

Trim14 Cas9-KO Strategy

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Project Overview



Project Name

Trim14

Project type

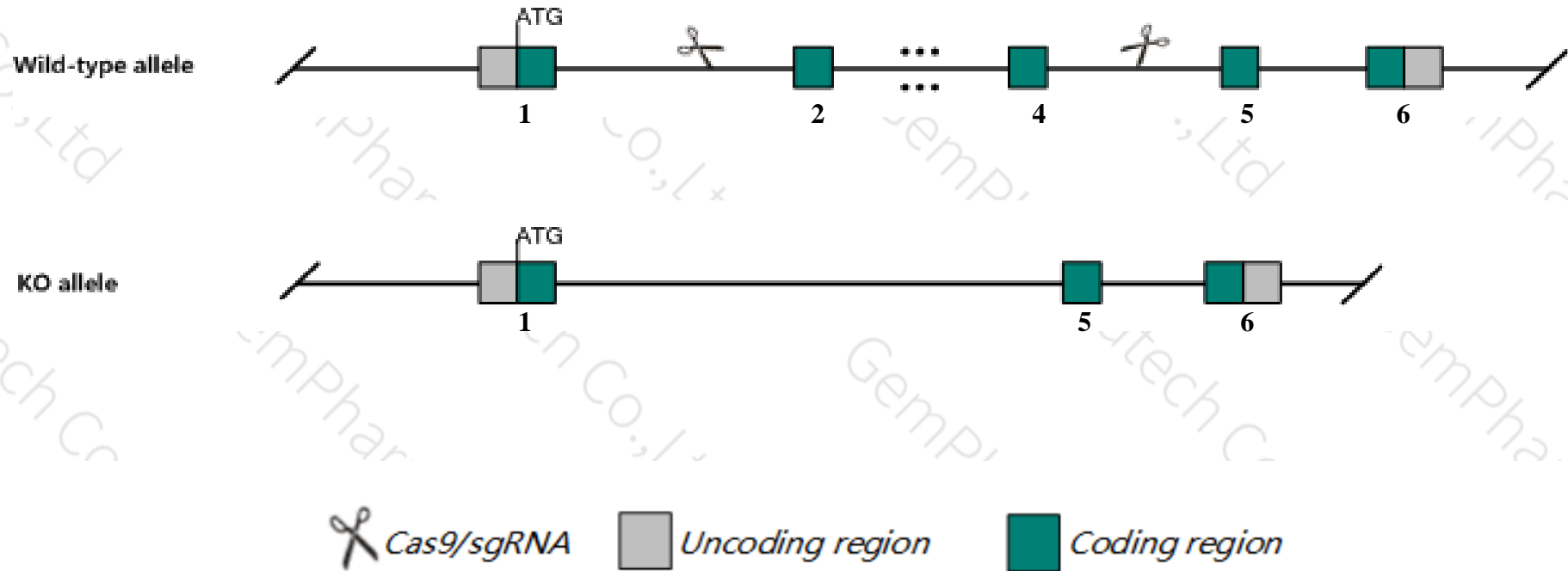
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trim14* gene. The schematic diagram is as follows:



- The *Trim14* gene has 6 transcripts. According to the structure of *Trim14* gene, exon2-exon4 of *Trim14-201* (ENSMUST00000046897.12) transcript is recommended as the knockout region. The region contains 493bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Trim14* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Trim14* 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)

Trim14 tripartite motif-containing 14 [Mus musculus (house mouse)]

Gene ID: 74735, updated on 31-Jan-2019

Summary

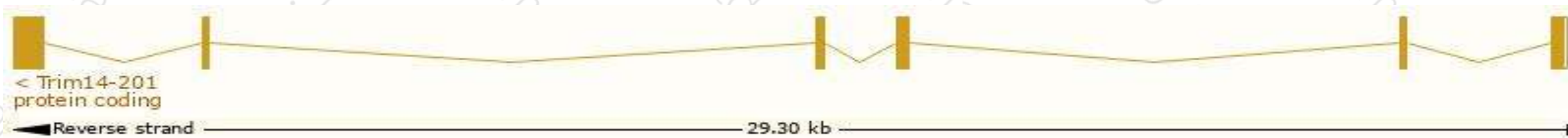
Official Symbol	Trim14 provided by MGI
Official Full Name	tripartite motif-containing 14 provided by MGI
Primary source	MGI:MGI:1921985
See related	Ensembl:ENSMUSG00000039853
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5830400N10Rik, pub
Expression	Broad expression in spleen adult (RPKM 8.5), small intestine adult (RPKM 7.5) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

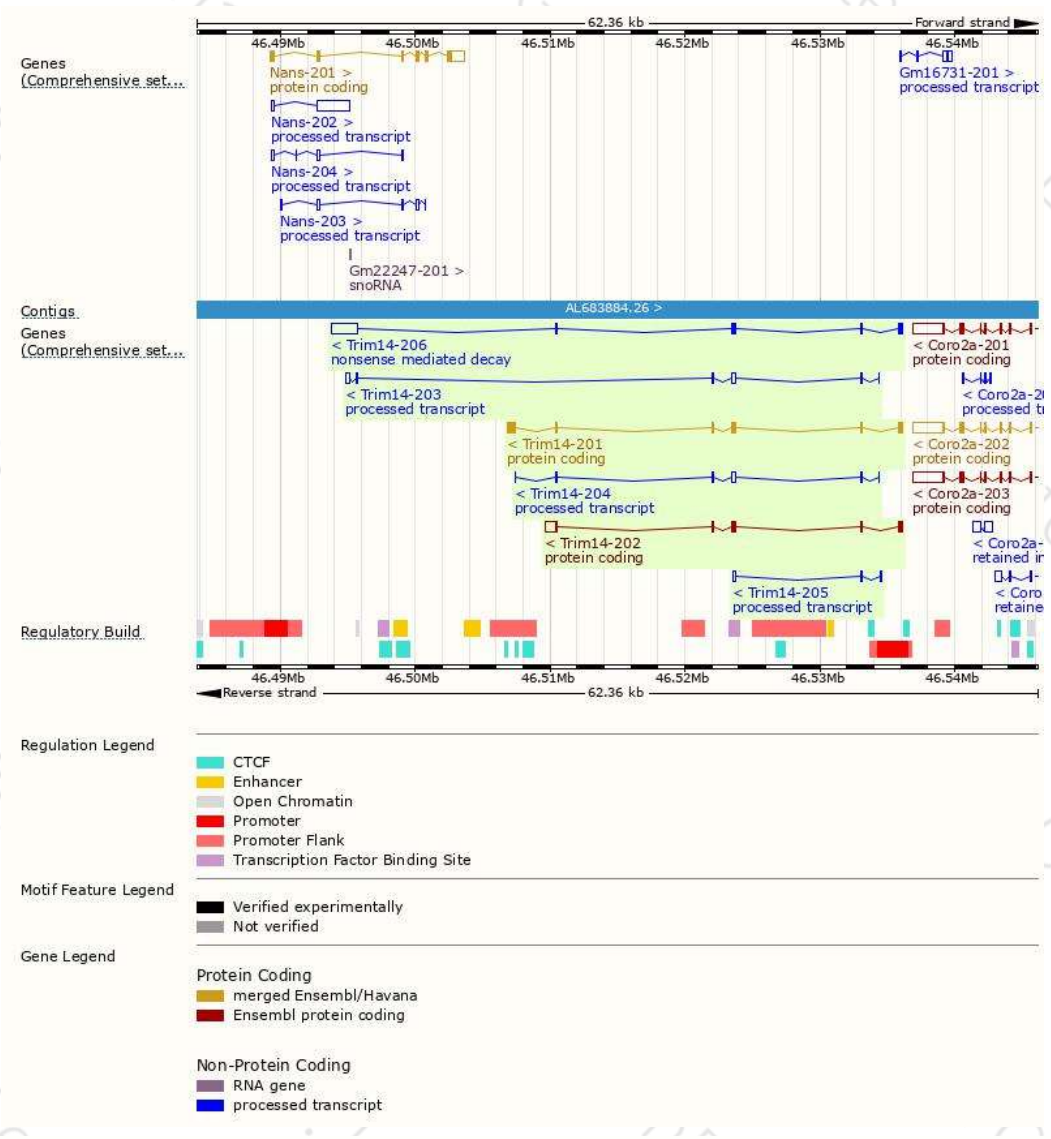
The gene has 6 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trim14-201	ENSMUST00000046897.12	1429	440aa	Protein coding	CCDS18153	Q14AR3 Q8BVW3	TSL:1 GENCODE basic APPRIS P1
Trim14-202	ENSMUST00000102924.2	1582	283aa	Protein coding	-	Q8BVW3	TSL:2 GENCODE basic
Trim14-206	ENSMUST00000184112.7	2653	178aa	Nonsense mediated decay	-	Q8BVW3	TSL:2
Trim14-203	ENSMUST00000136978.7	906	No protein	Processed transcript	-	-	TSL:5
Trim14-204	ENSMUST00000142502.7	670	No protein	Processed transcript	-	-	TSL:1
Trim14-205	ENSMUST00000142606.1	377	No protein	Processed transcript	-	-	TSL:5

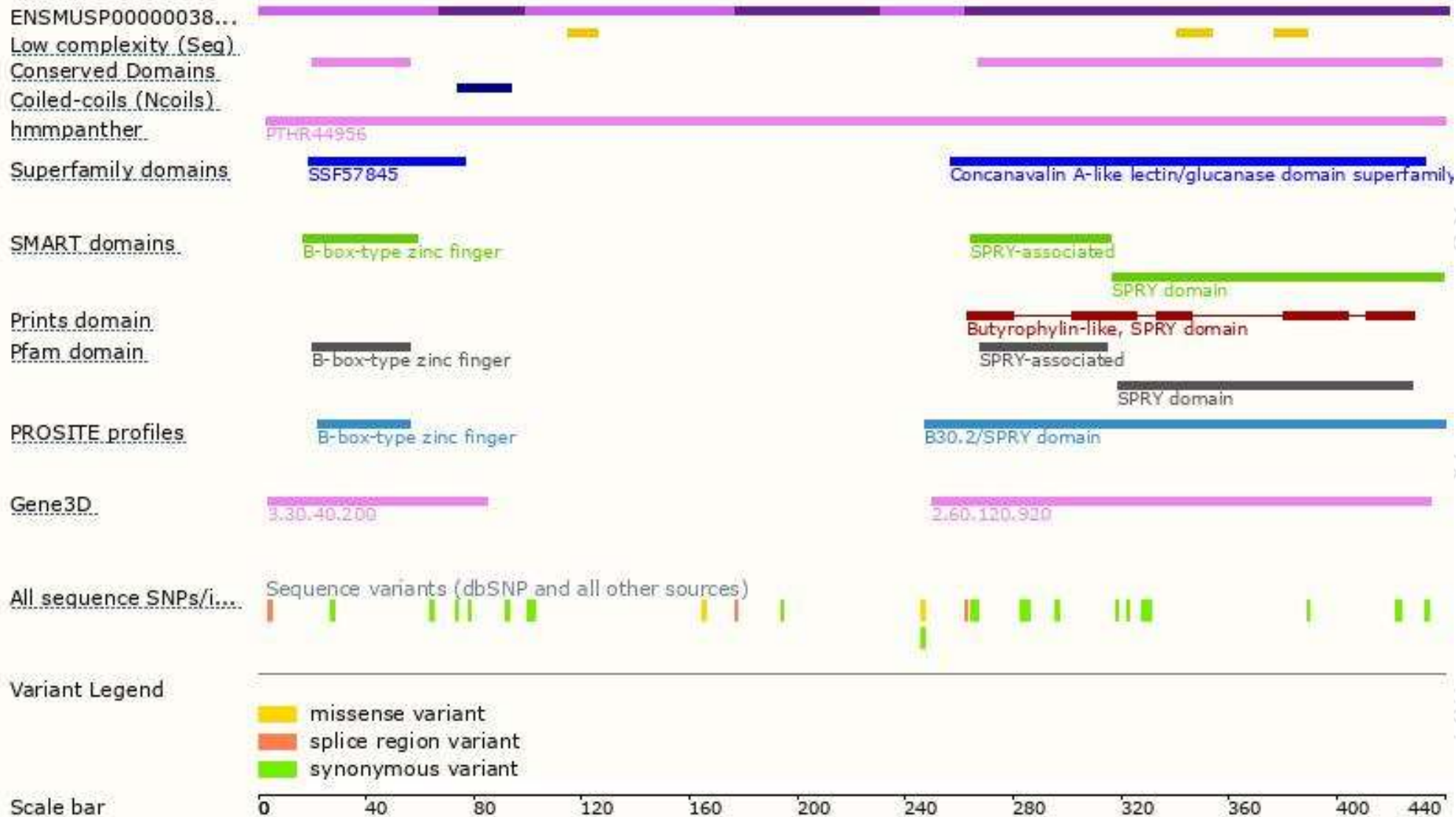
The strategy is based on the design of *Trim14-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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