

***Rab31* Cas9-KO Strategy**

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Project Overview

Project Name

Rab31

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rab31* gene. The schematic diagram is as follows:



- The *Rab31* gene has 2 transcripts. According to the structure of *Rab31* gene, exon2 of *Rab31-201* (ENSMUST00000070673.8) transcript is recommended as the knockout region. The region contains 80bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rab31* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Rab31* 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)

Rab31 RAB31, member RAS oncogene family [*Mus musculus* (house mouse)]

Gene ID: 106572, updated on 12-Aug-2019

Summary

Official Symbol Rab31 provided by [MGI](#)
Official Full Name RAB31, member RAS oncogene family provided by [MGI](#)
Primary source [MGI:MGI:1914603](#)
See related [Ensembl:ENSMUSG00000056515](#)
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 Rab22B; AI415285; 1700093E07Rik
Expression Ubiquitous expression in ovary adult (RPKM 24.0), cortex adult (RPKM 19.7) and 27 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 17; 17 E1.1

See Rab31 in [Genome Data Viewer](#)

Exon count: 7

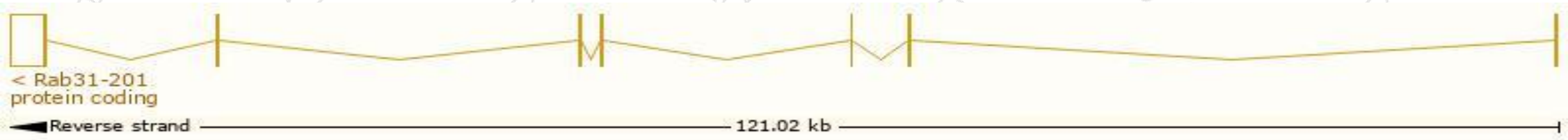
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	17	NC_000083.6 (65651726..65772752, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	17	NC_000083.5 (66001066..66122092, complement)

Transcript information (Ensembl)

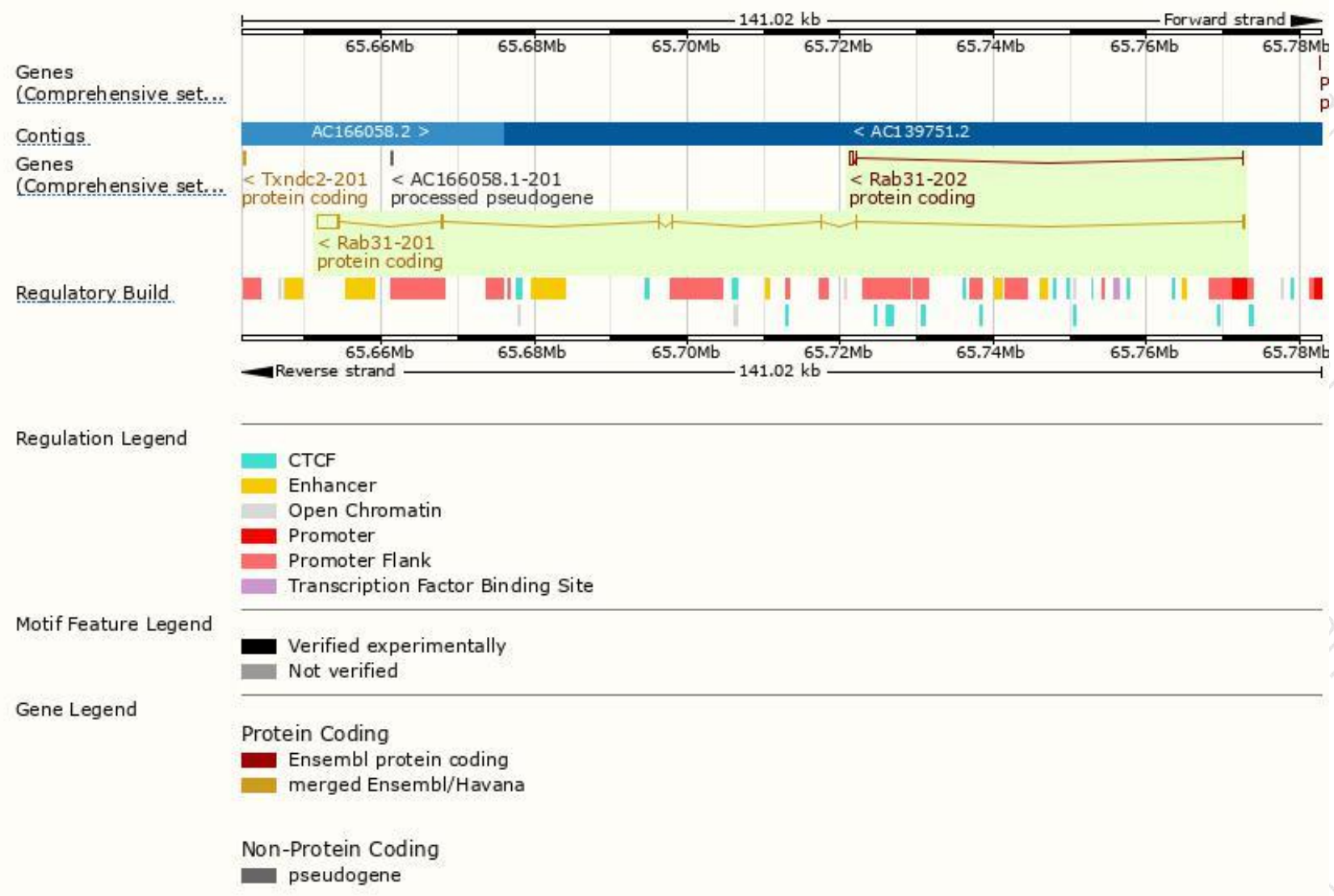
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rab31-201	ENSMUST00000070673.8	3473	195aa	Protein coding	CCDS50166	Q3TXV4	TSL:1 GENCODE basic APPRIS P1
Rab31-202	ENSMUST00000233258.1	555	44aa	Protein coding	-	Q3TM43	GENCODE basic

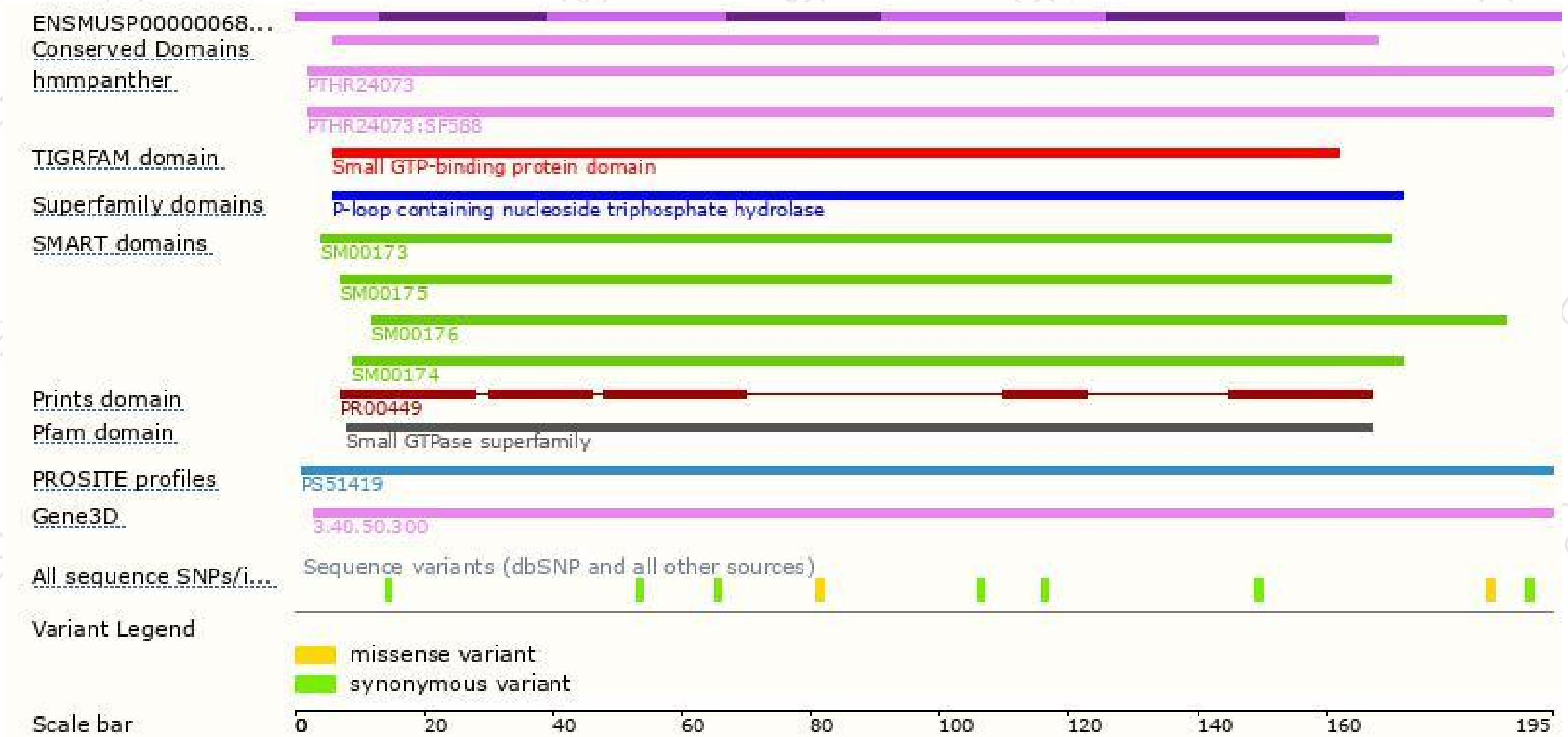
The strategy is based on the design of *Rab31-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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