

***Trim41* Cas9-CKO Strategy**

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Design Date: 2020-8-14

Project Overview

Project Name

Trim41

Project type

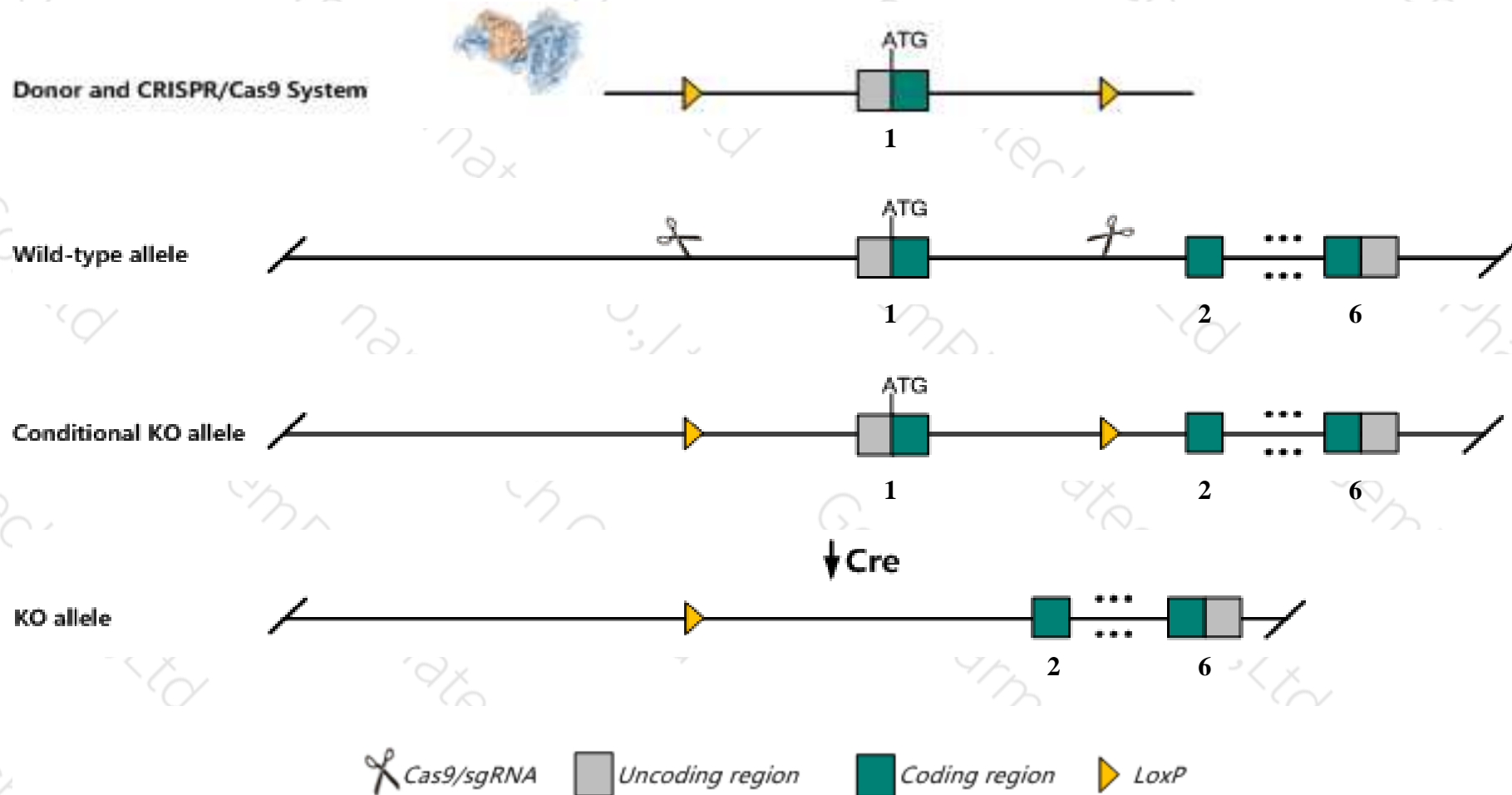
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trim41* gene. The schematic diagram is as follows:



Technical routes

- The *Trim41* gene has 4 transcripts. According to the structure of *Trim41* gene, exon1 of *Trim41*-201(ENSMUST00000047145.13) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Trim41* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor 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 sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Trim41* gene is located on the Chr11. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.
- Transcript 202 will not be affected.

Gene information (NCBI)

Trim41 tripartite motif-containing 41 [Mus musculus (house mouse)]

Gene ID: 211007, updated on 13-Mar-2020

Summary



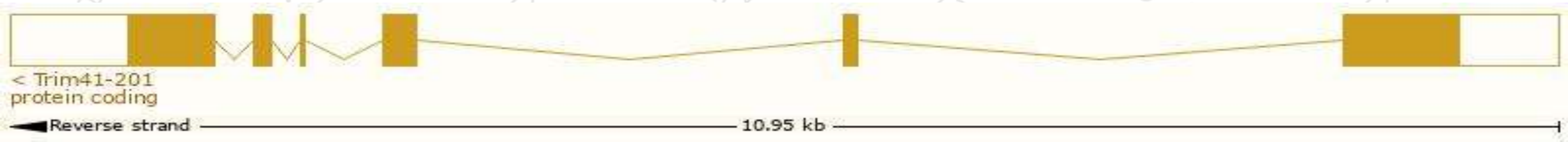
Official Symbol	Trim41 provided by MGI
Official Full Name	tripartite motif-containing 41 provided by MGI
Primary source	MGI:MGI:2384814
See related	Ensembl:ENSMUSG00000040365
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW552703, BC020156, R75223, RINCK
Expression	Ubiquitous expression in testis adult (RPKM 35.3), adrenal adult (RPKM 16.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

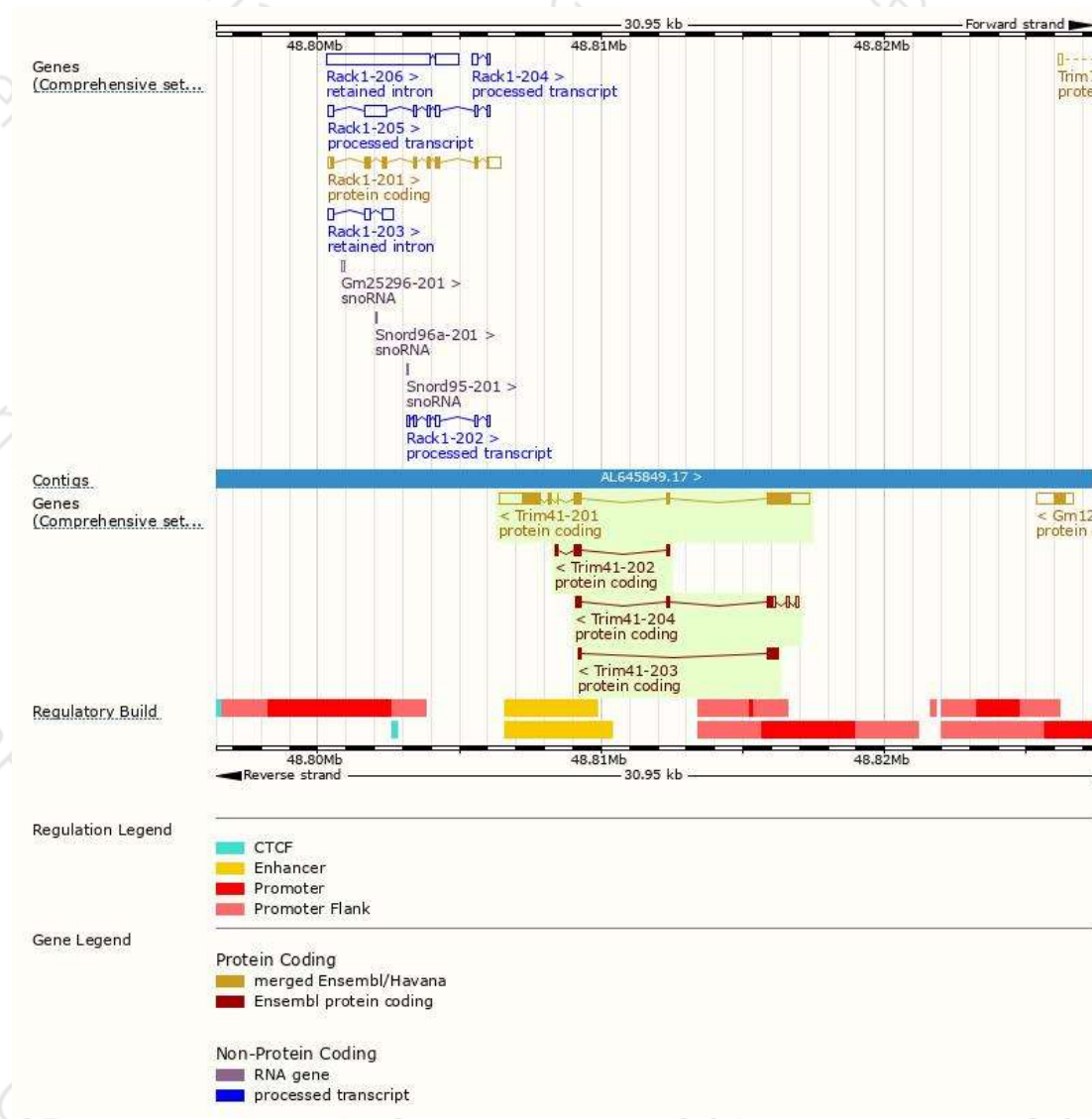
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trim41-201	ENSMUST00000047145.13	3432	630aa	Protein coding	CCDS36138	Q5NCC3	TSL:1 GENCODE basic APPRIS P1
Trim41-204	ENSMUST00000140800.1	723	161aa	Protein coding	-	Q5NCC2	CDS 3' incomplete TSL:3
Trim41-203	ENSMUST00000138019.1	471	157aa	Protein coding	-	F6X2H0	CDS 5' and 3' incomplete TSL:3
Trim41-202	ENSMUST00000131888.7	429	126aa	Protein coding	-	Q5NCC4	CDS 5' incomplete TSL:3

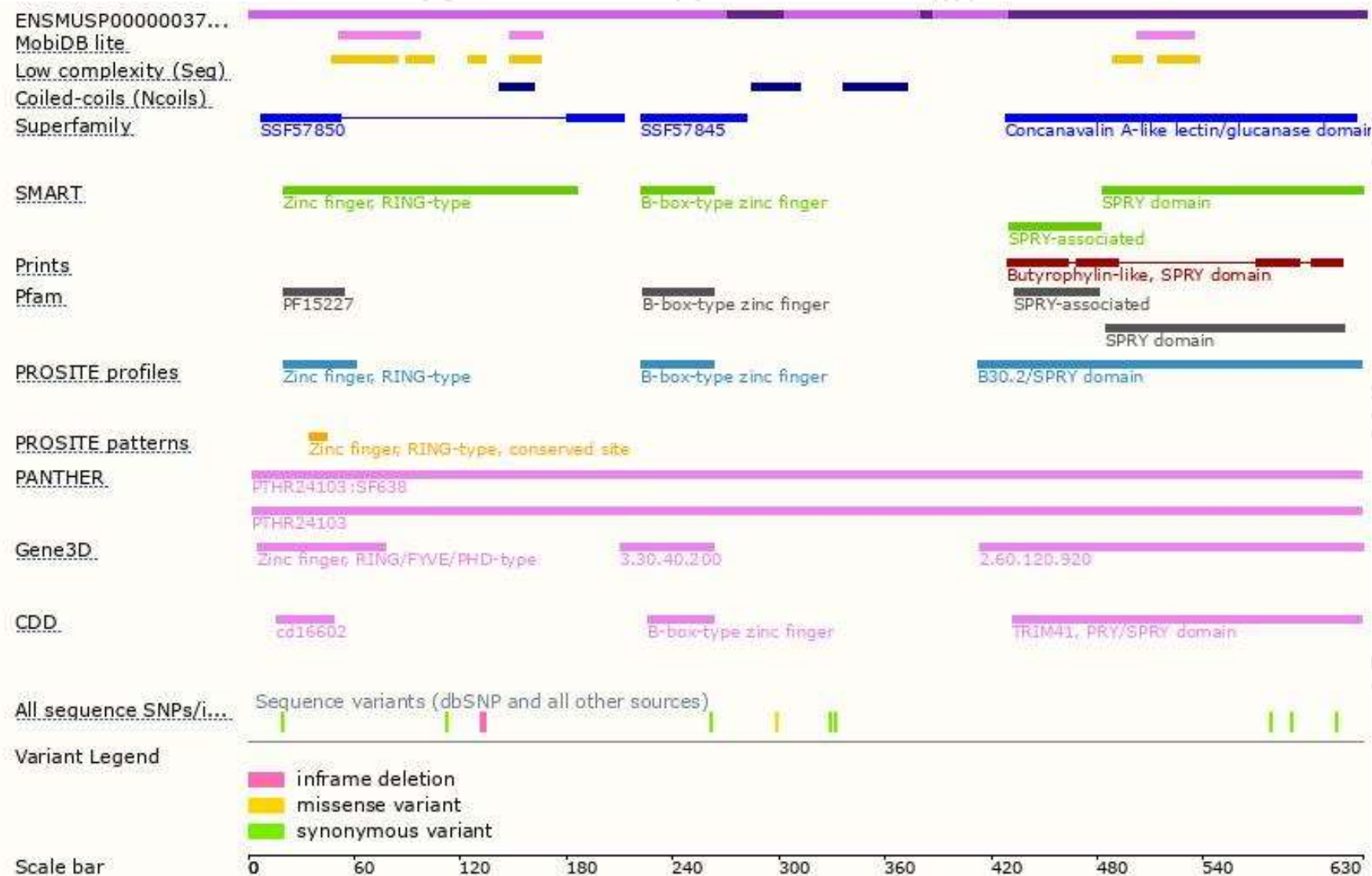
The strategy is based on the design of *Trim41-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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