

***Rab35* Cas9-KO Strategy**

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Project Overview

Project Name

Rab35

Project type

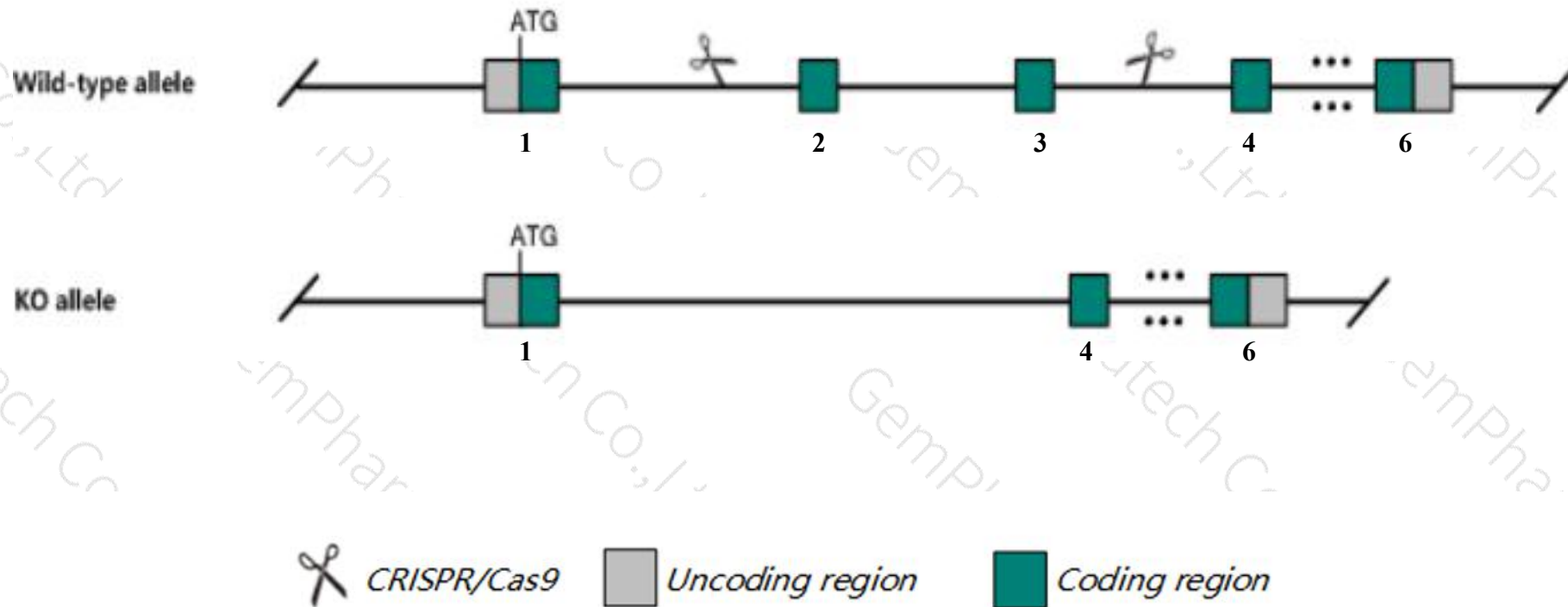
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rab35* gene. The schematic diagram is as follows:



- The *Rab35* gene has 2 transcripts. According to the structure of *Rab35* gene, exon2-exon3 of *Rab35-201*(ENSMUST00000031492.14) transcript is recommended as the knockout region. The region contains 175bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rab35* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Rab35* gene is located on the Chr5. 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)

Rab35 RAB35, member RAS oncogene family [Mus musculus (house mouse)]

Gene ID: 77407, updated on 13-Mar-2020

Summary



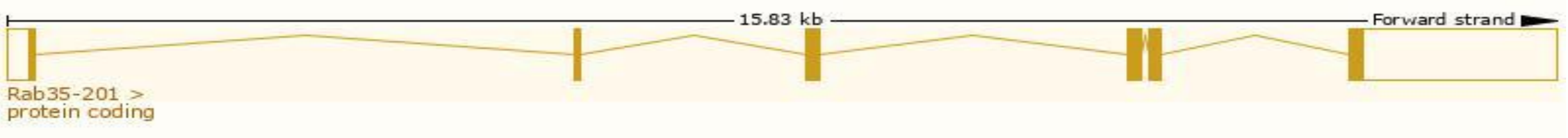
Official Symbol	Rab35 provided by MGI
Official Full Name	RAB35, member RAS oncogene family provided by MGI
Primary source	MGI:MGI:1924657
See related	Ensembl:ENSMUSG00000029518
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9530019H02Rik, AU040256, H-ray, RAB1C, RAY
Expression	Ubiquitous expression in thymus adult (RPKM 51.4), adrenal adult (RPKM 39.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

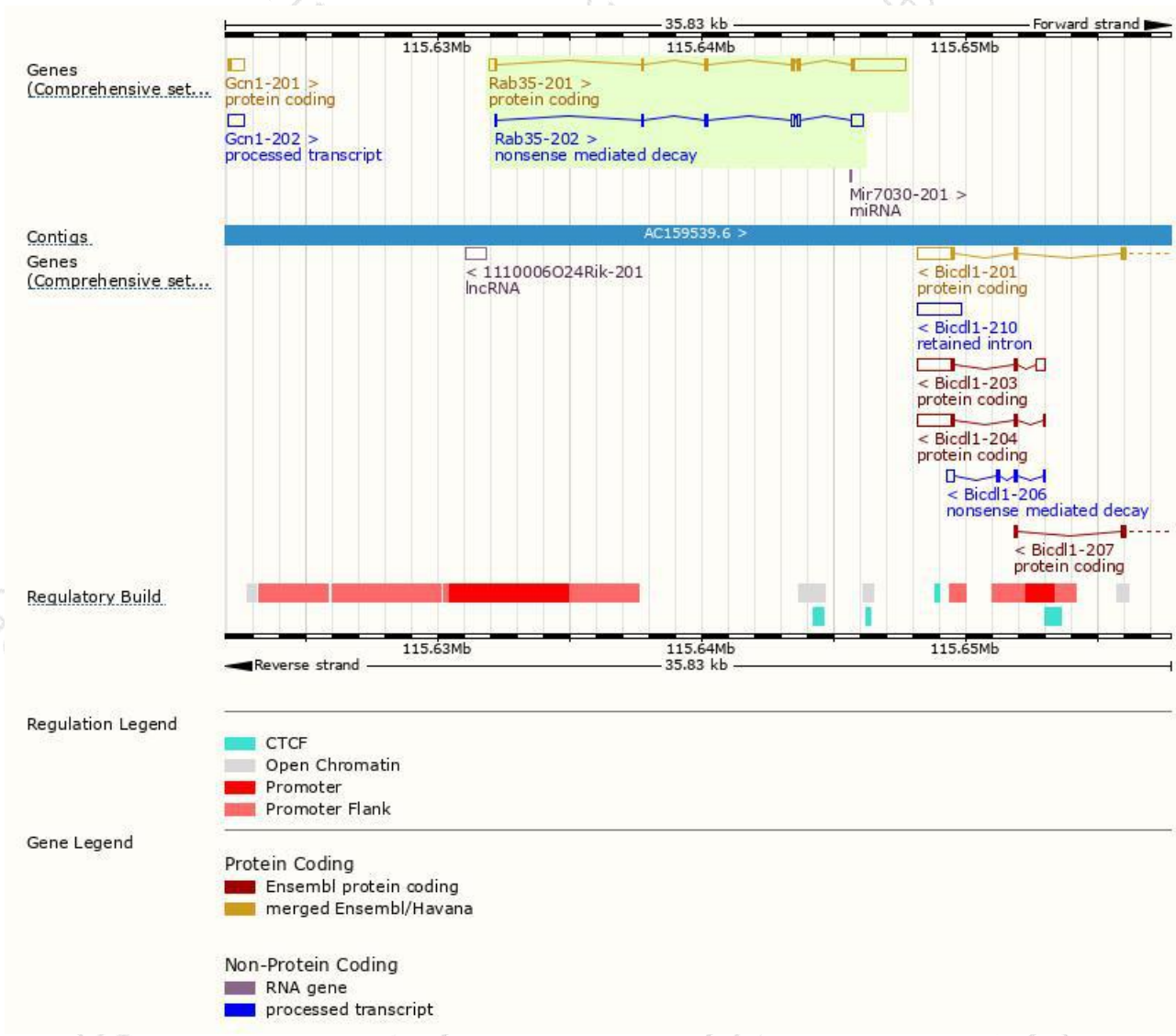
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rab35-201	ENSMUST00000031492.14	2820	201aa	Protein coding	CCDS19596	Q3U0T9 Q6PHN9	TSL:1 GENCODE basic APPRIS P1
Rab35-202	ENSMUST00000138885.1	966	55aa	Nonsense mediated decay	-	S4R1W7	TSL:3

The strategy is based on the design of *Rab35-201* transcript,the transcription is shown below:



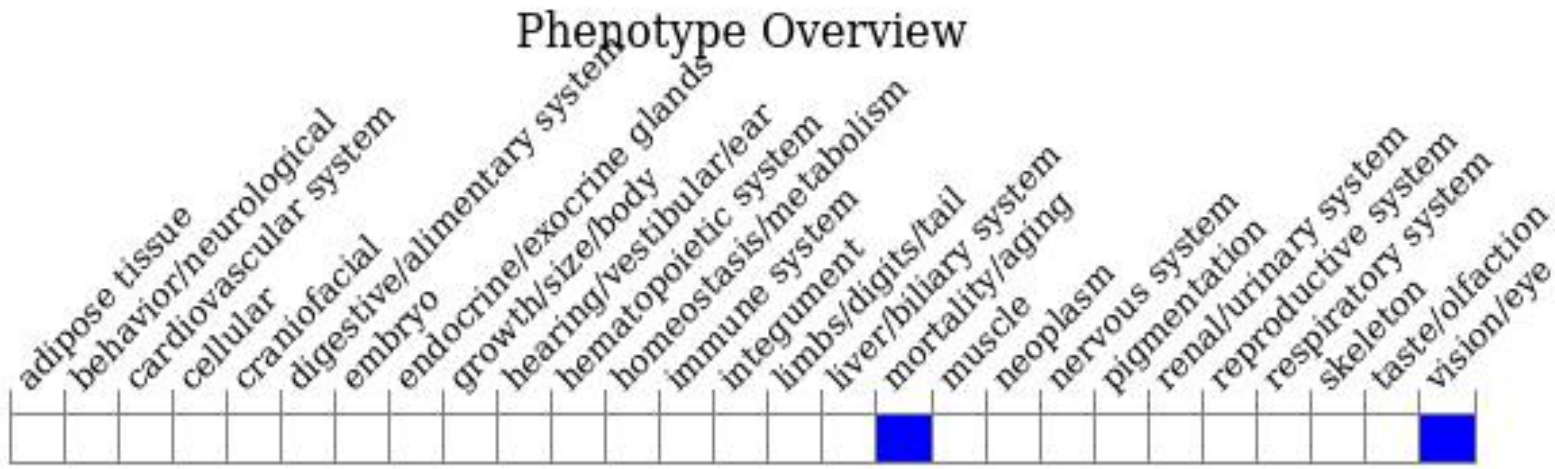
Genomic location distribution



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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