Trim69 Cas9-CKO *Strategy*

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Project Overview

Project Name	***Trim69***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

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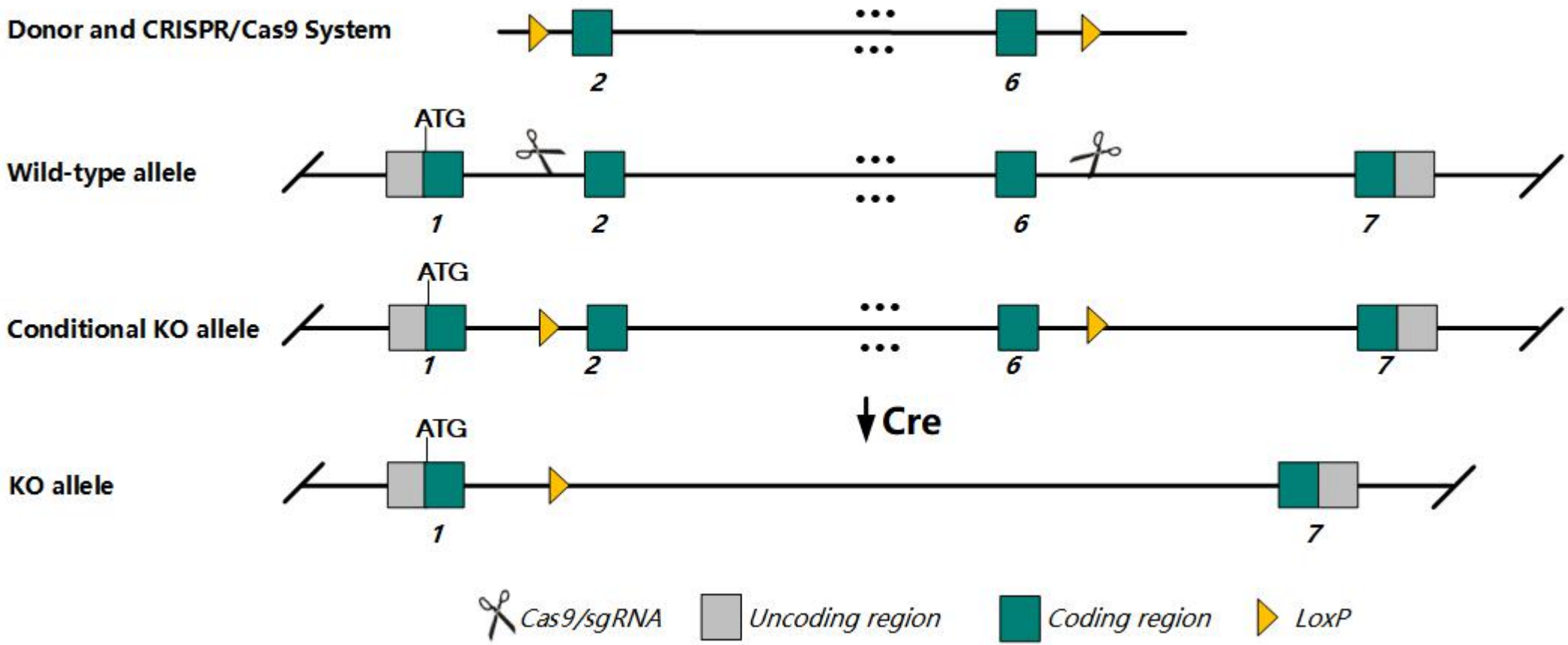
This model will use CRISPR/Cas9 technology to edit the *Trim69* gene. The schematic diagram is as follows:



Technical routes

- The *Trim69* gene has 2 transcript.According to the structure of *Trim69* gene, exon2-6 of *Trim69*-201(ENSMUST00000036089.7) transcript is recommended as the knockout region.The region contains958bp coding sequence.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Trim69* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed.Cas9, gRNA 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 will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues or cell types.

Notice

- The KO region contains functional region of the *Patl2* gene.Knockout the region may affect the function of *Patl2* gene.
- The *Trim69* gene is located on the Chr2. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information （NCBI）

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Trim69 tripartite motif-containing 69 [*Mus musculus* (house mouse)]

Gene ID: 70928, updated on 12-Aug-2019

Summary

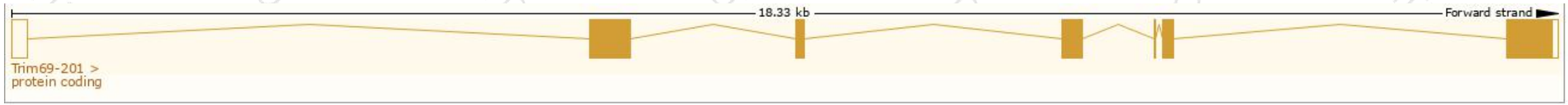
Official Symbol	Trim69 provided by MGI
Official Full Name	tripartite motif-containing 69 provided by MGI
Primary source	MGI:MGI:1918178
See related	Ensembl:ENSMUSG00000033368
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Trif; Rnf36; Trimless; 4921519C19Rik
Expression	Restricted expression toward testis adult (RPKM 46.9) See more
Orthologs	human all

Transcript information（Ensembl）

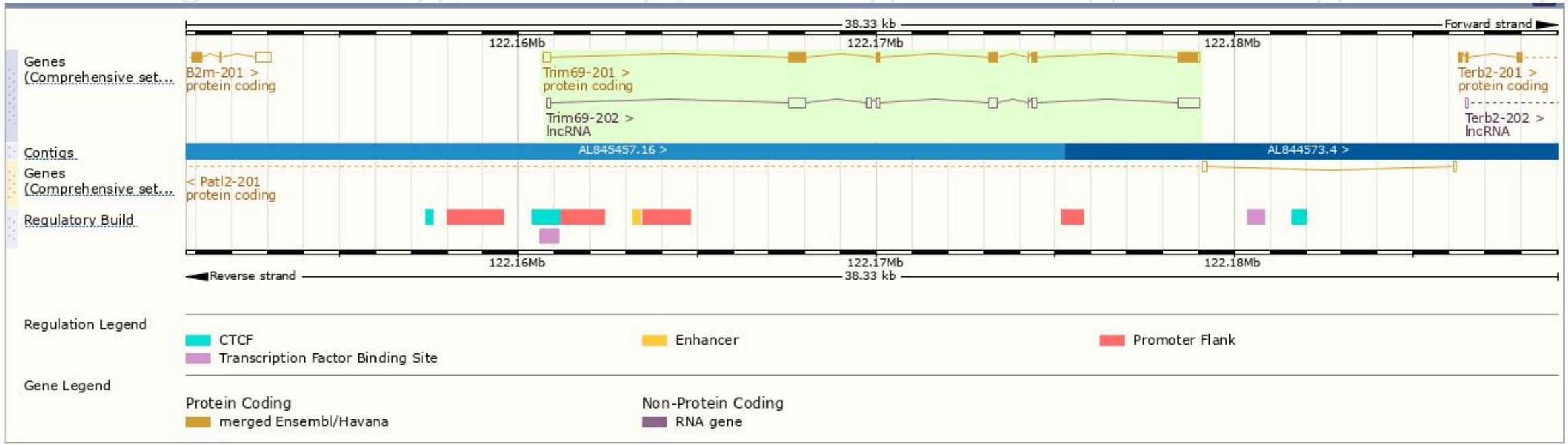
The gene has 2 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trim69-201	ENSMUST00000036089.7	1758	500aa	Protein coding	CCDS16655	Q80X56	TSL:1 GENCODE basic APPRIS P1
Trim69-202	ENSMUST00000143088.1	1783	No protein	lncRNA	-	-	TSL:5

The strategy is based on the design of *Trim69*-201 transcript,The transcription is shown below

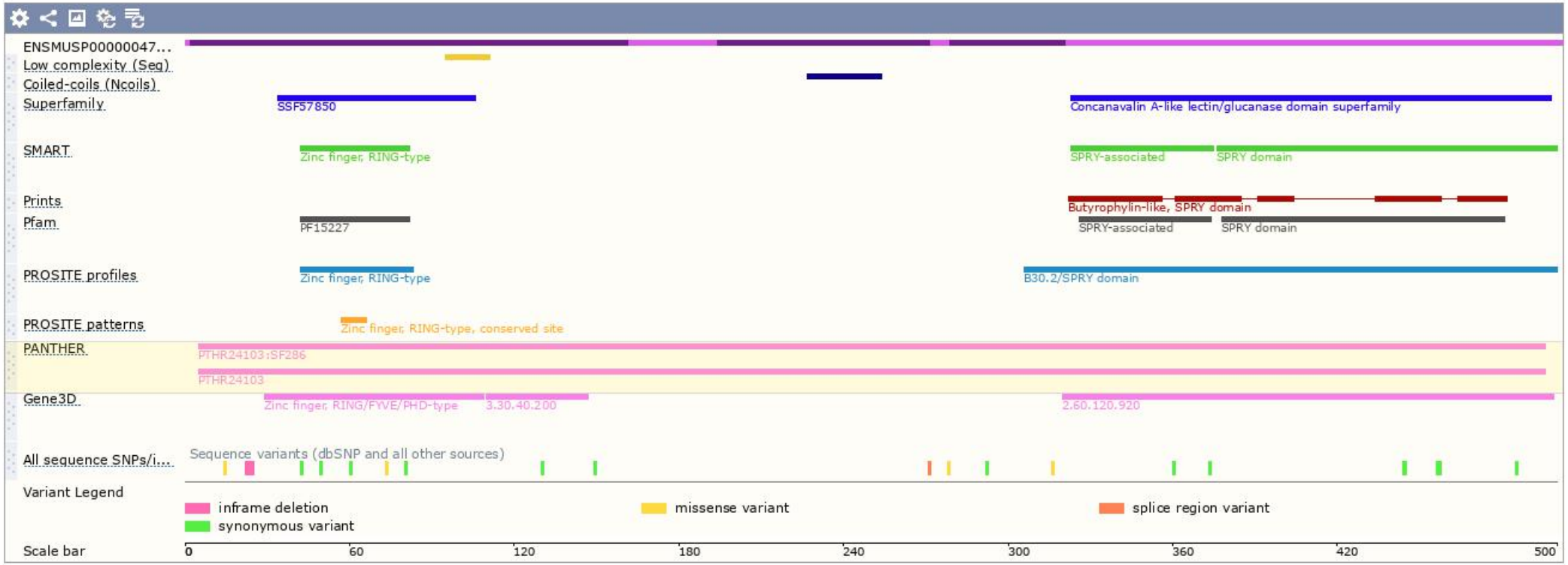


Genomic location distribution



Protein domain

Protein domains for ENSMUSP00000047627.7



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