

***Rab13* Cas9-CKO Strategy**

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Date: 2020-02-27

Project Overview

Project Name

Rab13

Project type

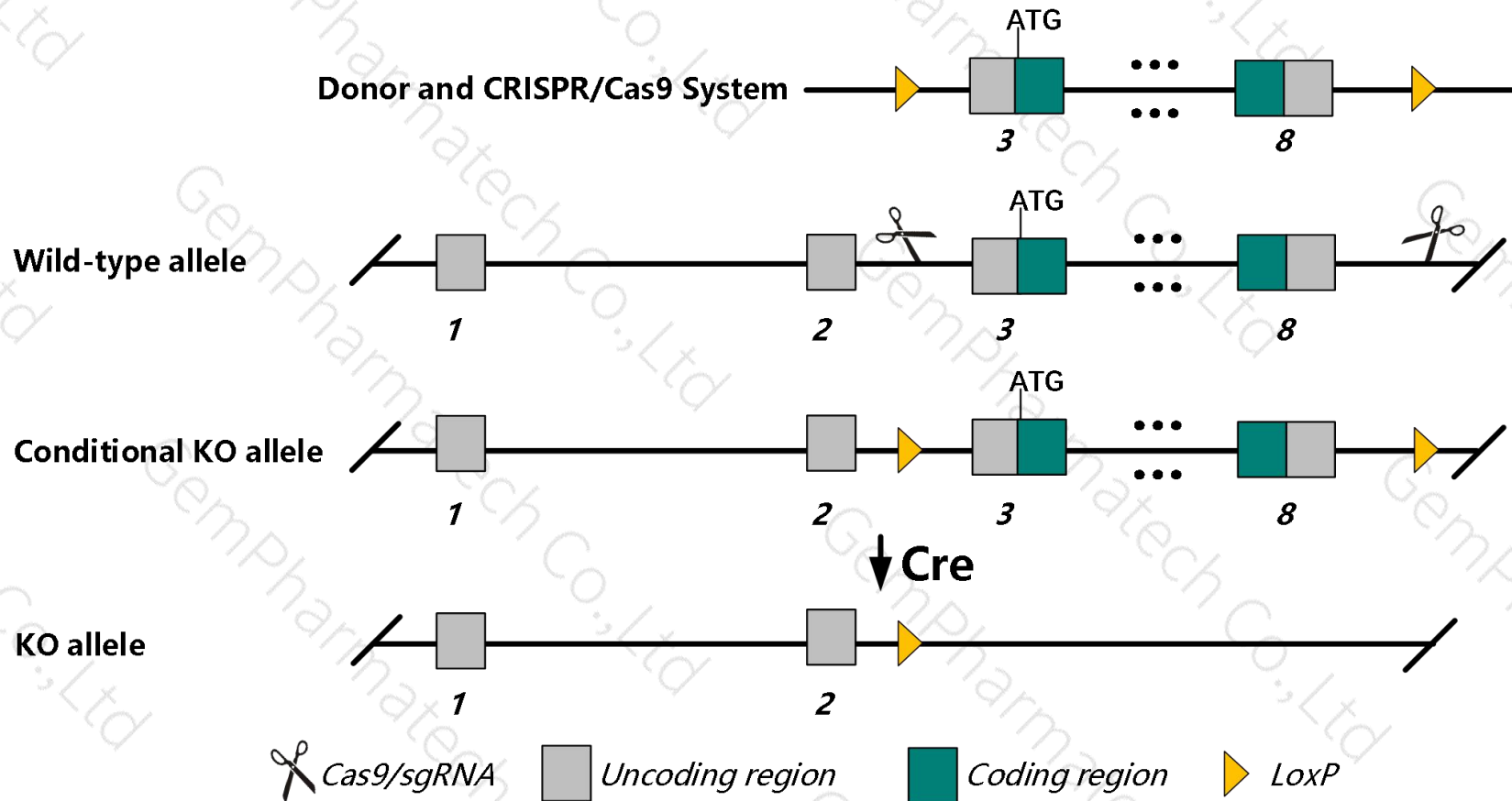
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rab13* gene. The schematic diagram is as follows:



- The *Rab13* gene has 3 transcripts. According to the structure of *Rab13* gene, exon3-exon8 of *Rab13-202* (ENSMUST00000107373.7) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rab13* 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

- Transcript *Rab13*-203 may be destroyed directly.
- The floxed region is near to the N-terminal of *Jtb* gene, this strategy may influence the regulatory function of the N-terminal of *Jtb* gene.
- The *Rab13* gene is located on the Chr3. 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)

Rab13 RAB13, member RAS oncogene family [*Mus musculus* (house mouse)]

Gene ID: 68328, updated on 10-Oct-2019

Summary

- Official Symbol

Rab13 provided by [MGI](#)
- Official Full Name

RAB13, member RAS oncogene family provided by [MGI](#)
- Primary source

[MGI:MGI:1927232](#)
- See related

[Ensembl:ENSMUSG000000027935](#)
- 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

0610007N03Rik; B230212B15Rik
- Expression

Ubiquitous expression in CNS E11.5 (RPKM 7.2), limb E14.5 (RPKM 5.9) and 27 other tissues [See more](#)
- Orthologs

[human](#) [all](#)

Genomic context

Location: 3 F1; 3 39.21 cM

See Rab13 in [Genome Data Viewer](#)

Exon count: 9

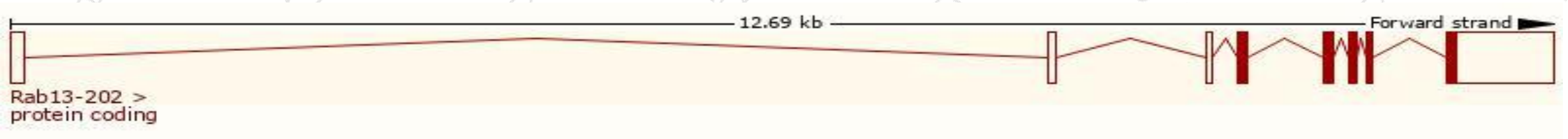
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	3	NC_000069.6 (90213715..90226387)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	3	NC_000069.5 (90024739..90029885)

Transcript information (Ensembl)

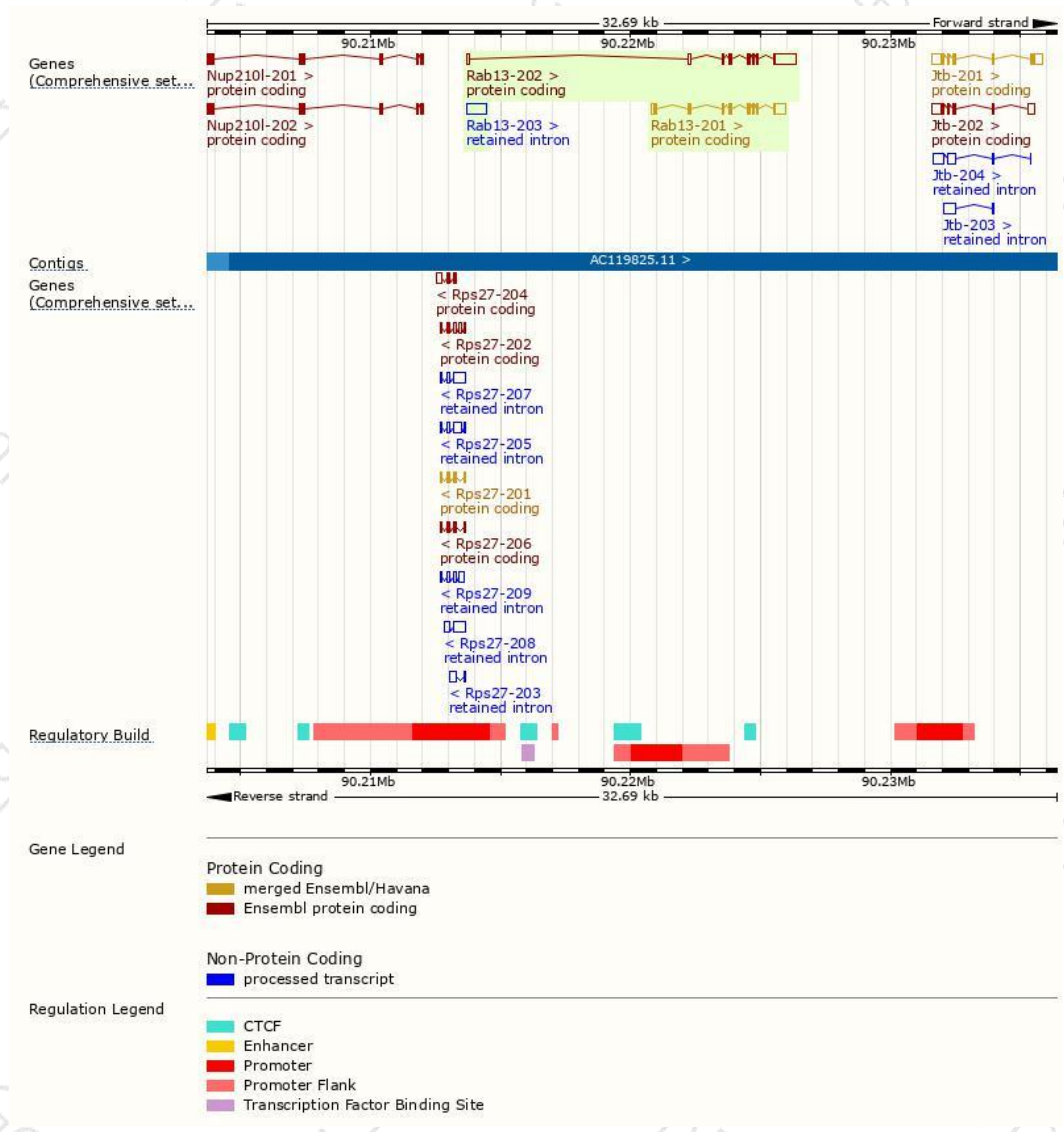
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rab13-202	ENSMUST00000107373.7	1415	121aa	Protein coding	CCDS79962	D3YUS4	TSL:1 GENCODE basic
Rab13-201	ENSMUST00000065418.6	1107	202aa	Protein coding	CCDS17522	Q9DD03	TSL:1 GENCODE basic APPRIS P1
Rab13-203	ENSMUST00000198809.1	762	No protein	Retained intron	-	-	TSL:NA

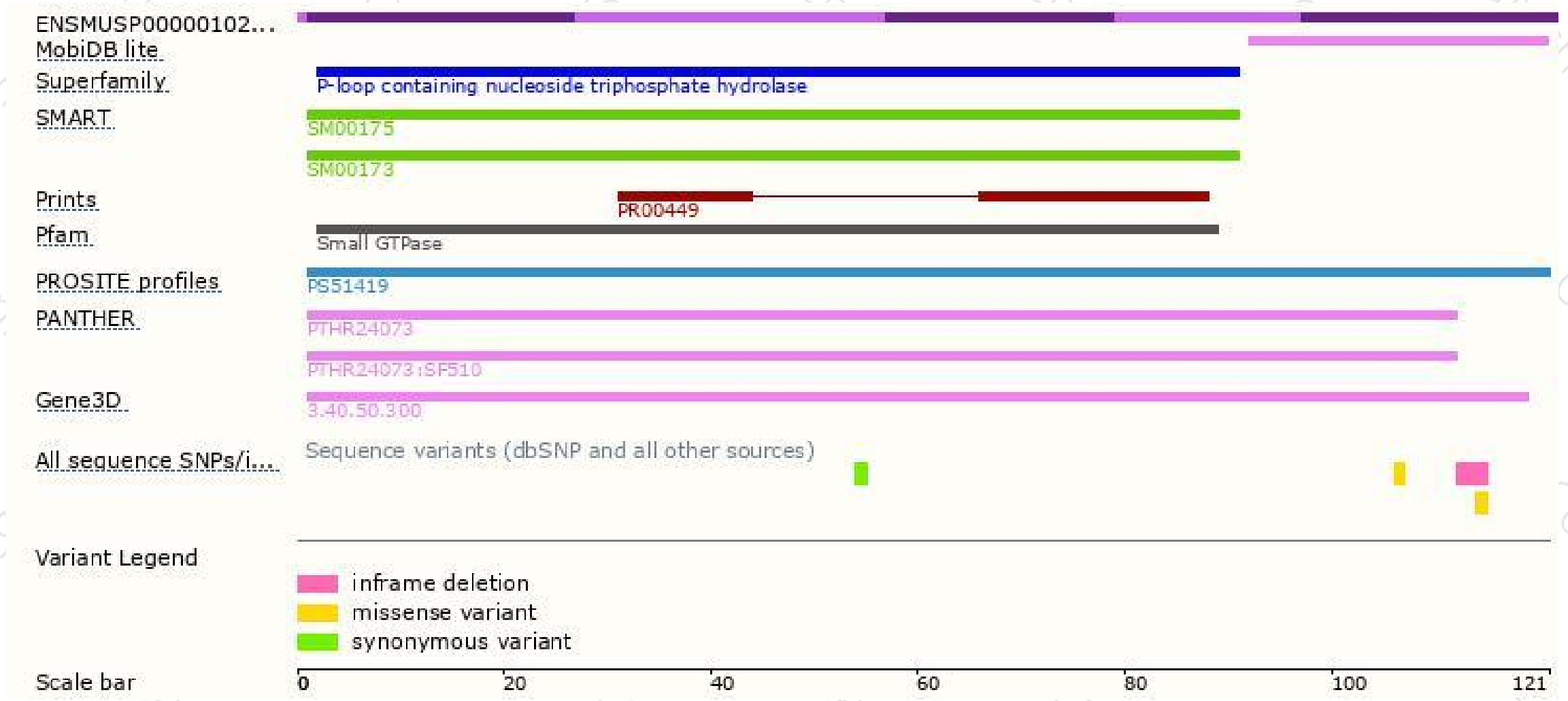
The strategy is based on the design of *Rab13-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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