

***Trim63* Cas9-KO Strategy**

Designer: Yanhua Shen

Design Date: 2019-08-06

Project Overview

Project Name

Trim63

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trim63* gene. The schematic diagram is as follows:



- The *Trim63* gene has 4 transcripts. According to the structure of *Trim63* gene, exon2 of *Trim63*-202 (ENSMUST00000105875.7) transcript is recommended as the knockout region. The region contains 173bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Trim63* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, A targeted homozygous mutation in this gene results in resistance to skeletal muscle atrophy in response to nerve injury.
- The *Trim63* 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)

Trim63 tripartite motif-containing 63 [Mus musculus (house mouse)]

Gene ID: 433766, updated on 28-Mar-2019

Summary



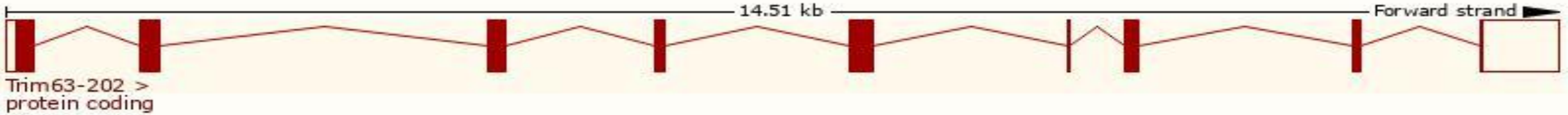
Official Symbol	Trim63 provided by MGI
Official Full Name	tripartite motif-containing 63 provided by MGI
Primary source	MGI:MGI:2447992
See related	Ensembl:ENSMUSG00000028834
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	MuRF1, RF1, Rnf28
Expression	Biased expression in heart adult (RPKM 54.2) and mammary gland adult (RPKM 5.3) See more
Orthologs	human all

Transcript information (Ensembl)

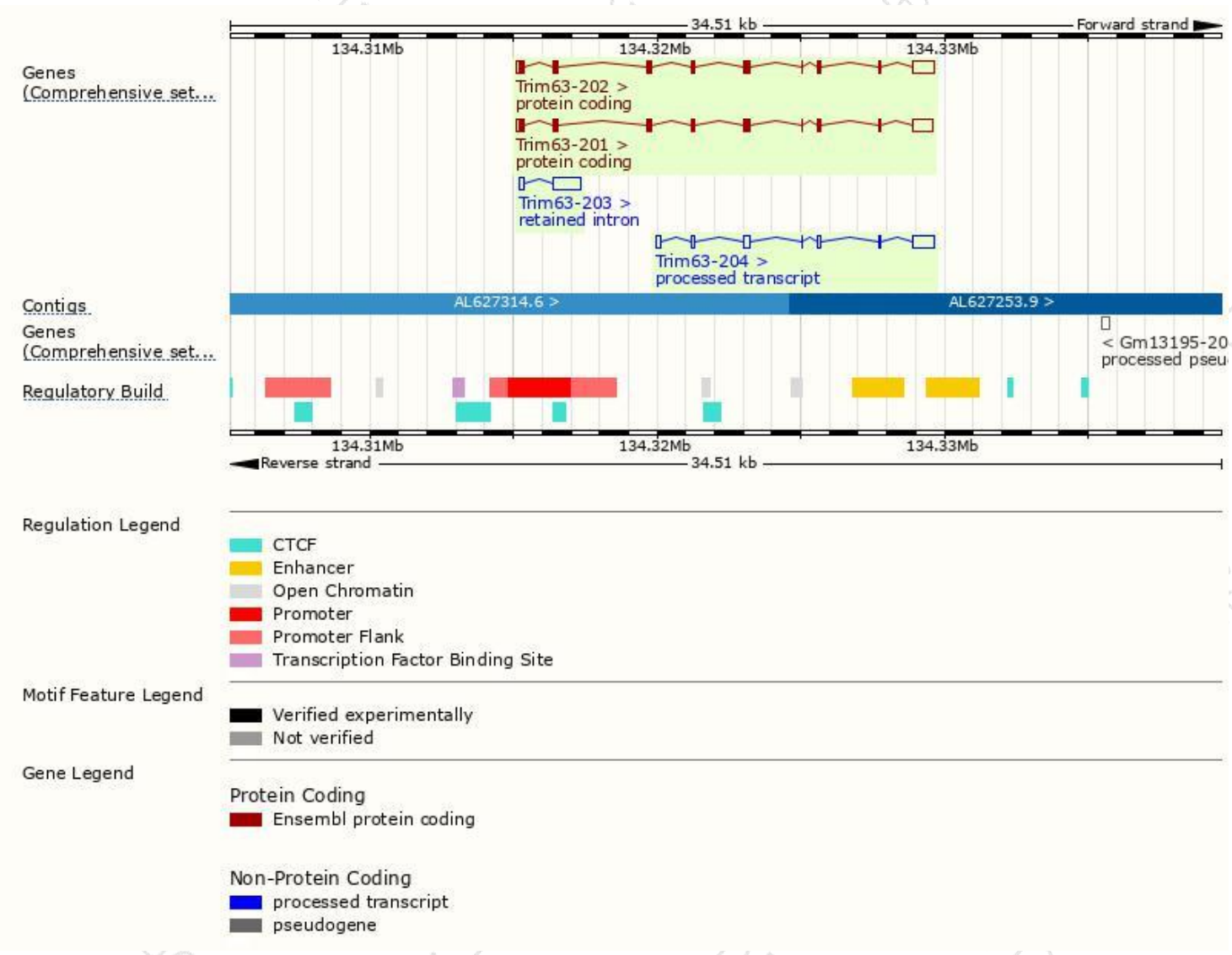
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trim63-202	ENSMUST00000105875.7	1886	355aa	Protein coding	CCDS38914	F8VPZ1	TSL:5 GENCODE basic APPRIS P2
Trim63-201	ENSMUST00000030638.6	1855	352aa	Protein coding	-	A2A9L4	TSL:5 GENCODE basic APPRIS ALT2
Trim63-203	ENSMUST00000134164.1	1152	No protein	Retained intron	-	-	TSL:1
Trim63-204	ENSMUST00000135576.1	1428	No protein	lncRNA	-	-	TSL:5

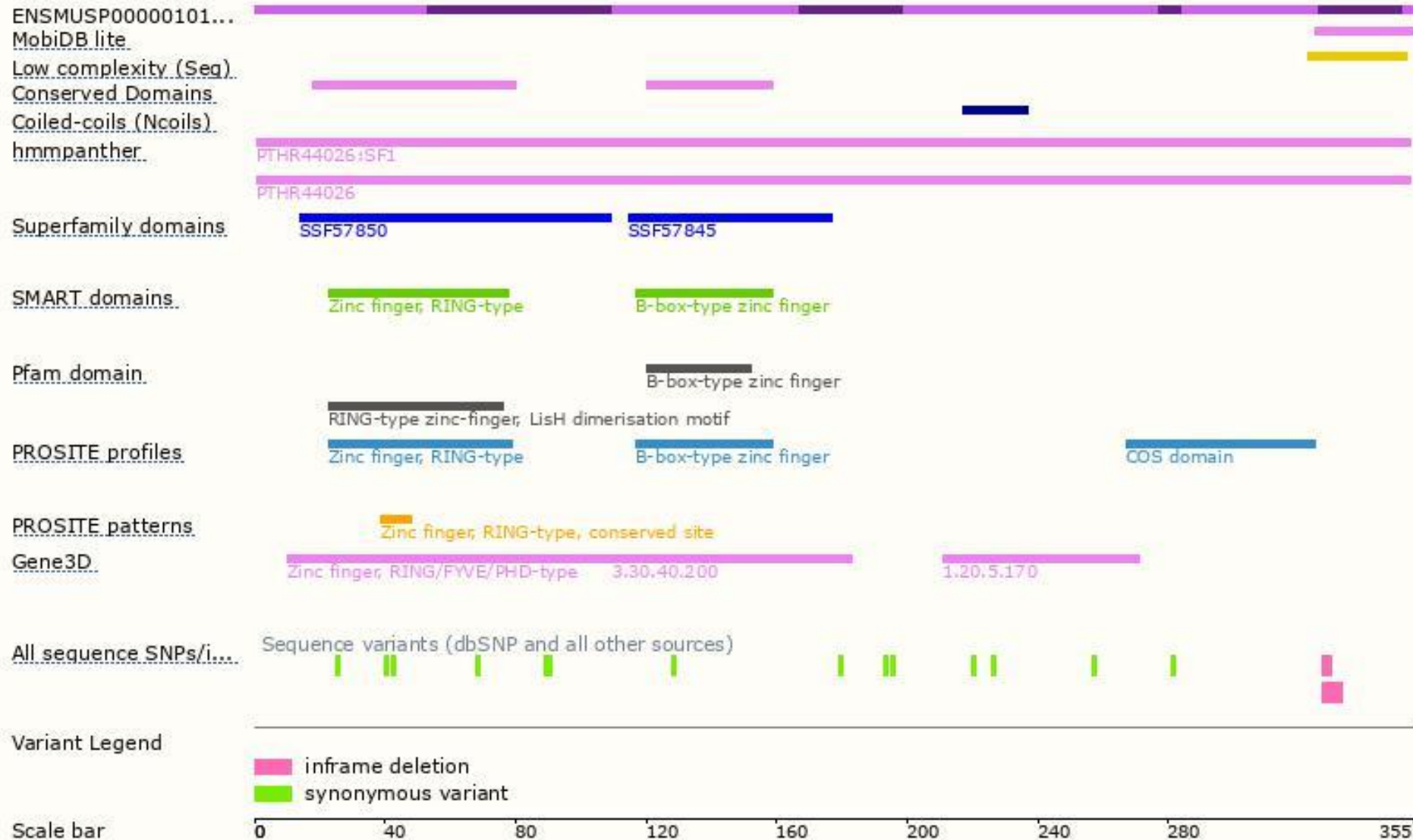
The strategy is based on the design of *Trim63-202* transcript,The transcription is shown below



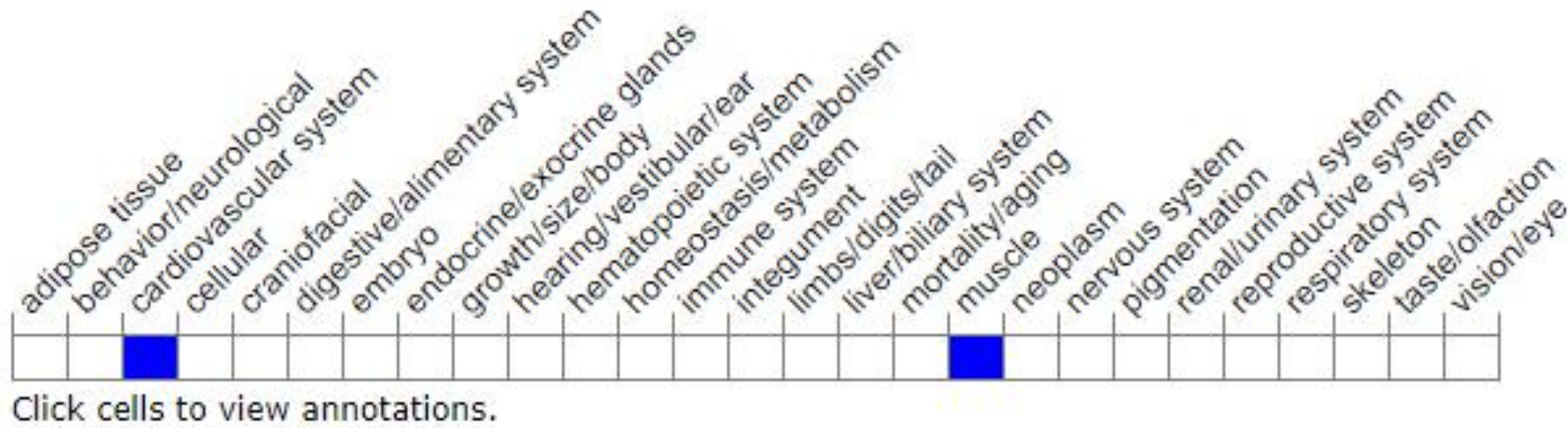
Genomic location distribution



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, A targeted homozygous mutation in this gene results in resistance to skeletal muscle atrophy in response to nerve injury.

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

Tel: 400-9660890

