

***Rabl6* Cas9-CKO Strategy**

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Design Date: 2021-6-7

Project Overview

Project Name

Rabl6

Project type

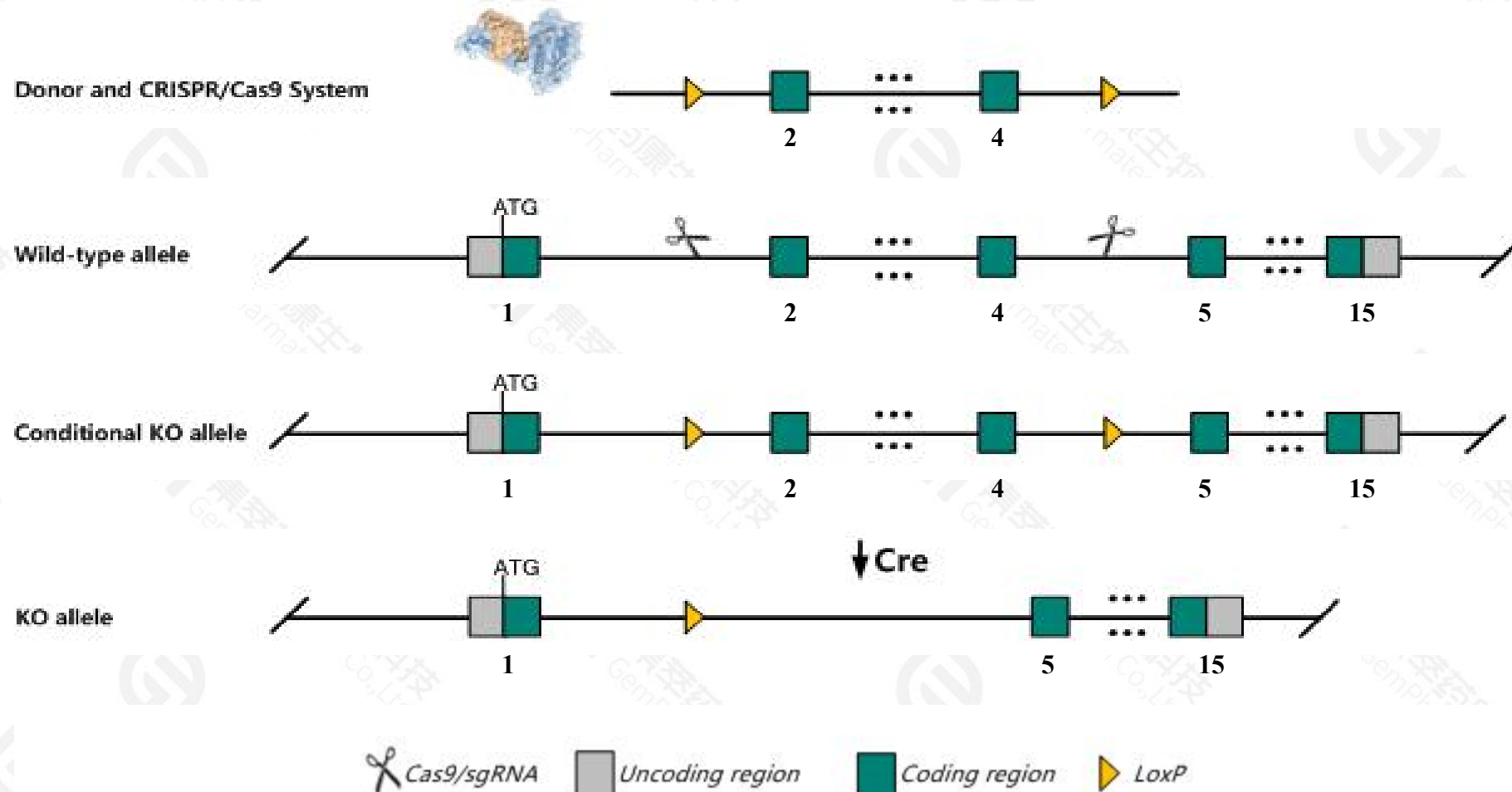
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rabl6* gene. The schematic diagram is as follows:



Technical routes

- The *Rabl6* gene has 9 transcripts. According to the structure of *Rabl6* gene, exon2-exon4 of *Rabl6*-201(ENSMUST00000058137.9) transcript is recommended as the knockout region. The region contains 236bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rabl6* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor was constructed. Cas9, sgRNA 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 was 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.

- The *Rabl6* gene is located on the Chr2. 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)

Rabl6 RAB, member RAS oncogene family-like 6 [Mus musculus (house mouse)]

Gene ID: 227624, updated on 3-Jan-2021

Summary



Official Symbol Rabl6 provided by [MGI](#)

Official Full Name RAB, member RAS oncogene family-like 6 provided by [MGI](#)

Primary source [MGI:MGI:2442633](#)

See related [Ensembl:ENSMUSG00000015087](#)

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 B230208H17Rik, Rbe, Rbel, Rbel1, Rbel1a, Rbel1b, parf

Expression Ubiquitous expression in adrenal adult (RPKM 56.2), ovary adult (RPKM 45.2) and 28 other tissues [See more](#)

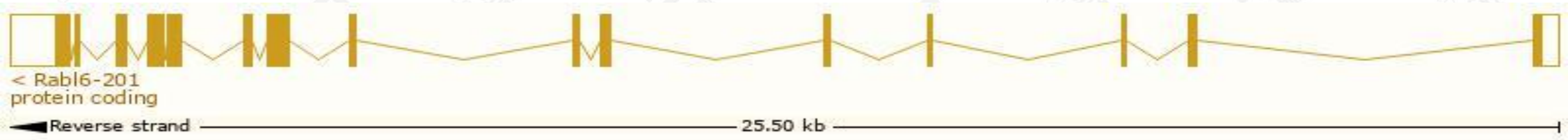
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

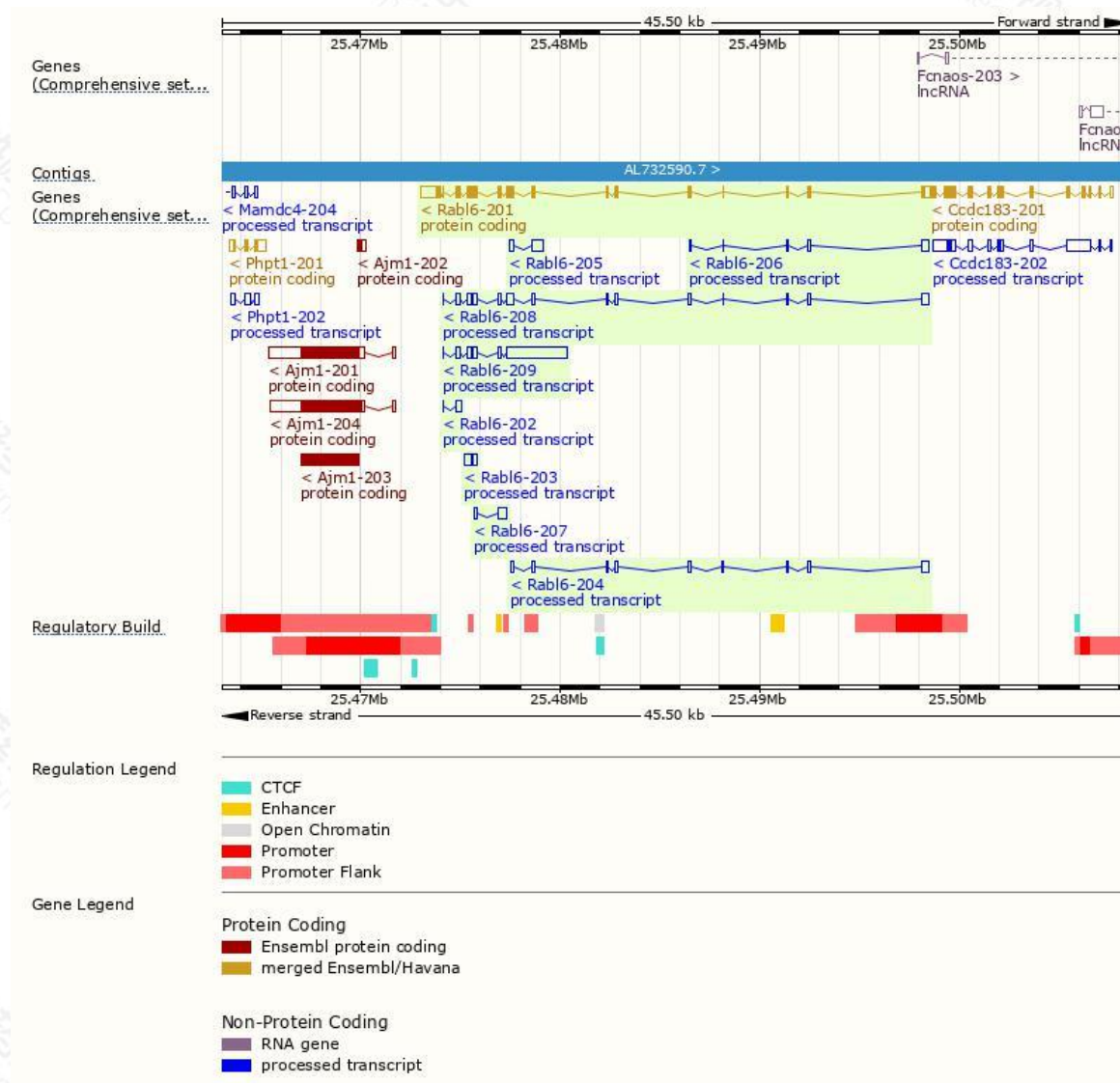
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rabl6-201	ENSMUST00000058137.9	3230	725aa	Protein coding	CCDS38076		TSL:1 , GENCODE basic , APPRIS P1 ,
Rabl6-209	ENSMUST00000150206.8	3908	No protein	Processed transcript	-		TSL:1 ,
Rabl6-208	ENSMUST00000146012.8	2190	No protein	Processed transcript	-		TSL:1 ,
Rabl6-204	ENSMUST00000140635.8	1165	No protein	Processed transcript	-		TSL:5 ,
Rabl6-205	ENSMUST00000140778.2	734	No protein	Processed transcript	-		TSL:5 ,
Rabl6-206	ENSMUST00000140785.2	612	No protein	Processed transcript	-		TSL:3 ,
Rabl6-207	ENSMUST00000143855.2	600	No protein	Processed transcript	-		TSL:3 ,
Rabl6-203	ENSMUST00000135084.2	548	No protein	Processed transcript	-		TSL:2 ,
Rabl6-202	ENSMUST00000128942.2	312	No protein	Processed transcript	-		TSL:2 ,

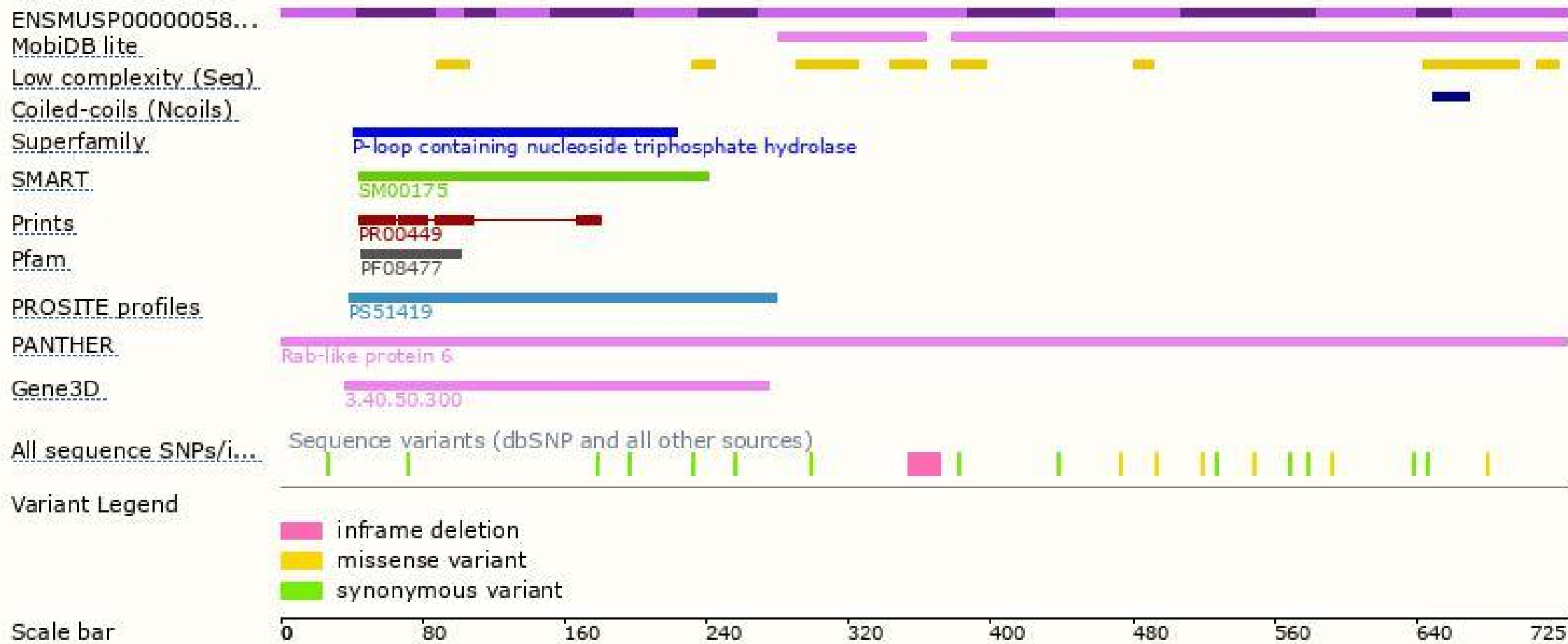
The strategy is based on the design of *Rabl6-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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