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# Trim42 Cas9-KO Strategy

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# Overview

## Target Gene Name

- Trim42

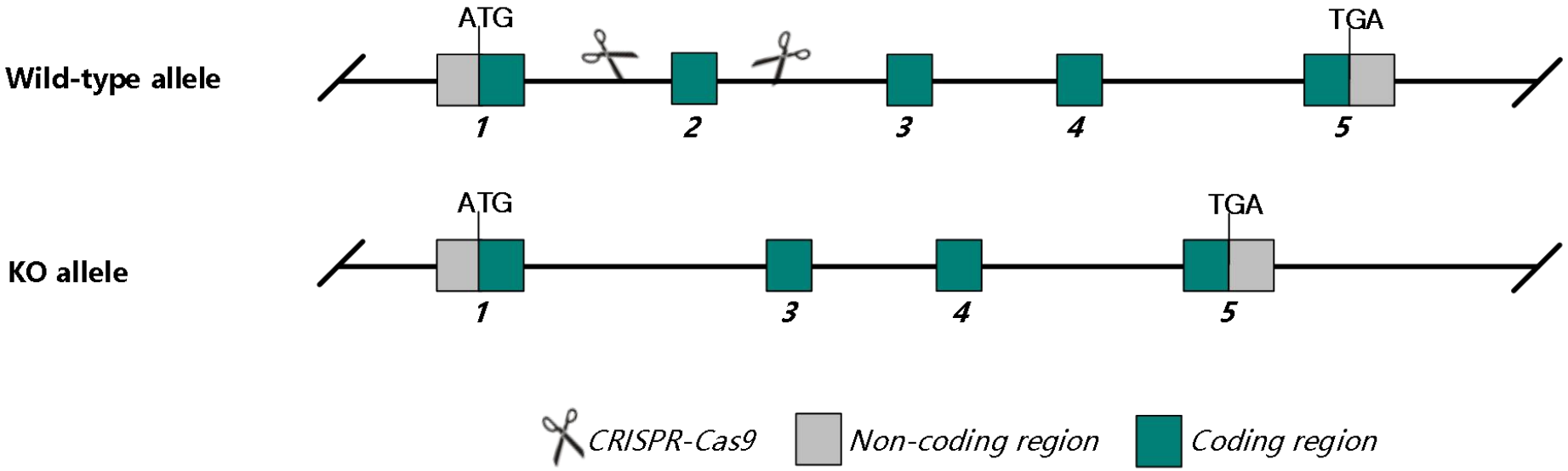
## Project Type

- Cas9-KO

## Genetic Background

- C57BL/6JGpt

# Strain Strategy




Schematic representation of CRISPR-Cas9 engineering used to edit the *Trim42* gene.

# Technical Information

- The *Trim42* gene has 1 transcript. According to the structure of *Trim42* gene, exon2 of *Trim42*-201 (ENSMUST00000035026.5) transcript is recommended as the knockout region. The region contains 698bp of coding sequences. Knocking out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Trim42* gene. The brief process is as follows: gRNAs were transcribed in vitro. Cas9 and gRNAs 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 on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.

# Gene Information

**Trim42 tripartite motif-containing 42 [ *Mus musculus* (house mouse) ]**

Download Datasets

Gene ID: 78911, updated on 31-May-2023

**Summary**

| | |
|---|---|
| **Official Symbol** | Trim42 provided by MGI |
| **Official Full Name** | tripartite motif-containing 42 provided by MGI |
| **Primary source** | MGI:MGI:1926161 |
| **See related** | Ensembl:ENSMUSG00000032451 AllianceGenome:MGI:1926161 |
| **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** | 4930486B16Rik |
| **Summary** | Predicted to enable ubiquitin-protein transferase activity. Predicted to be involved in positive regulation of transcription, DNA-templated. Predicted to be active in chromatin and nucleoplasm. Orthologous to human TRIM42 (tripartite motif containing 42). [provided by Alliance of Genome Resources, Apr 2022] |
| **Expression** | Restricted expression toward testis adult (RPKM 24.6) See more |
| **Orthologs** | human all |

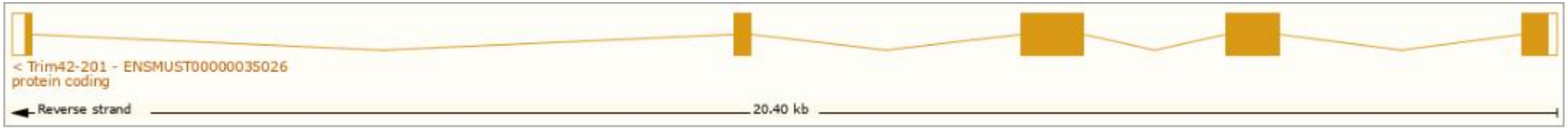
Source: https://www.ncbi.nlm.nih.gov/gene/78911

# Transcript Information

The gene has 1 transcript, all transcripts are shown below:

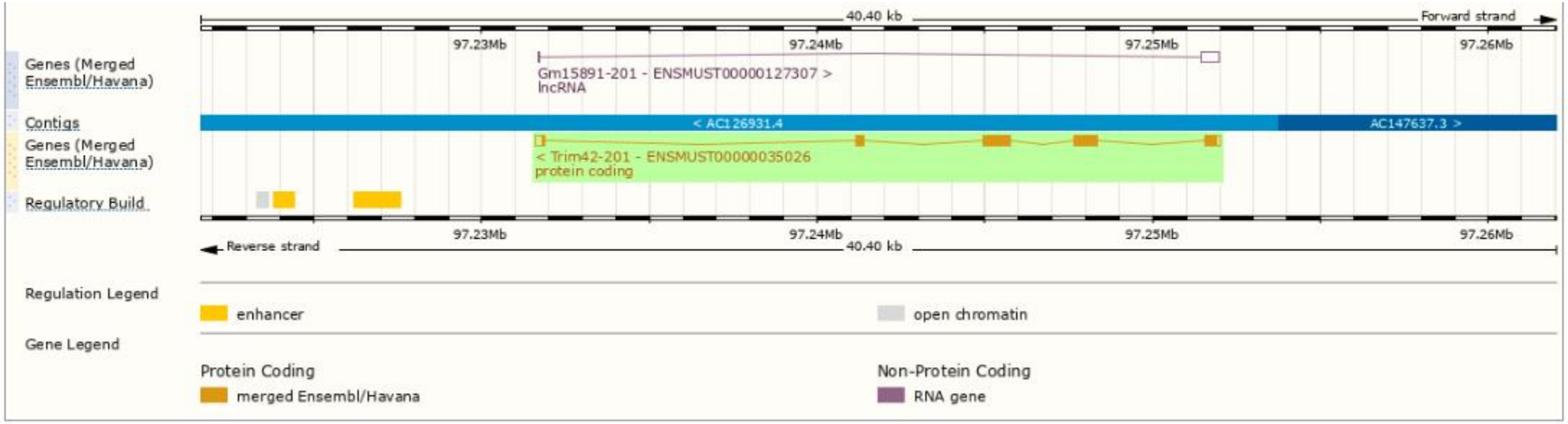
| Transcript ID | Name | bp | Protein | Biotype | CCDS | UniProt Match | Flags |
|---|---|---|---|---|---|---|---|
| ENSMUST00000035026.5 | Trim42-201 | 2463 | 723aa | Protein coding | CCDS23422 | Q9D2H5 | Ensembl Canonical GENCODE basic APPRIS P1 TSL:1 |

The strategy is based on the design of *Trim42*-201 transcript, the transcription is shown below:




Source: https://www.ensembl.org

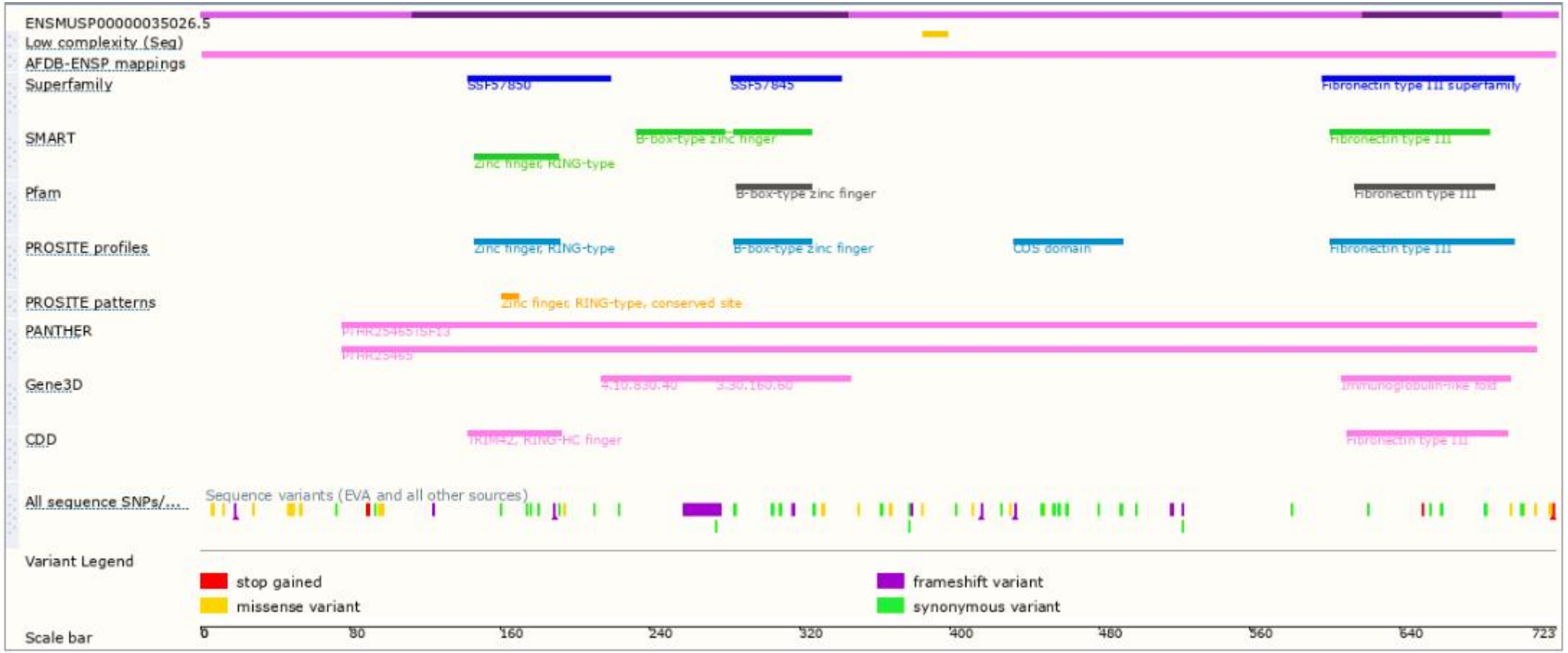
# Genomic Information






Source: : https://www.ensembl.org

# Protein Information

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Source: : https://www.ensembl.org

# Important Information

- The knockout region is overlapped with the predictd gene *Gm15891*. The expression of *Gm15891* gene may be affected.
- *Trim42* is located on Chr9. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risks of the mutation on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.