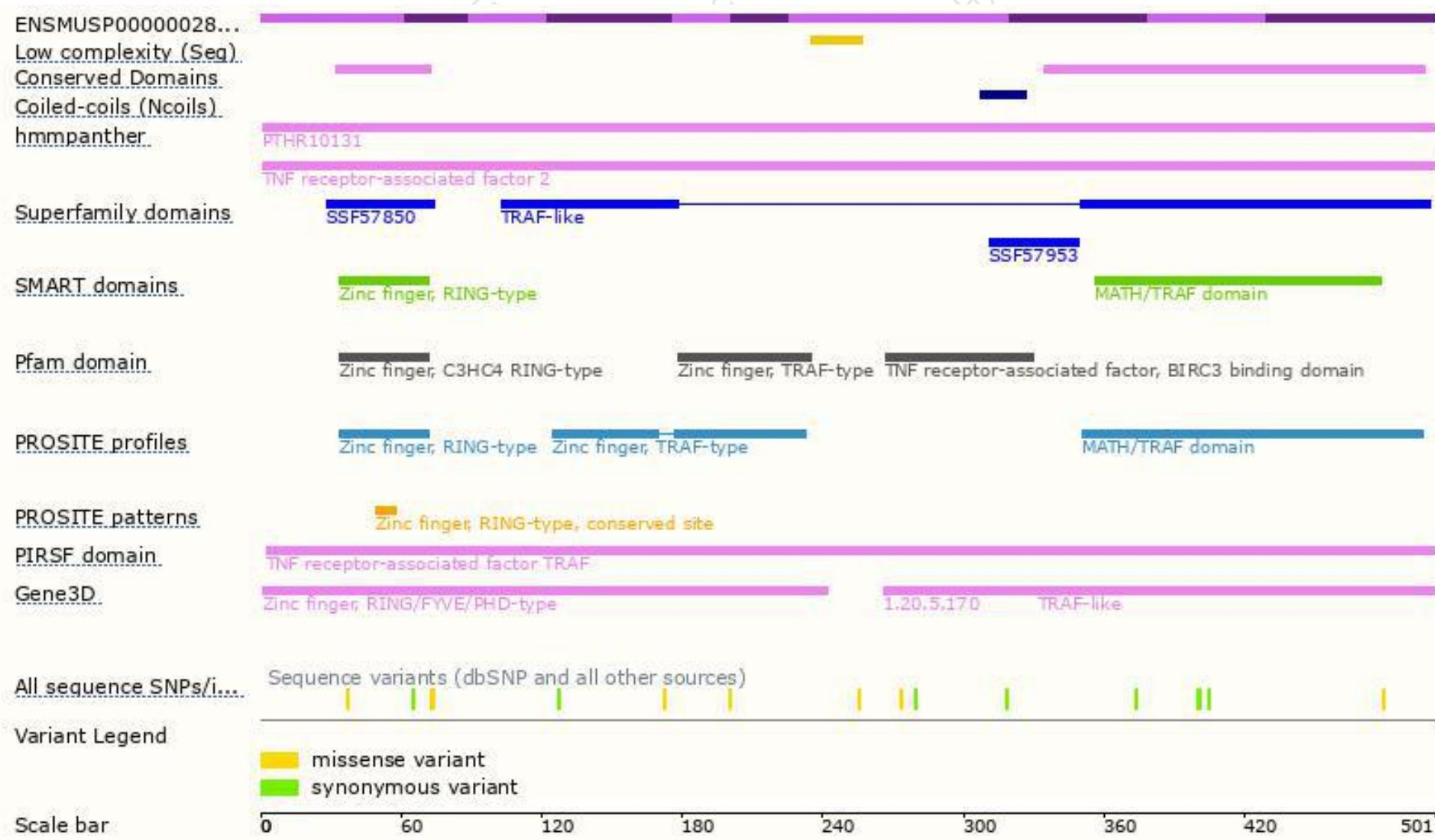
The strategy is based on the design of *Traf2-201* transcript,The transcription is shown below



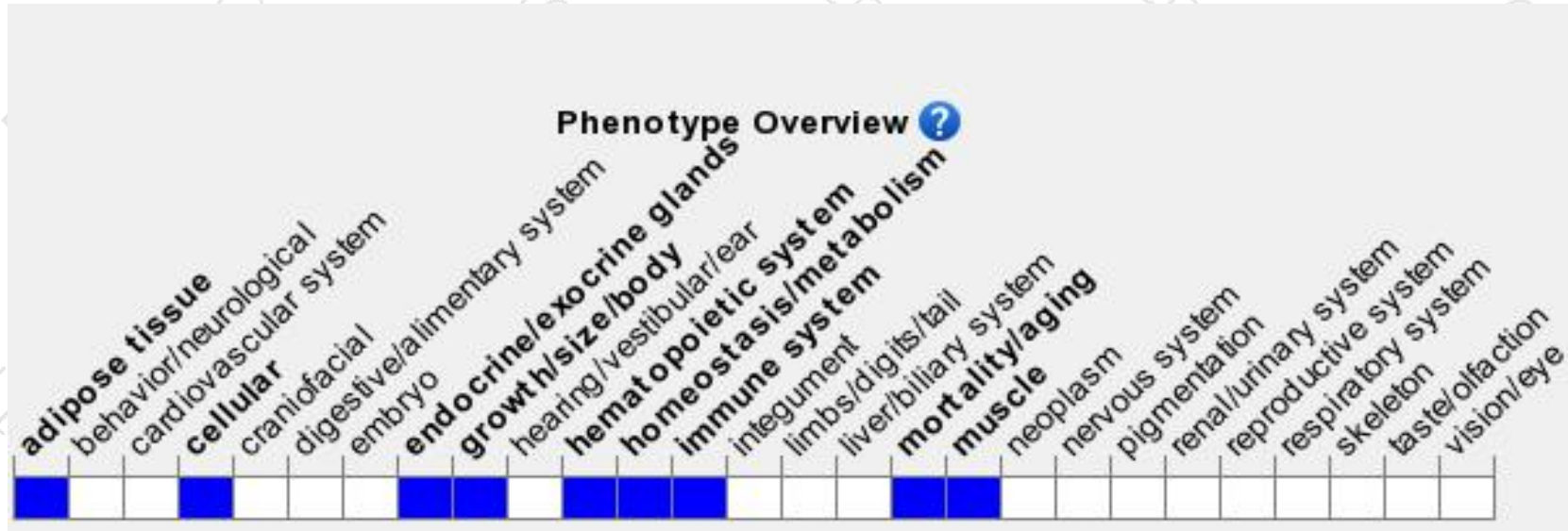
Genomic location distribution



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/>).

According to the existing MGI data, Increased lethality is observed with homozygous null mice. Offspring are runted and exhibit atrophic thymii and spleens with reduced numbers of lymphocytes.

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

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