

***Rab21* Cas9-KO Strategy**

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Project Overview

Project Name

Rab21

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rab21* gene. The schematic diagram is as follows:



- The *Rab21* gene has 2 transcripts. According to the structure of *Rab21* gene, exon2-exon6 of *Rab21-201* (ENSMUST00000020343.8) transcript is recommended as the knockout region. The region contains 376bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rab21* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Rab21* gene is located on the Chr10. 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.
- Transcript *Rab21*-202 may not be affected.
- 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)

Rab21 RAB21, member RAS oncogene family [Mus musculus (house mouse)]

Gene ID: 216344, updated on 31-Jan-2019

Summary



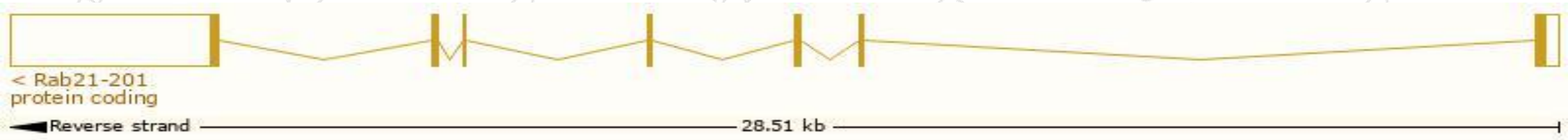
Official Symbol	Rab21 provided by MGI
Official Full Name	RAB21, member RAS oncogene family provided by MGI
Primary source	MGI:MGI:894308
See related	Ensembl:ENSMUSG00000020132
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9630024B22
Expression	Ubiquitous expression in heart adult (RPKM 17.5), bladder adult (RPKM 15.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

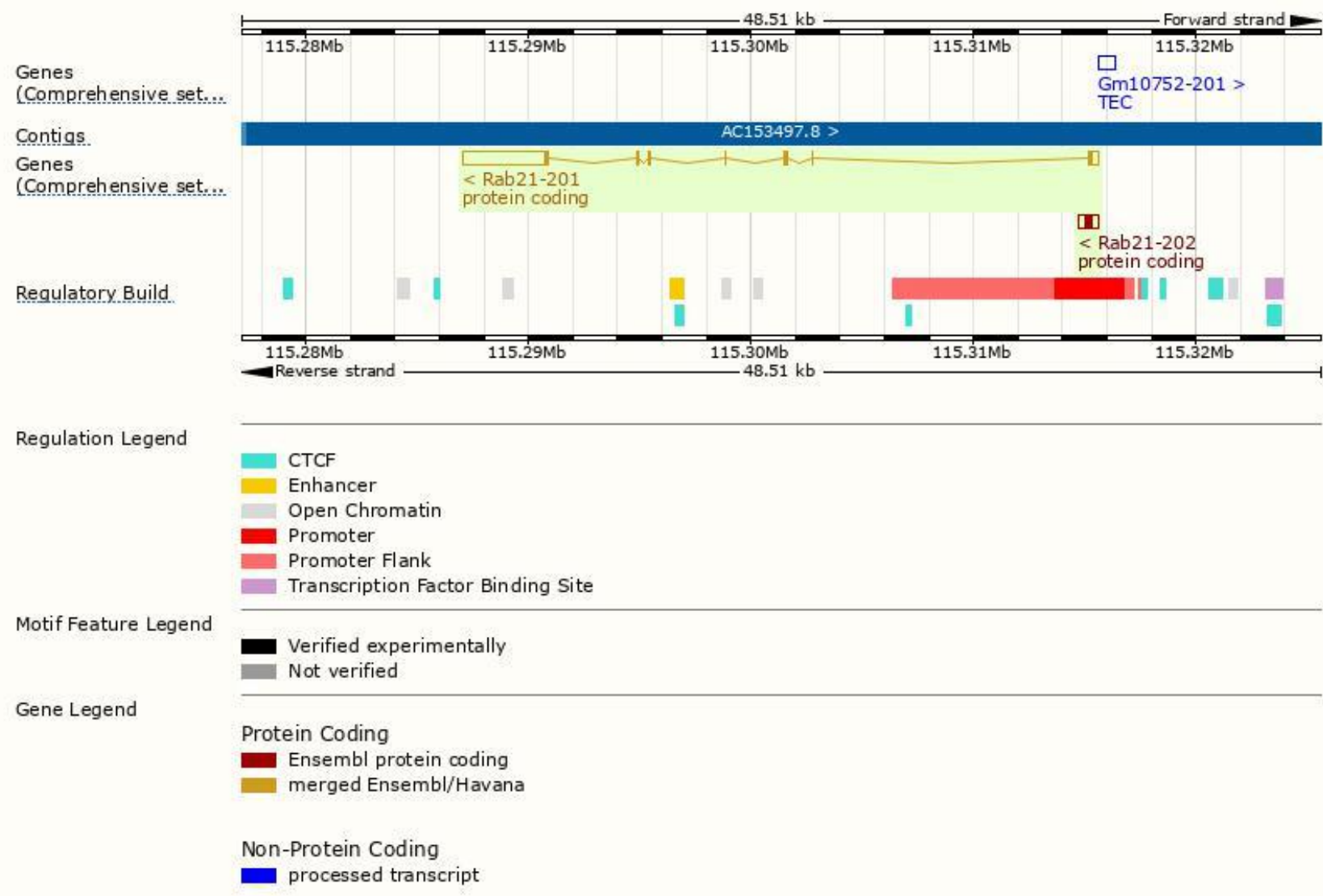
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rab21-201	ENSMUST00000020343.8	4602	222aa	Protein coding	CCDS24177	P35282 Q0PD35	TSL:1 GENCODE basic APPRIS P1
Rab21-202	ENSMUST000000218831.1	843	94aa	Protein coding	-	A0A1W2P6Z4	TSL:NA GENCODE basic

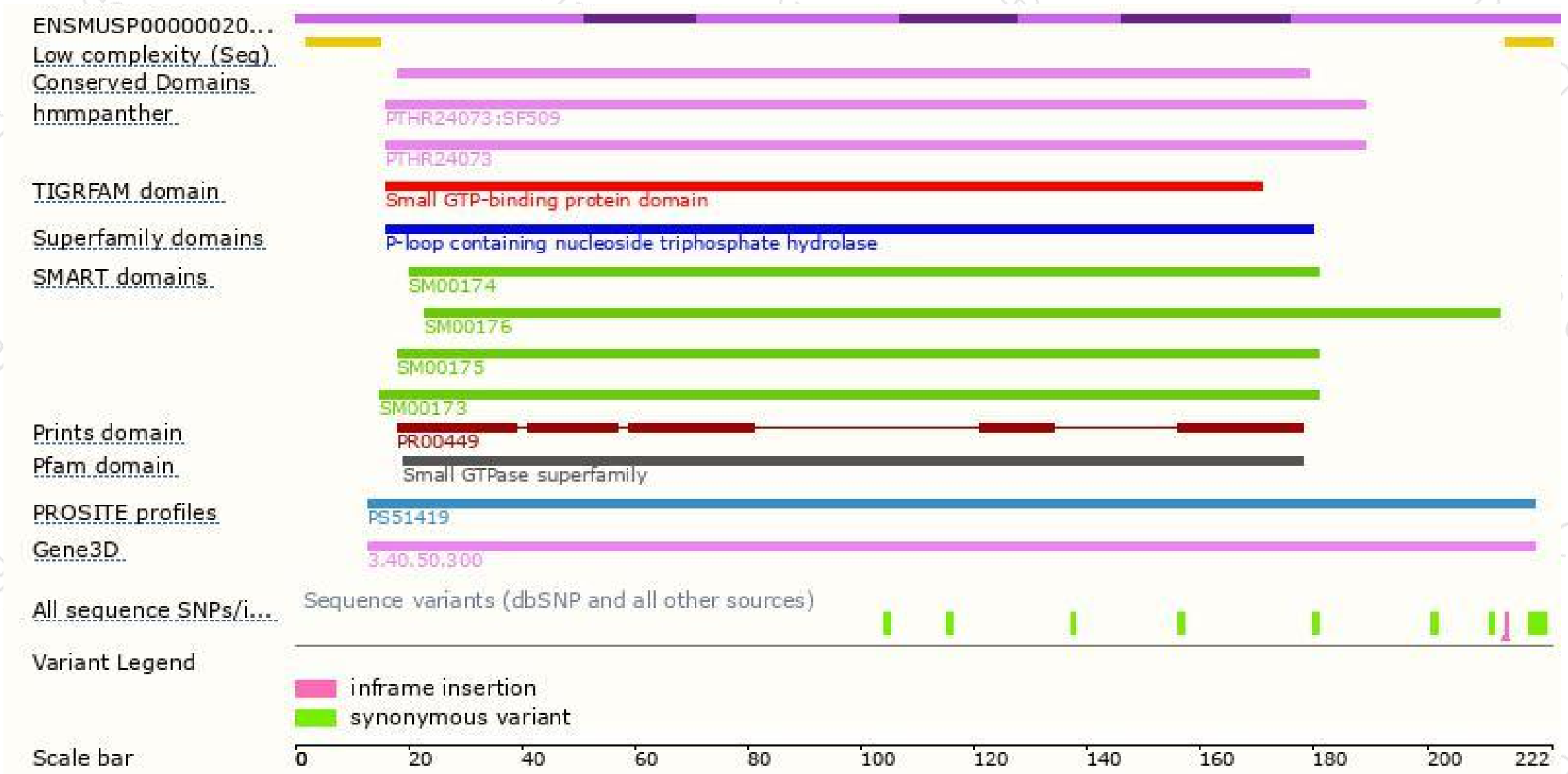
The strategy is based on the design of *Rab21-201* transcript,The transcription is shown below



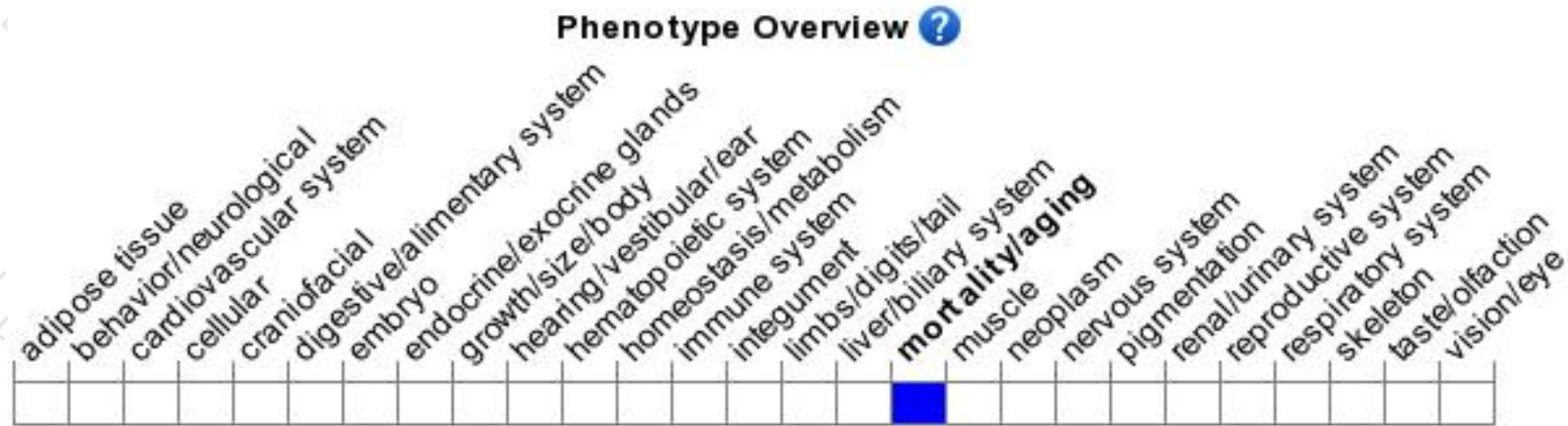
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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