

***Rinl* Cas9-KO Strategy**

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Project Overview

Project Name

Rinl

Project type

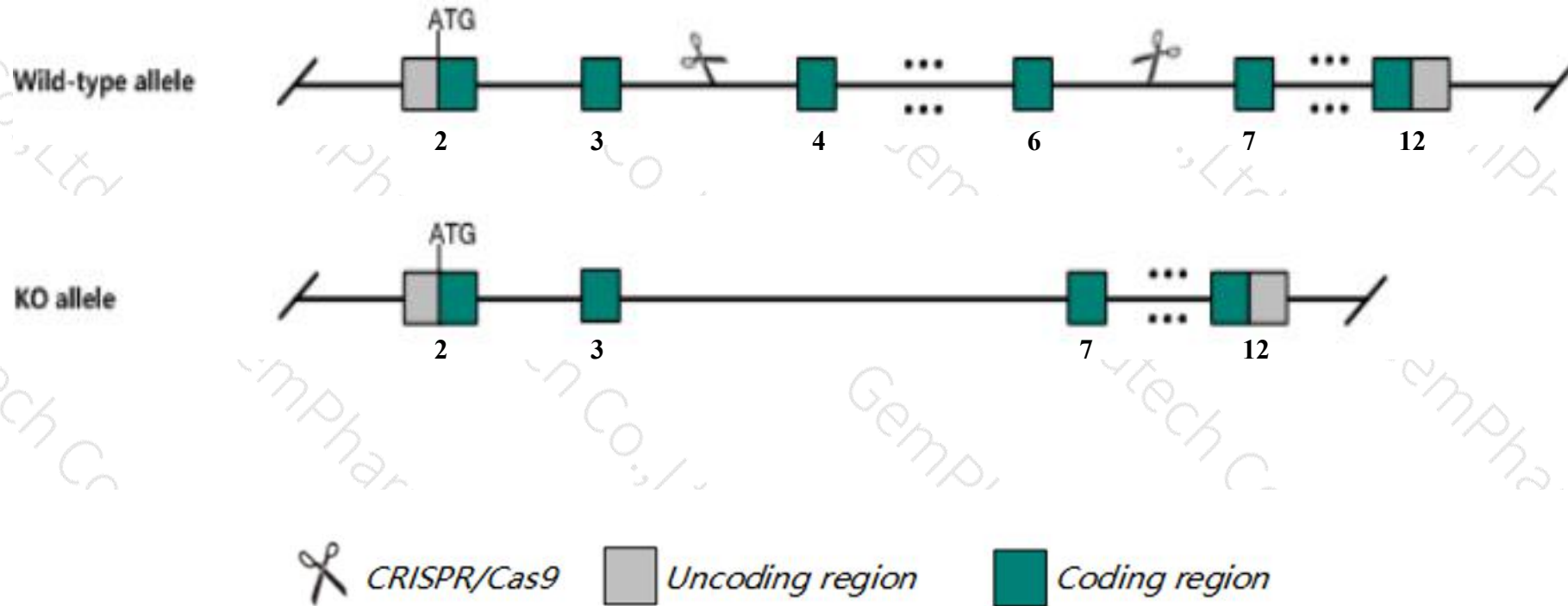
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Rinl* gene has 6 transcripts. According to the structure of *Rinl* gene, exon4-exon6 of *Rinl*-206(ENSMUST00000209035.1) transcript is recommended as the knockout region. The region contains 241bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rinl* 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.

- Transcript *Rinl*-204 may not be affected.
- The *Rinl* gene is located on the Chr7. 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)

Rinl Ras and Rab interactor-like [*Mus musculus* (house mouse)]

Gene ID: 320435, updated on 3-Oct-2020

Summary

Official Symbol	Rinl provided by MGI
Official Full Name	Ras and Rab interactor-like provided by MGI
Primary source	MGI:MGI:2444024
See related	Ensembl:ENSMUSG00000051735
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	5830482F20Rik; 9930116N10Rik
Expression	Biased expression in thymus adult (RPKM 20.1), spleen adult (RPKM 12.7) and 11 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

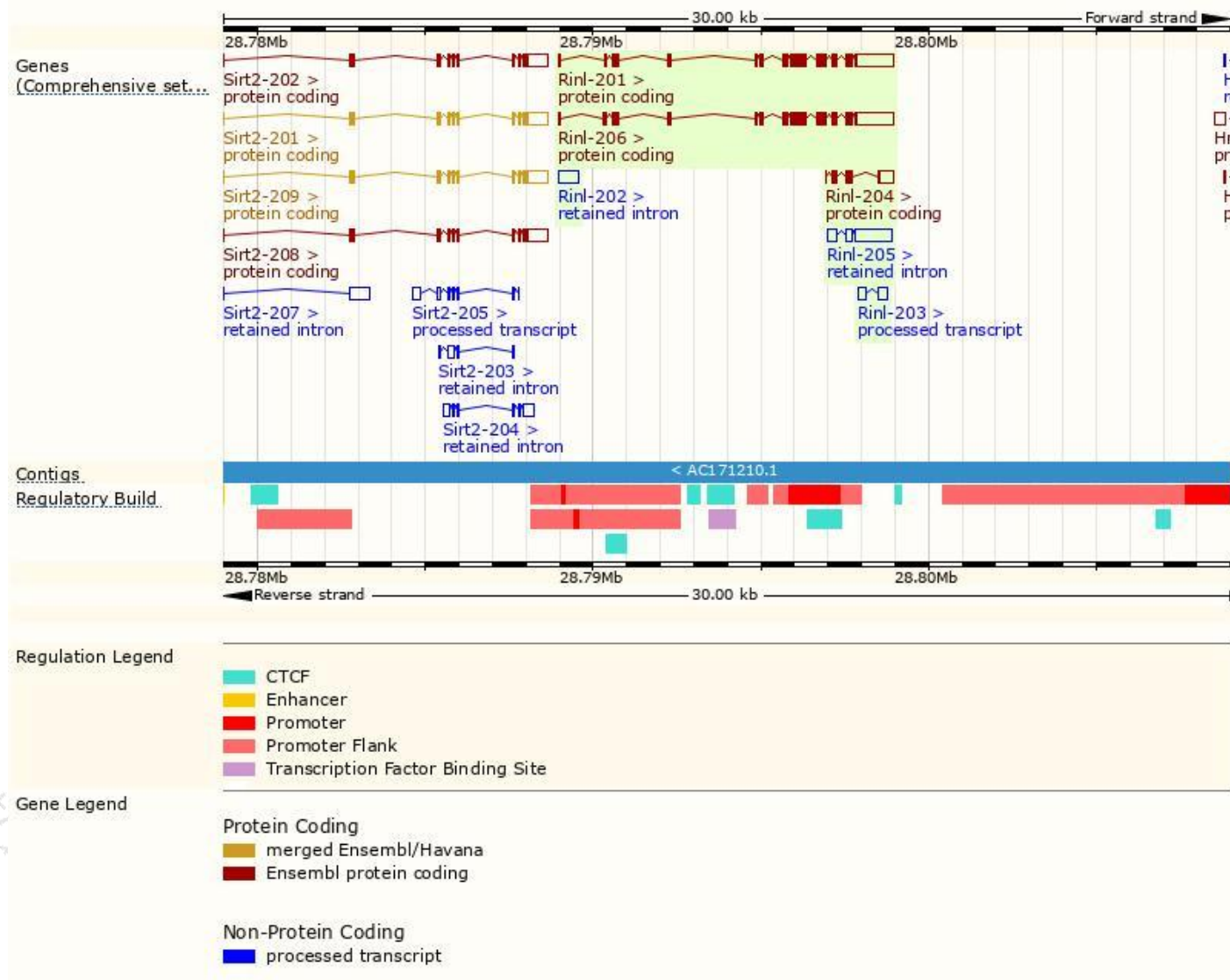
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rinl-206	ENSMUST00000209035.1	2898	563aa	Protein coding	CCDS21056	Q80UW3	TSL:1 GENCODE basic APPRIS P1
Rinl-201	ENSMUST00000059857.7	2871	563aa	Protein coding	CCDS21056	Q80UW3	TSL:1 GENCODE basic APPRIS P1
Rinl-204	ENSMUST00000207462.1	748	117aa	Protein coding	-	A0A140LIA6	CDS 5' incomplete TSL:2
Rinl-203	ENSMUST00000207345.1	489	No protein	Processed transcript	-	-	TSL:3
Rinl-205	ENSMUST00000208149.1	1535	No protein	Retained intron	-	-	TSL:1
Rinl-202	ENSMUST00000207201.1	611	No protein	Retained intron	-	-	TSL:NA

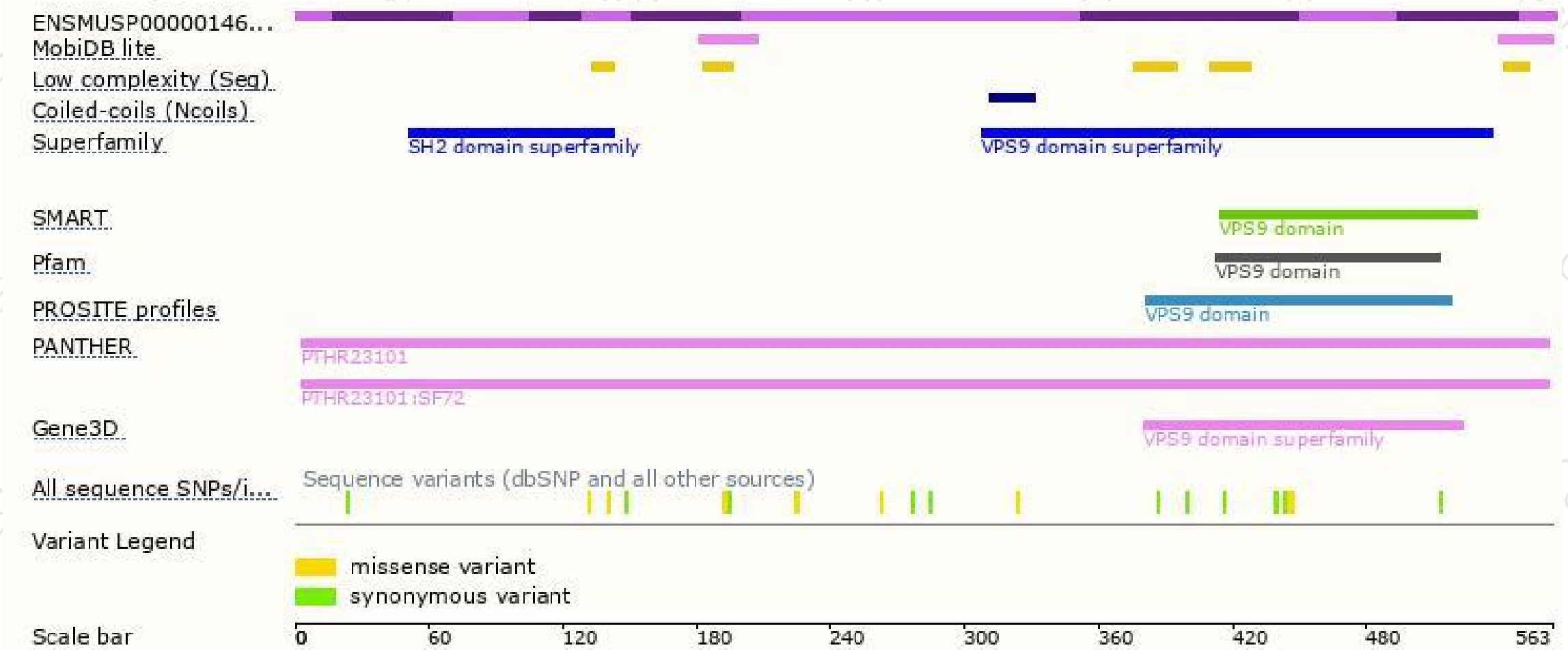
The strategy is based on the design of *Rinl-206* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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