Rab17 Cas9-KO Strategy

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Project Overview

Project Name	*Rab17*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

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

Technical routes

➢ 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

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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

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)

Chromosome 1 - NC_000067.6

[90915024 ▶   [91170799 ▶

Mlph ▸   Lrrfip1 ▸

Prlh ▸   Gm35443 ▸

Rab17 ◂   Rbm44 ▸
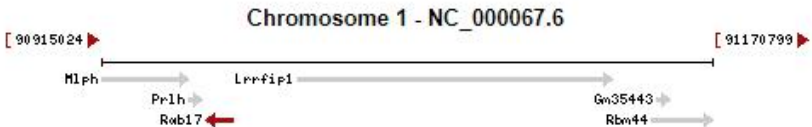
Transcript information（Ensembl）

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:

< Rab17-201
protein coding

◄ Reverse strand   11.53 kb
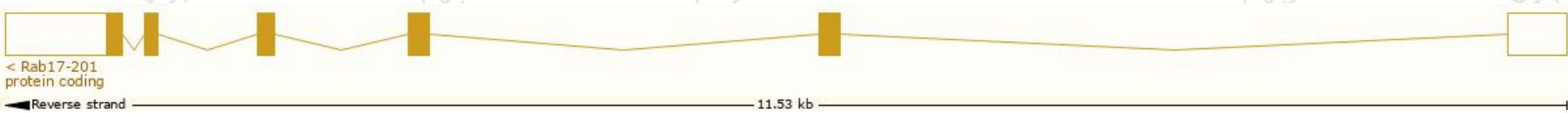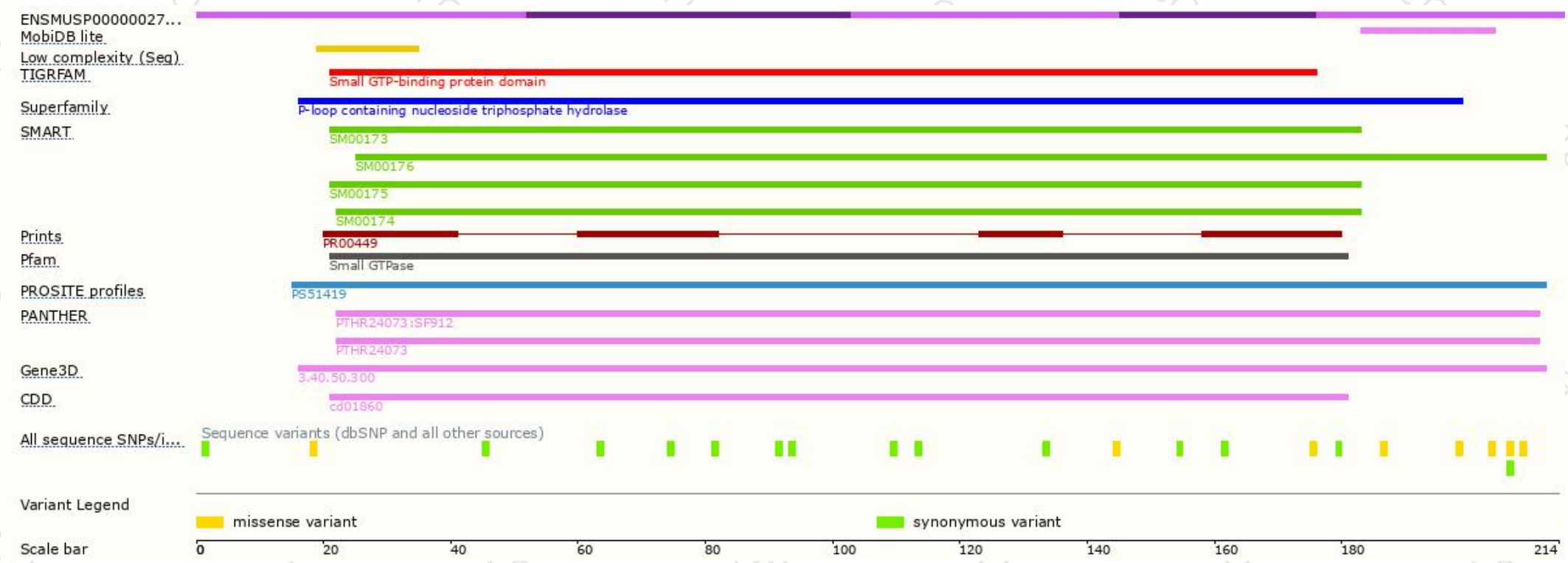
Genomic location distribution
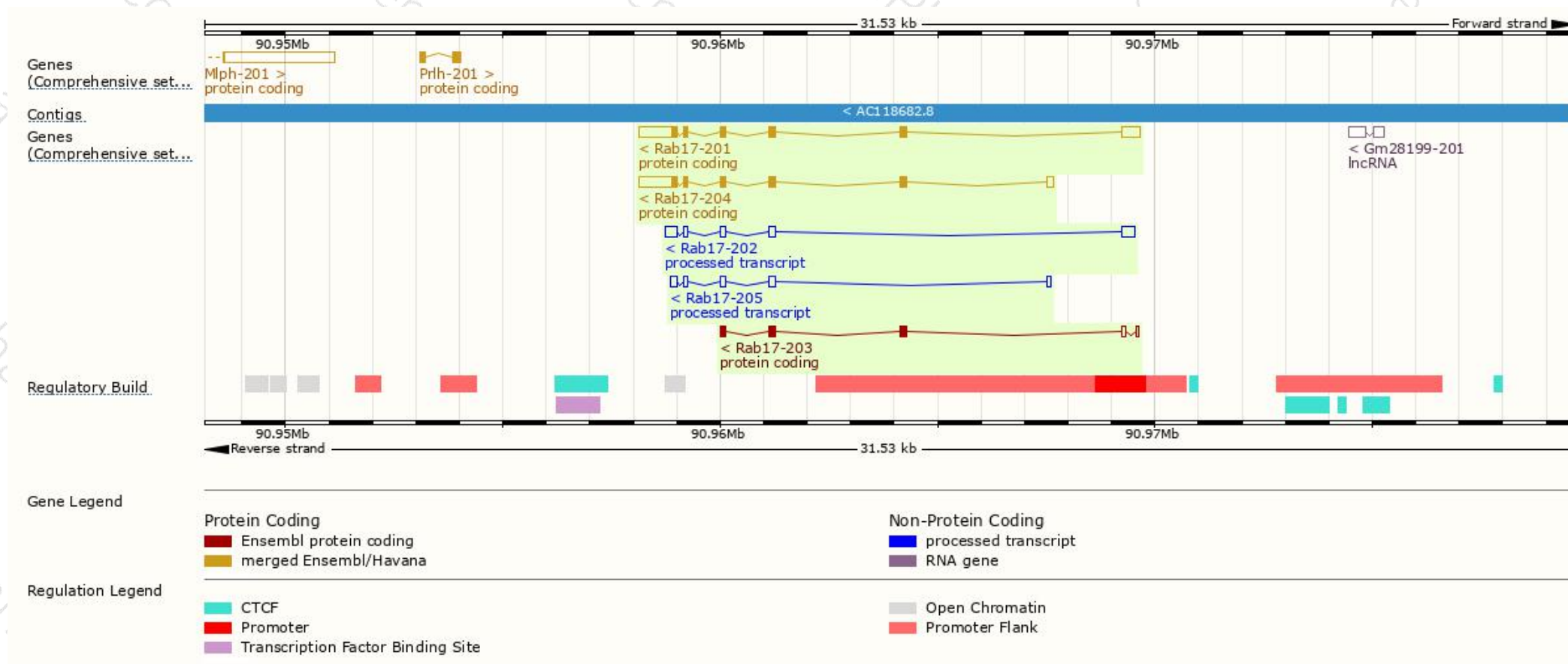
Protein domain

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