Trim15 Cas9-KO Strategy

Designer: Xueting Zhang

Reviewer: Daohua Xu

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Project Overview

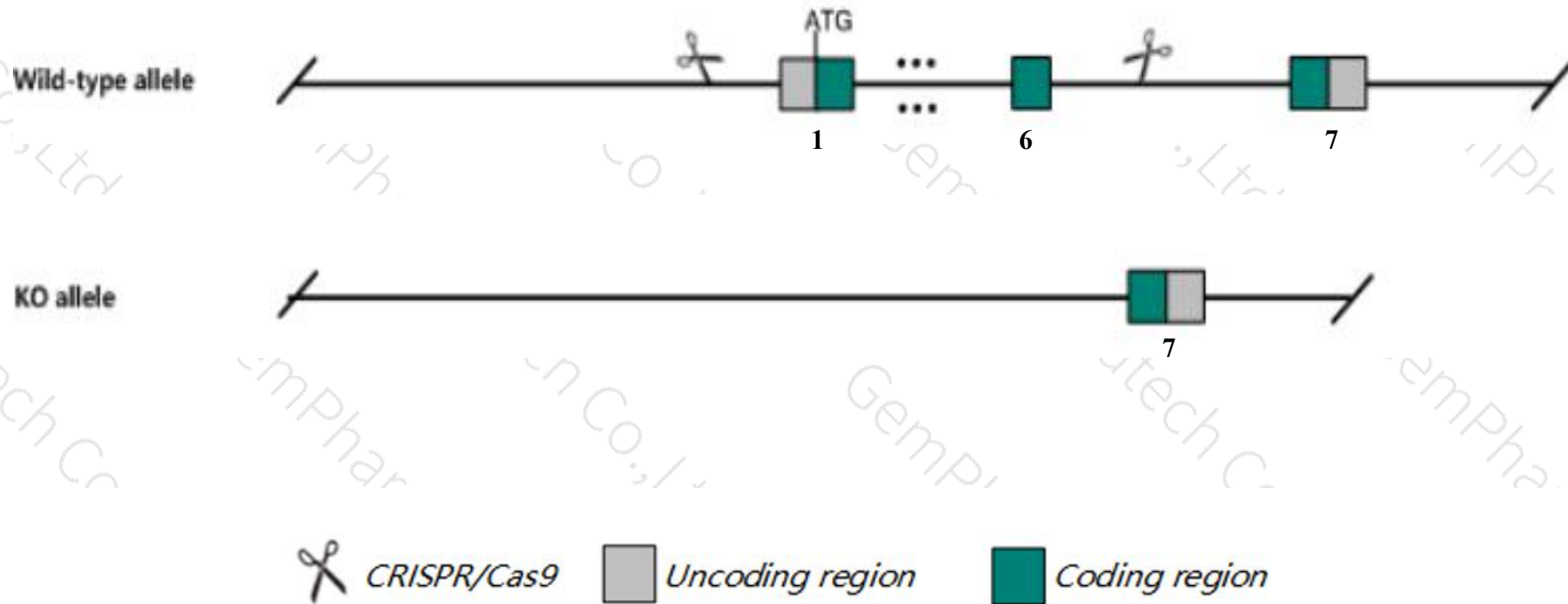|	
Project Name	***Trim15***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trim15* gene. The schematic diagram is as follows:

Technical routes

➢ The *Trim15* gene has 3 transcripts. According to the structure of *Trim15* gene, exon1-exon6 of *Trim15-203*(ENSMUST00000174195.7) 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 *Trim15* gene. The brief process is as follows: CRISPR/Cas9 system 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.

Notice

➢ The knockout region is near to the N-terminal of *Trim10* gene,this strategy may influence the regulatory function of the N-terminal of *Trim1*0 gene.

➢ The *Trim15* gene is located on the Chr17. 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

Trim15 tripartite motif-containing 15 [Mus musculus (house mouse)]

Gene ID: 69097, updated on 13-Mar-2020

|	
Official Symbol	Trim15 provided by MGI
Official Full Name	tripartite motif-containing 15 provided by MGI
Primary source	MGI:MGI:1916347
See related	Ensembl:ENSMUSG00000050747
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	1810012B10Rik
Expression	Biased expression in large intestine adult (RPKM 14.4), small intestine adult (RPKM 8.1) and 3 other tissuesSee 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
Trim15-201	ENSMUST00000025329.12	1843	290aa	Protein coding	CCDS50102	Q8R096	TSL:1 GENCODE basic APPRIS P3
Trim15-203	ENSMUST00000174195.7	1778	292aa	Protein coding	CCDS57079	G3UY57	TSL:1 GENCODE basic APPRIS ALT2
Trim15-202	ENSMUST00000173639.1	870	136aa	Nonsense mediated decay	-	G3UXC8	CDS 5' incomplete TSL:5

The strategy is based on the design of *Trim15-203* transcript,the transcription is shown below:

< Trim15-203
protein coding

◄ Reverse strand

6.52 kb
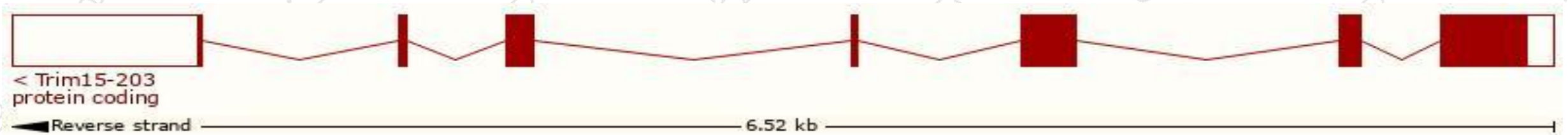
Genomic location distribution
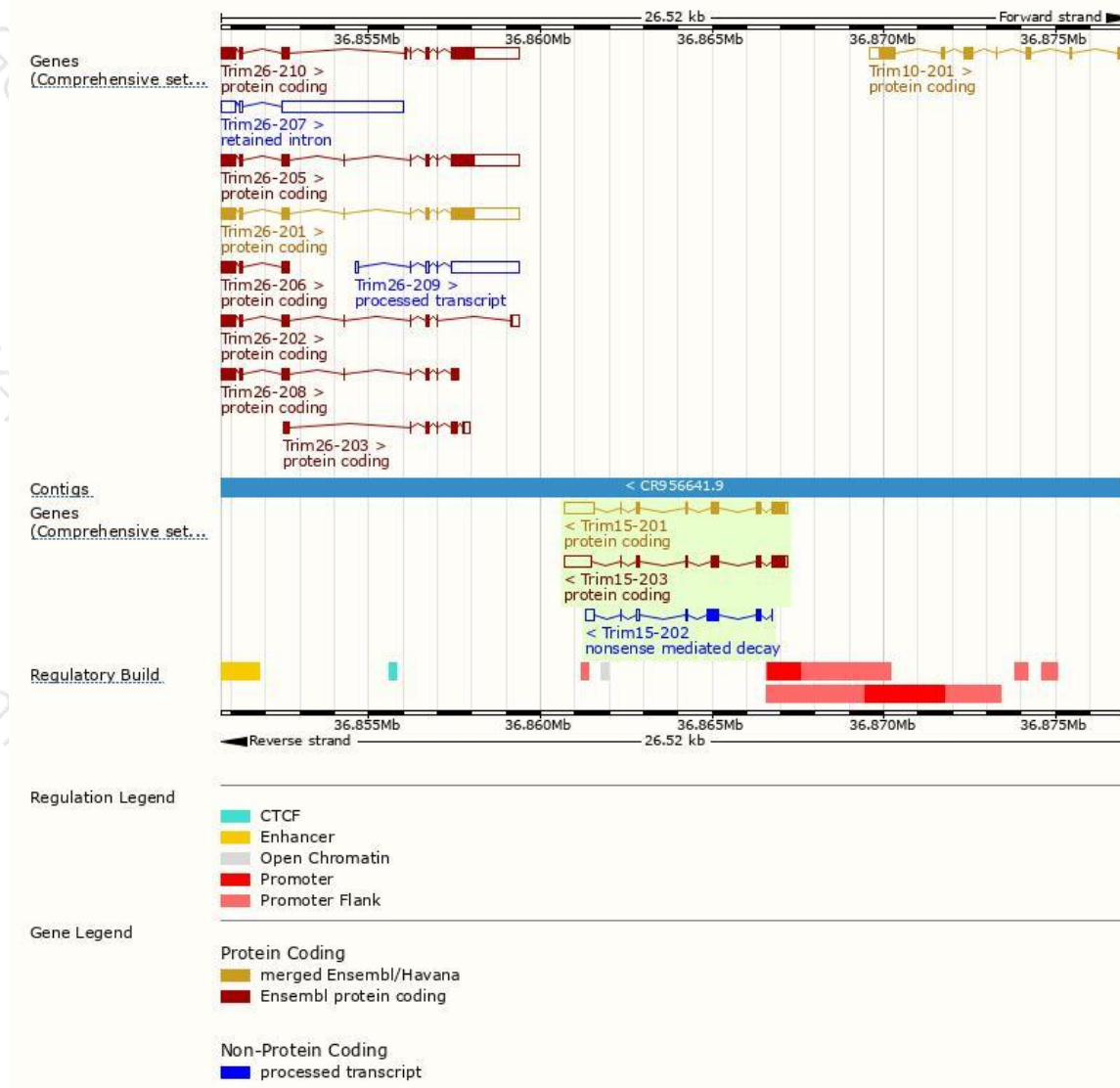
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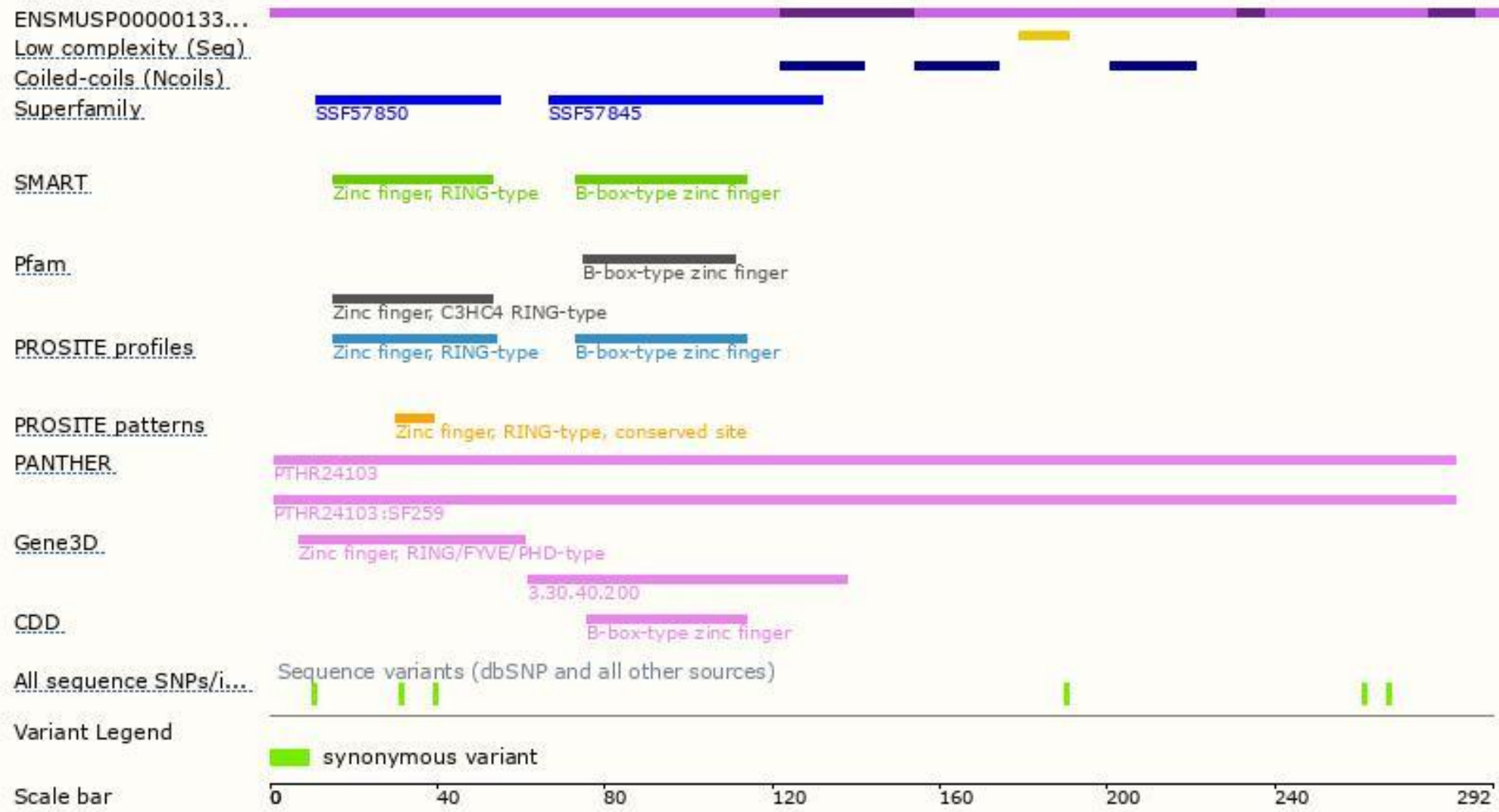
If you have any questions, you are welcome to inquire.
Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd