

***Ranbp17* Cas9-CKO Strategy**

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Project Overview

Project Name

Ranbp17

Project type

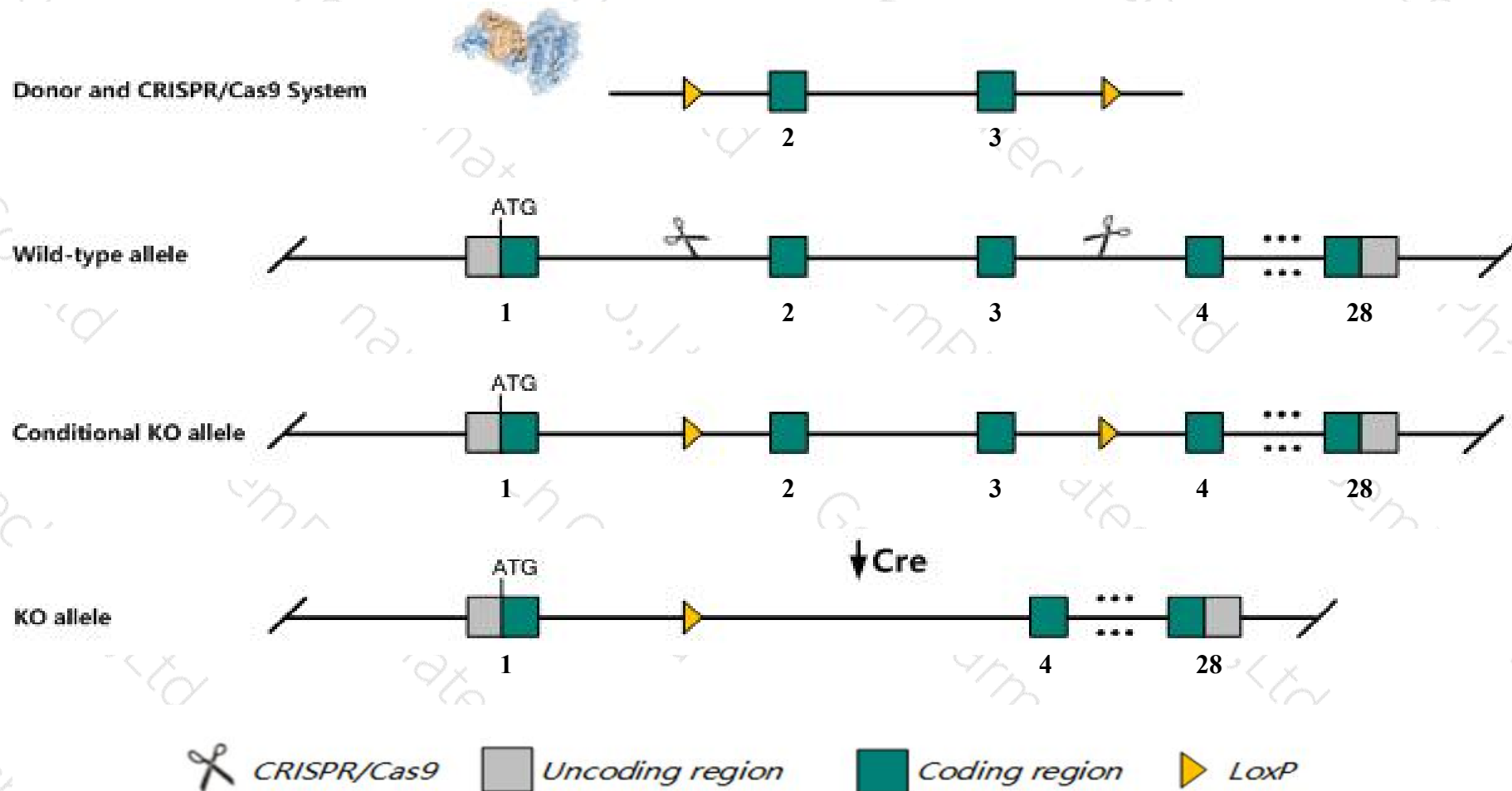
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ranbp17* gene. The schematic diagram is as follows:



- The *Ranbp17* gene has 6 transcripts. According to the structure of *Ranbp17* gene, exon2-exon3 of *Ranbp17*-202(ENSMUST00000102815.9) transcript is recommended as the knockout region. The region contains 238bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ranbp17* 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

- The *Ranbp17* gene is located on the Chr11. 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 *Ranbp17*-205 may not be affected.
- The effect on transcript *Ranbp17*-206 is unknown.
- 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)

Ranbp17 RAN binding protein 17 [Mus musculus (house mouse)]

Gene ID: 66011, updated on 13-Mar-2020

Summary



Official Symbol	Ranbp17 provided by MGI
Official Full Name	RAN binding protein 17 provided by MGI
Primary source	MGI:MGI:1929706
See related	Ensembl:ENSMUSG00000040594
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
Expression	Biased expression in testis adult (RPKM 5.0), CNS E11.5 (RPKM 1.1) and 11 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

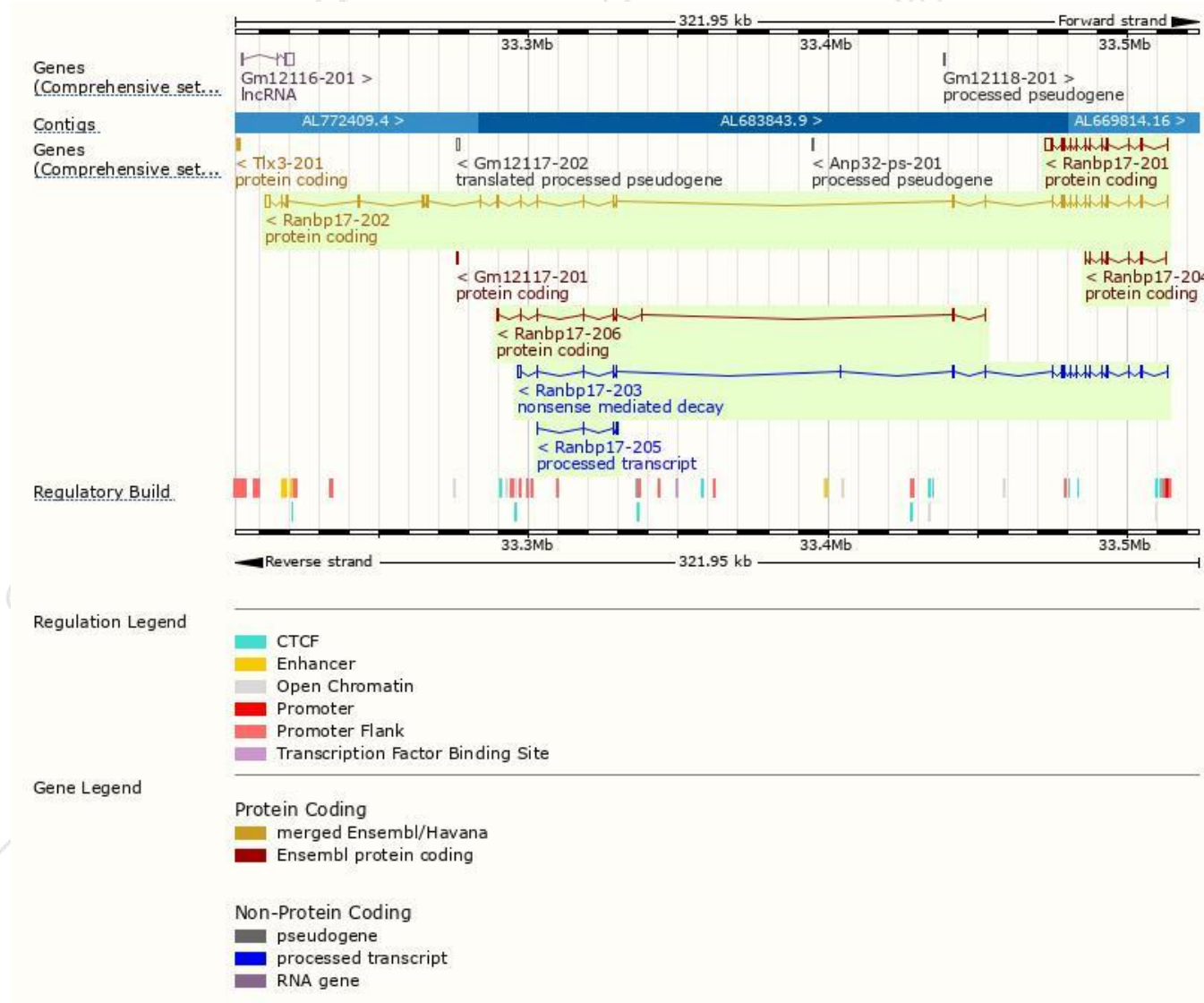
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ranbp17-202	ENSMUST00000102815.9	5001	1088aa	Protein coding	CCDS24534	Q99NF8	TSL:1 GENCODE basic APPRIS P1
Ranbp17-201	ENSMUST00000037522.13	3950	516aa	Protein coding	-	Q5SSA5	TSL:1 GENCODE basic
Ranbp17-206	ENSMUST00000207401.1	896	298aa	Protein coding	-	A0A140LJ90	CDS 5' and 3' incomplete TSL:5
Ranbp17-204	ENSMUST00000147751.1	675	210aa	Protein coding	-	Q5SSA8	CDS 3' incomplete TSL:3
Ranbp17-203	ENSMUST00000129179.7	3364	576aa	Nonsense mediated decay	-	M0QWL9	TSL:1
Ranbp17-205	ENSMUST00000154808.1	635	No protein	Processed transcript	-	-	TSL:3

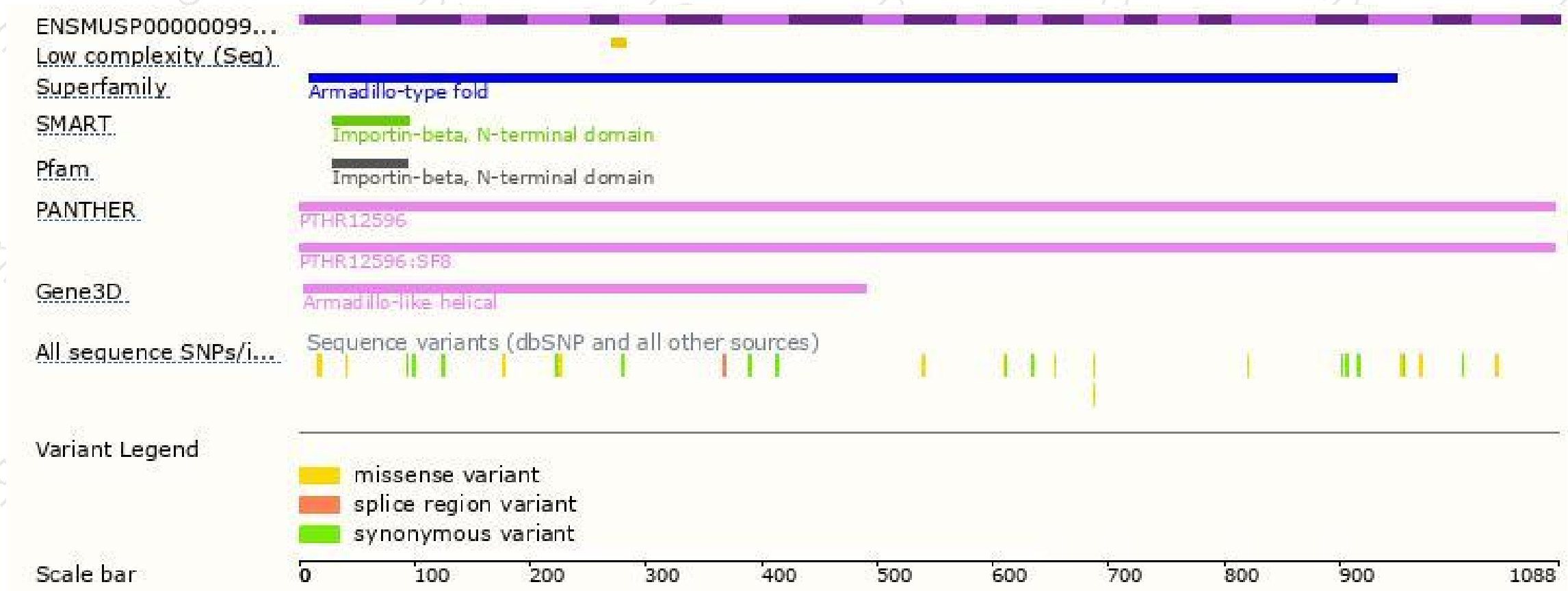
The strategy is based on the design of *Ranbp17-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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