

Tnfsf15 Cas9-KO Strategy

Designer:

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Design Date:

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Project Overview

Project Name

Tnfsf15

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tnfsf15* gene. The schematic diagram is as follows:



- The *Tnfsf15* gene has 1 transcript. According to the structure of *Tnfsf15* gene, exon2-exon3 of *Tnfsf15-201* (ENSMUST00000062246.6) transcript is recommended as the knockout region. The region contains 82bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tnfsf15* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygous targeted mutants display decreased clinical severity in experimental autoimmune encephalomyelitis (EAE) and collagen-induced arthritis.
- The *Tnfrsf15* 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)

Tnfsf15 tumor necrosis factor (ligand) superfamily, member 15 [Mus musculus (house mouse)]

Gene ID: 326623, updated on 22-Mar-2019

Summary



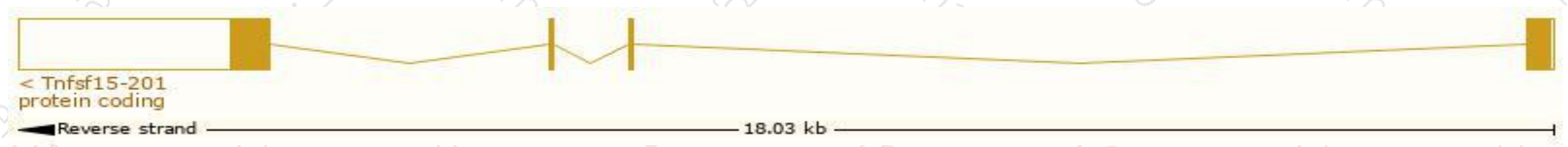
Official Symbol	Tnfsf15 provided by MGI
Official Full Name	tumor necrosis factor (ligand) superfamily, member 15 provided by MGI
Primary source	MGI:MGI:2180140
See related	Ensembl:ENSMUSG00000050395
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Tl1, Tl1a, Tnlg1b, Vegi
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

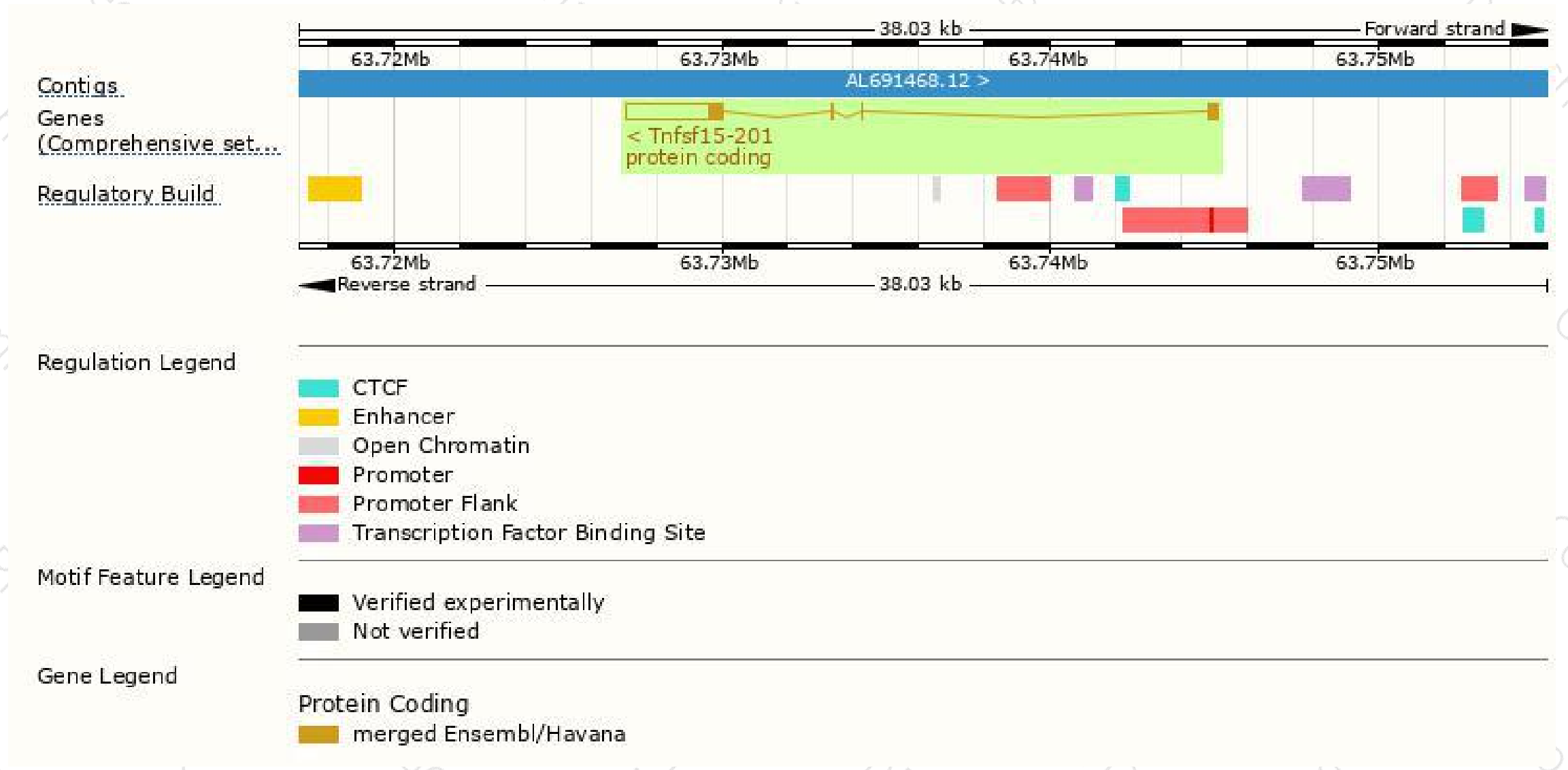
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tnfsf15-201	ENSMUST00000062246.6	3347	270aa	Protein coding	CCDS18263	F6VXB8	TSL:1 GENCODE basic APPRIS P1

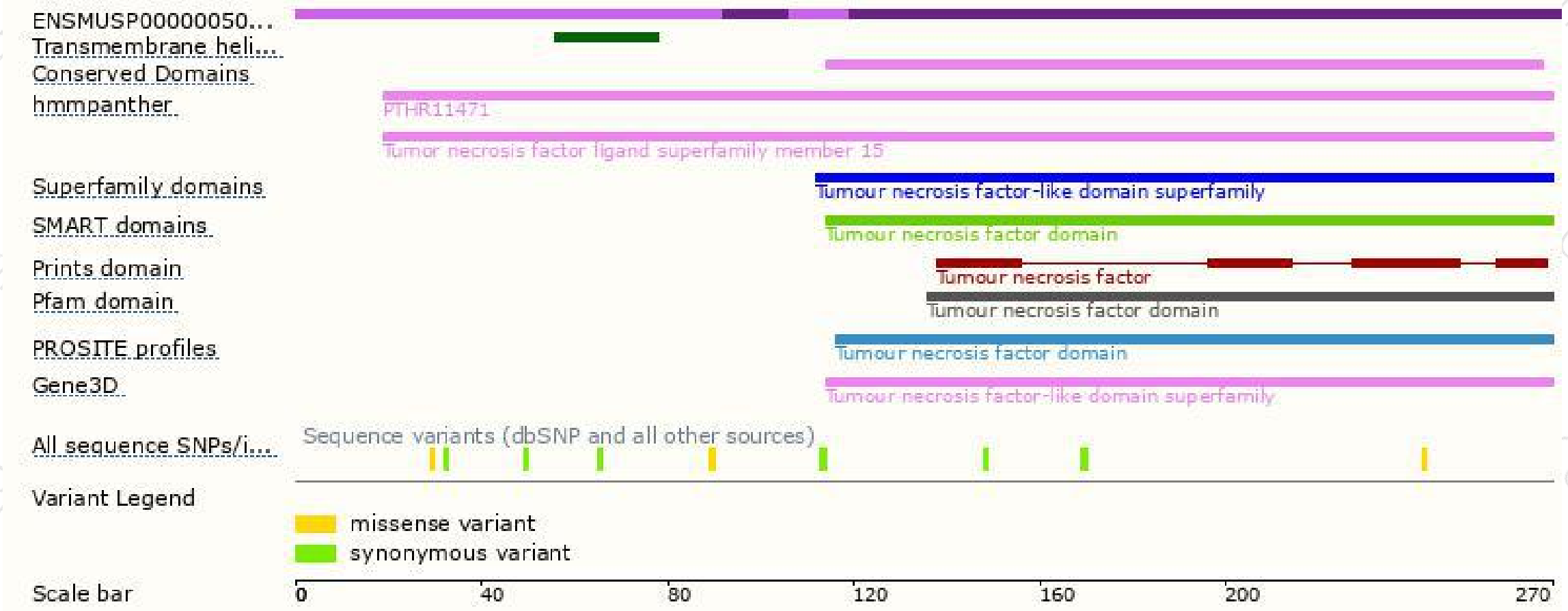
The strategy is based on the design of *Tnfsf15-201* transcript, The transcription is shown below



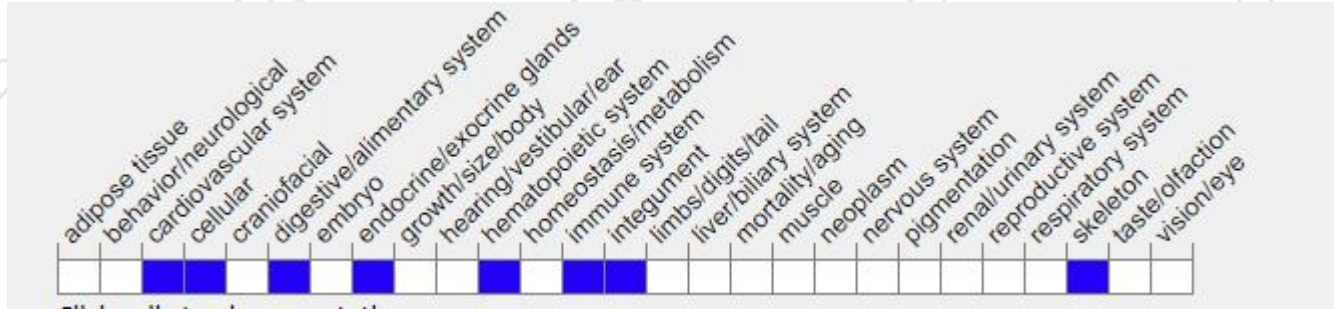
Genomic location distribution



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, Homozygous targeted mutants display decreased clinical severity in experimental autoimmune encephalomyelitis (EAE) and collagen-induced arthritis.

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

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