

***Rab17* Cas9-CKO Strategy**

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Reviewer:

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Project Overview

Project Name

Rab17

Project type

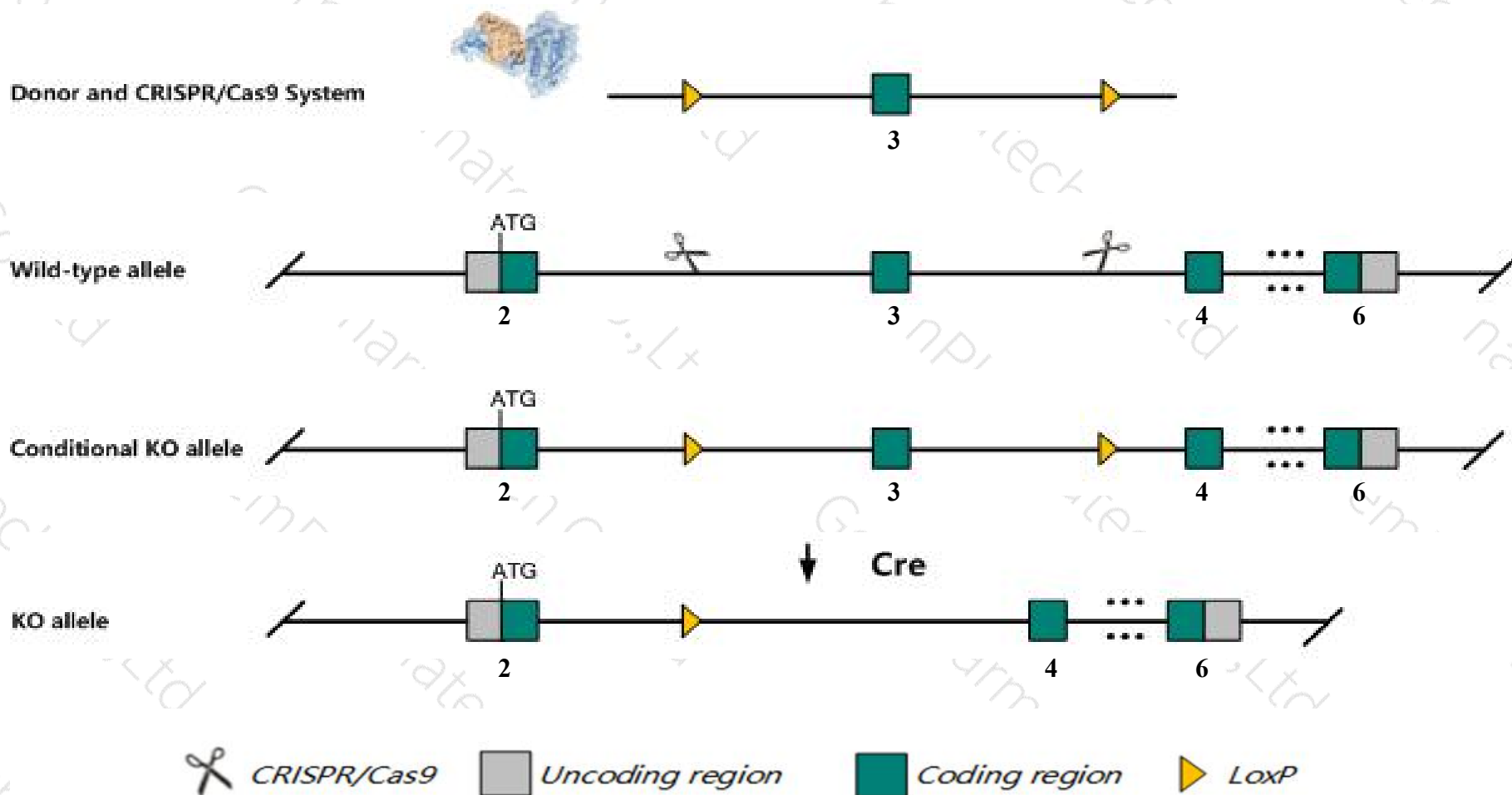
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rab17* gene. The schematic diagram is as follows:



- The *Rab17* gene has 5 transcripts. According to the structure of *Rab17* gene, exon3 of *Rab17-201* (ENSMUST00000027529.11) transcript is recommended as the knockout region. The region contains 152bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rab17* gene. The brief process is as follows: CRISPR/Cas9 system 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 and cell types.

Notice

- The *Rab17* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Rab17 RAB17, member RAS oncogene family [*Mus musculus* (house mouse)]

Gene ID: 19329, updated on 10-Oct-2019

Summary

Official Symbol Rab17 provided by [MGI](#)
Official Full Name RAB17, member RAS oncogene family provided by [MGI](#)
Primary source [MGI:MGI:104640](#)
See related [Ensembl:ENSMUSG00000026304](#)
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 AW413472
Expression Biased expression in large intestine adult (RPKM 16.5), kidney adult (RPKM 11.3) and 12 other tissues [See more](#)
Orthologs [human](#) [all](#)

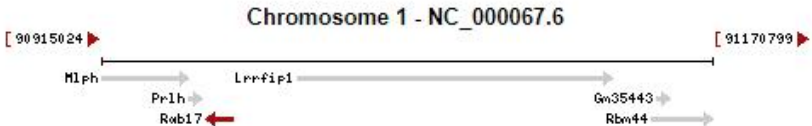
Genomic context

Location: 1 D; 1 45.84 cM

See Rab17 in [Genome Data Viewer](#)

Exon count: 7

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	1	NC_000067.6 (90958133..90969673, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	1	NC_000067.5 (92854710..92866197, complement)

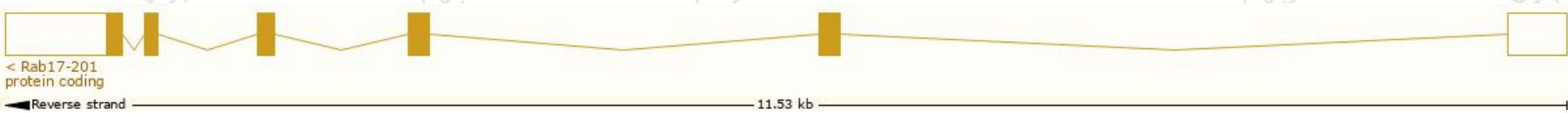


Transcript information (Ensembl)

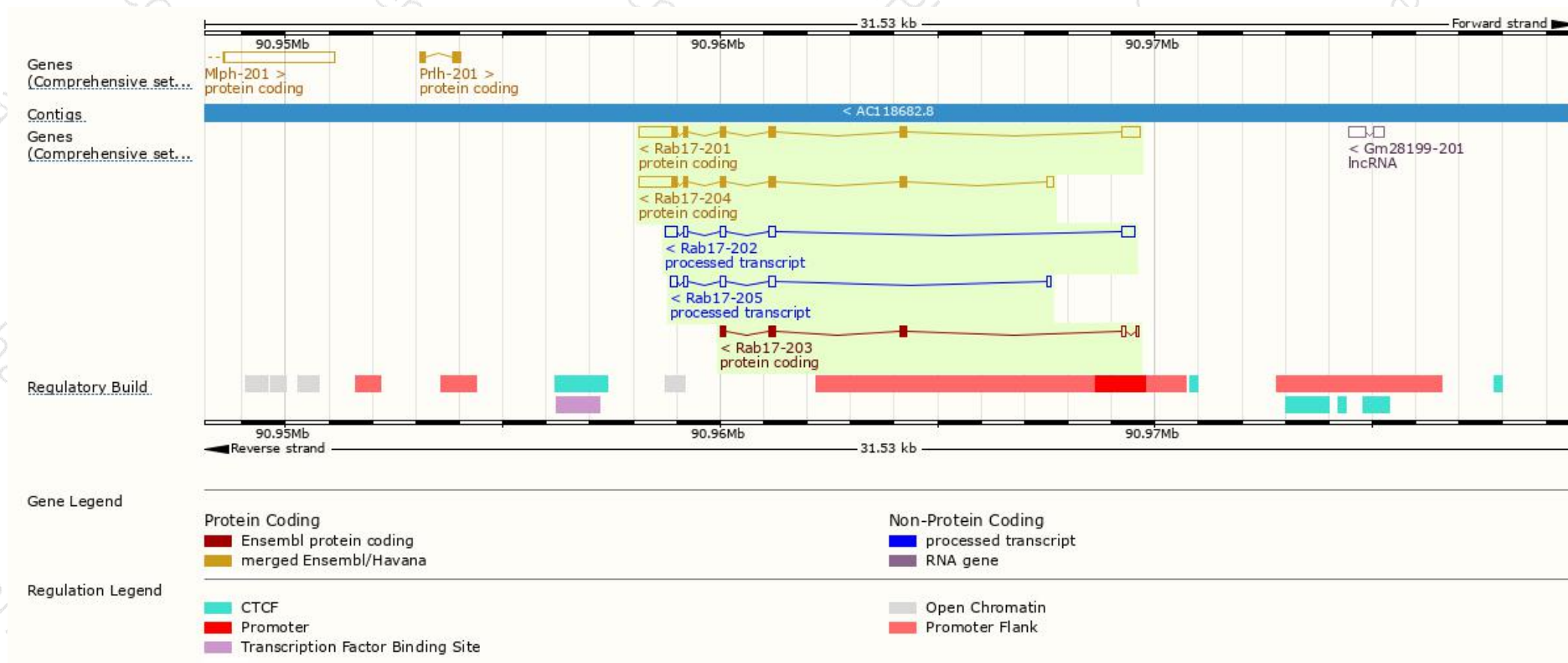
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rab17-201	ENSMUST00000027529.11	1831	214aa	Protein coding	CCDS15156	P35292 Q0PD39	TSL:1 Gencode basic APPRIS P1
Rab17-204	ENSMUST00000131428.7	1557	214aa	Protein coding	CCDS15156	P35292 Q0PD39	TSL:1 Gencode basic APPRIS P1
Rab17-203	ENSMUST00000130042.1	611	145aa	Protein coding	-	D3YVQ6	CDS 3' incomplete TSL:3
Rab17-202	ENSMUST00000128226.7	960	No protein	Processed transcript	-	-	TSL:3
Rab17-205	ENSMUST00000135819.1	628	No protein	Processed transcript	-	-	TSL:3

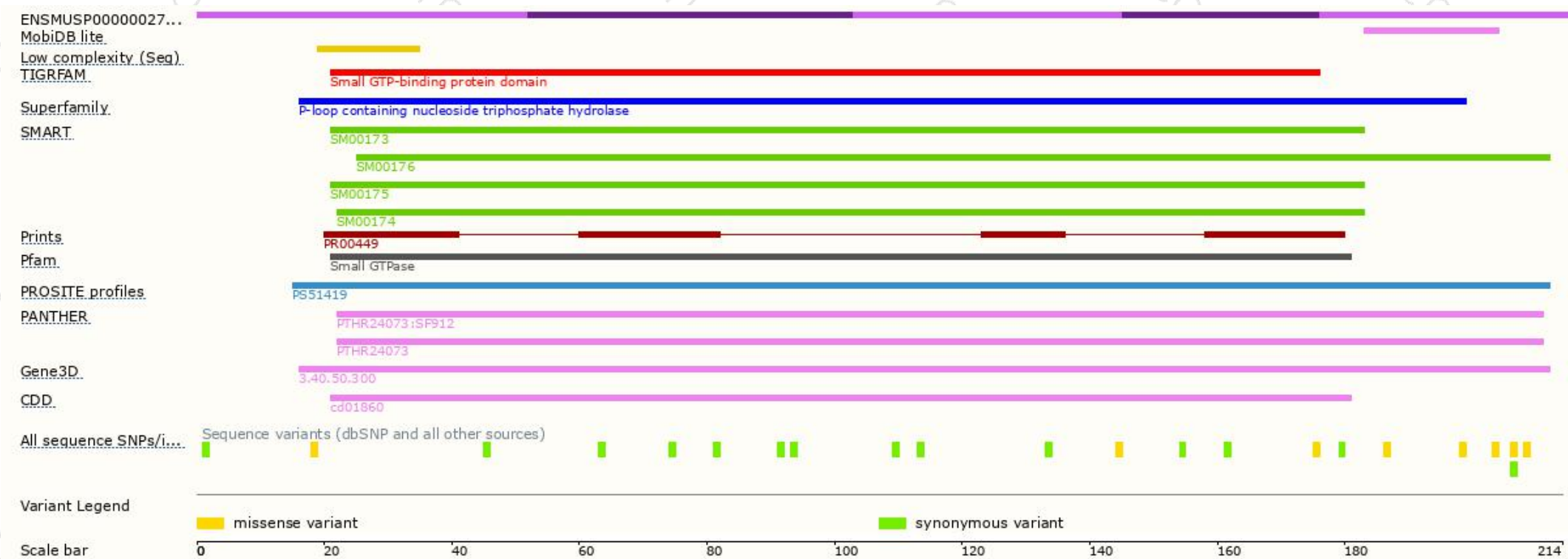
The strategy is based on the design of *Rab17-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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