

***Tram1* Cas9-KO Strategy**

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Project Overview

Project Name

Tram1

Project type

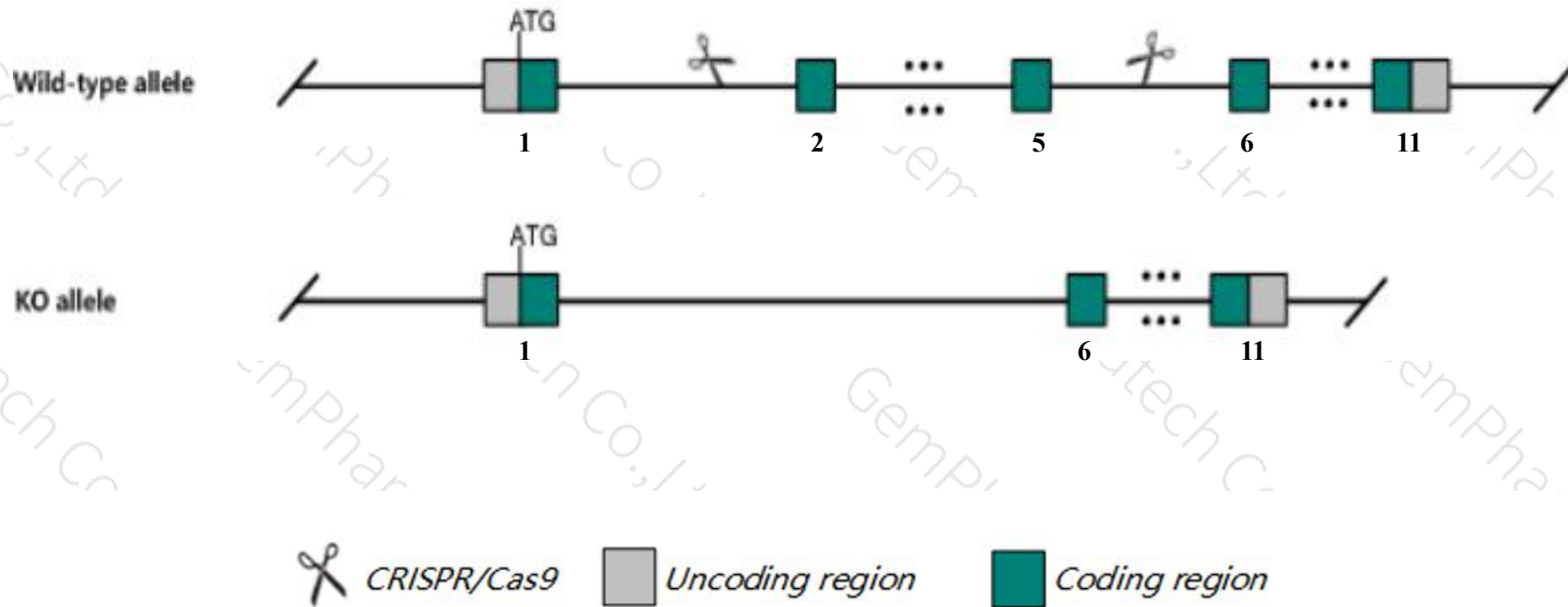
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tram1* gene. The schematic diagram is as follows:



- The *Tram1* gene has 3 transcripts. According to the structure of *Tram1* gene, exon2-exon5 of *Tram1-201* (ENSMUST00000027068.10) transcript is recommended as the knockout region. The region contains 362bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tram1* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Tram1* gene is located on the Chr1. 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)

Tram1 translocating chain-associating membrane protein 1 [Mus musculus (house mouse)]

Gene ID: 72265, updated on 13-Mar-2020

Summary



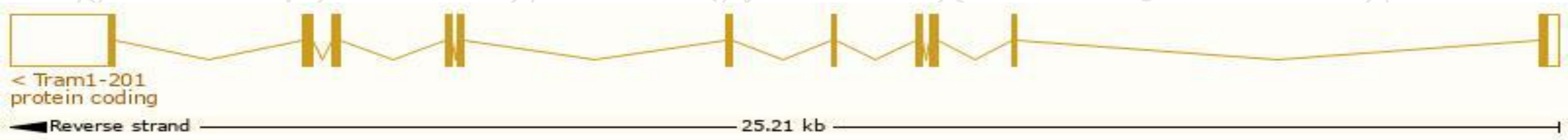
Official Symbol	Tram1 provided by MGI
Official Full Name	translocating chain-associating membrane protein 1 provided by MGI
Primary source	MGI:MGI:1919515
See related	Ensembl:ENSMUSG000000025935
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810049E02Rik, TRAMP
Summary	This gene encodes a multi-pass transmembrane protein of the endoplasmic reticulum (ER). It is involved in the process of cotranslational translocation of secretory proteins into the ER. [provided by RefSeq, Dec 2014]
Expression	Ubiquitous expression in placenta adult (RPKM 47.6), testis adult (RPKM 32.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

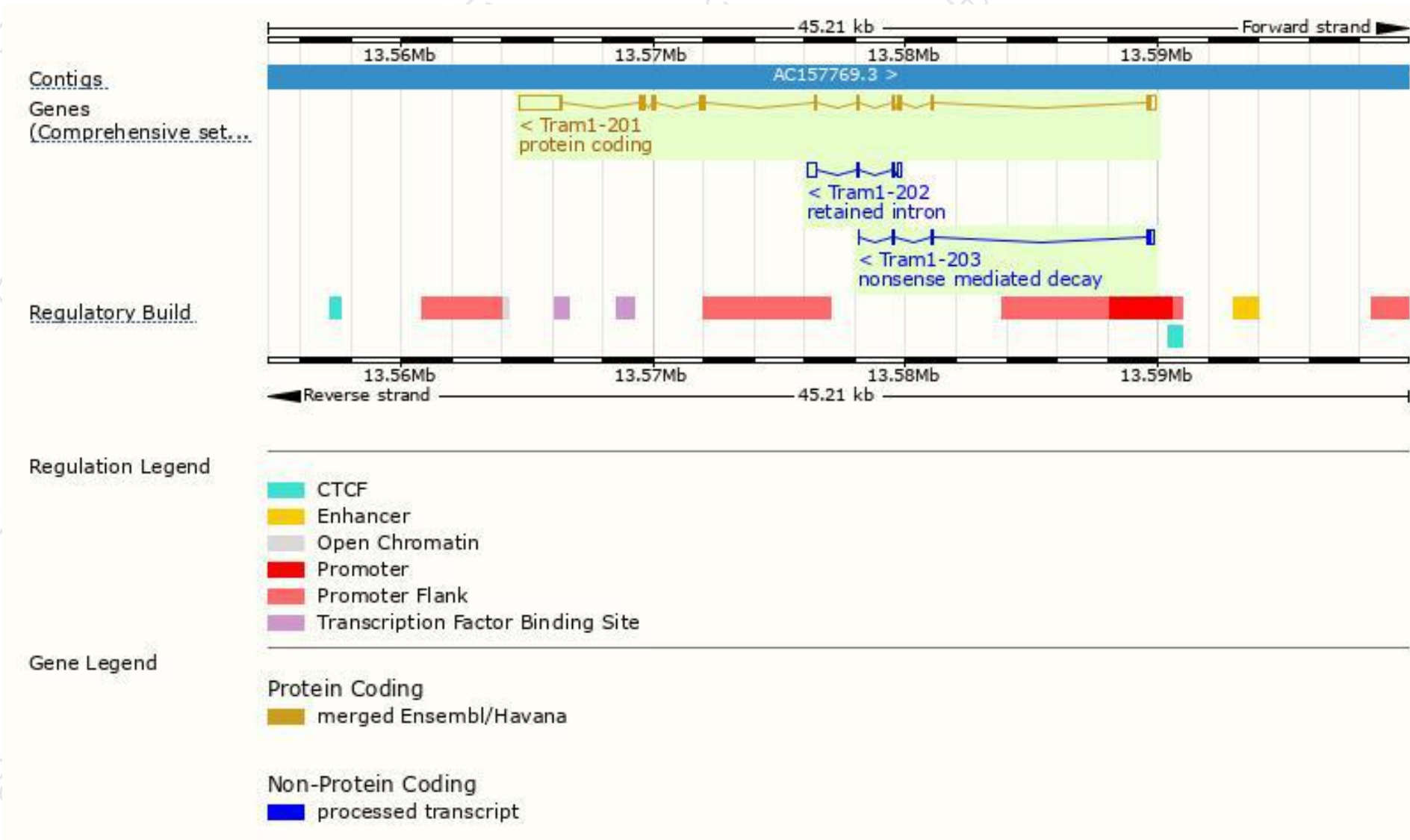
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tram1-201	ENSMUST00000027068.10	2938	374aa	Protein coding	CCDS14822	Q4FK14 Q91V04	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1
Tram1-203	ENSMUST00000188377.1	498	64aa	Nonsense mediated decay	-	A0A087WR72	TSL:3
Tram1-202	ENSMUST00000185447.1	594	No protein	Retained intron	-	-	TSL:3

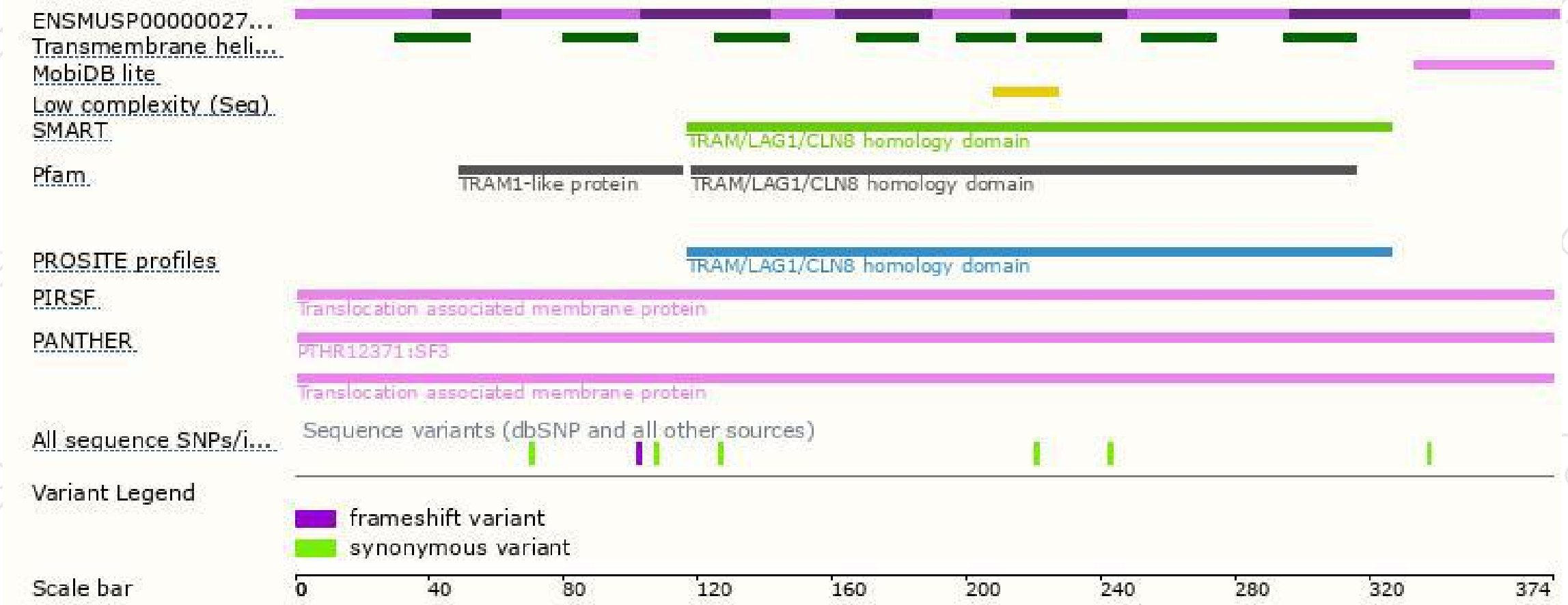
The strategy is based on the design of *Tram1-201* transcript,the transcription is shown below



Genomic location distribution



Protein domain



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

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