

***Plb1* Cas9-CKO Strategy**

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Project Overview

Project Name

Plb1

Project type

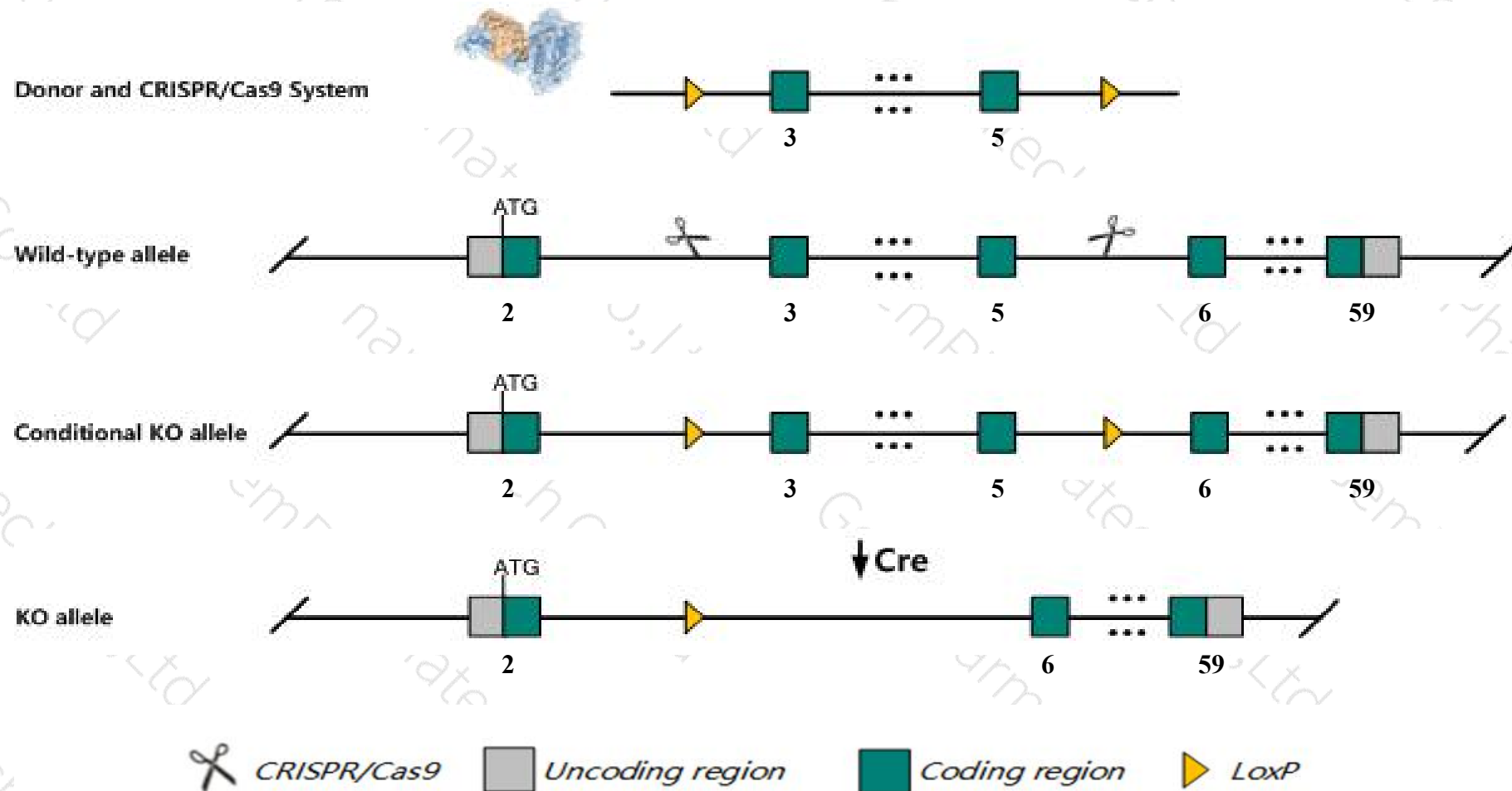
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plb1* gene. The schematic diagram is as follows:



- The *Plb1* gene has 9 transcripts. According to the structure of *Plb1* gene, exon3-exon5 of *Plb1*-206 (ENSMUST00000202220.3) transcript is recommended as the knockout region. The region contains 194bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plb1* 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 *Plb1* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Plb1 phospholipase B1 [Mus musculus (house mouse)]

Gene ID: 665270, updated on 20-Mar-2020

Summary



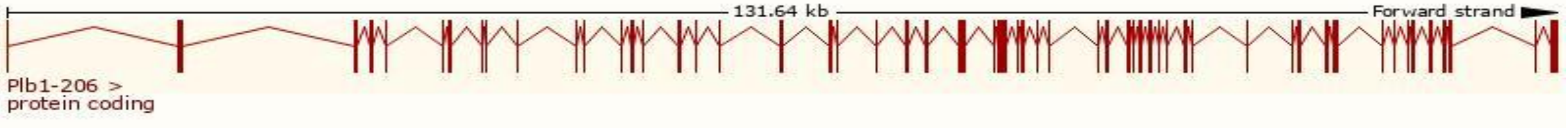
Official Symbol	Plb1 provided by MGI
Official Full Name	phospholipase B1 provided by MGI
Primary source	MGI:MGI:1922406
See related	Ensembl:ENSMUSG00000029134
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4632413E21Rik, 4930433E17Rik, 4930539A06Rik, BC033606
Expression	Biased expression in large intestine adult (RPKM 54.9), testis adult (RPKM 15.4) and 1 other tissue See more
Orthologs	human all

Transcript information (Ensembl)

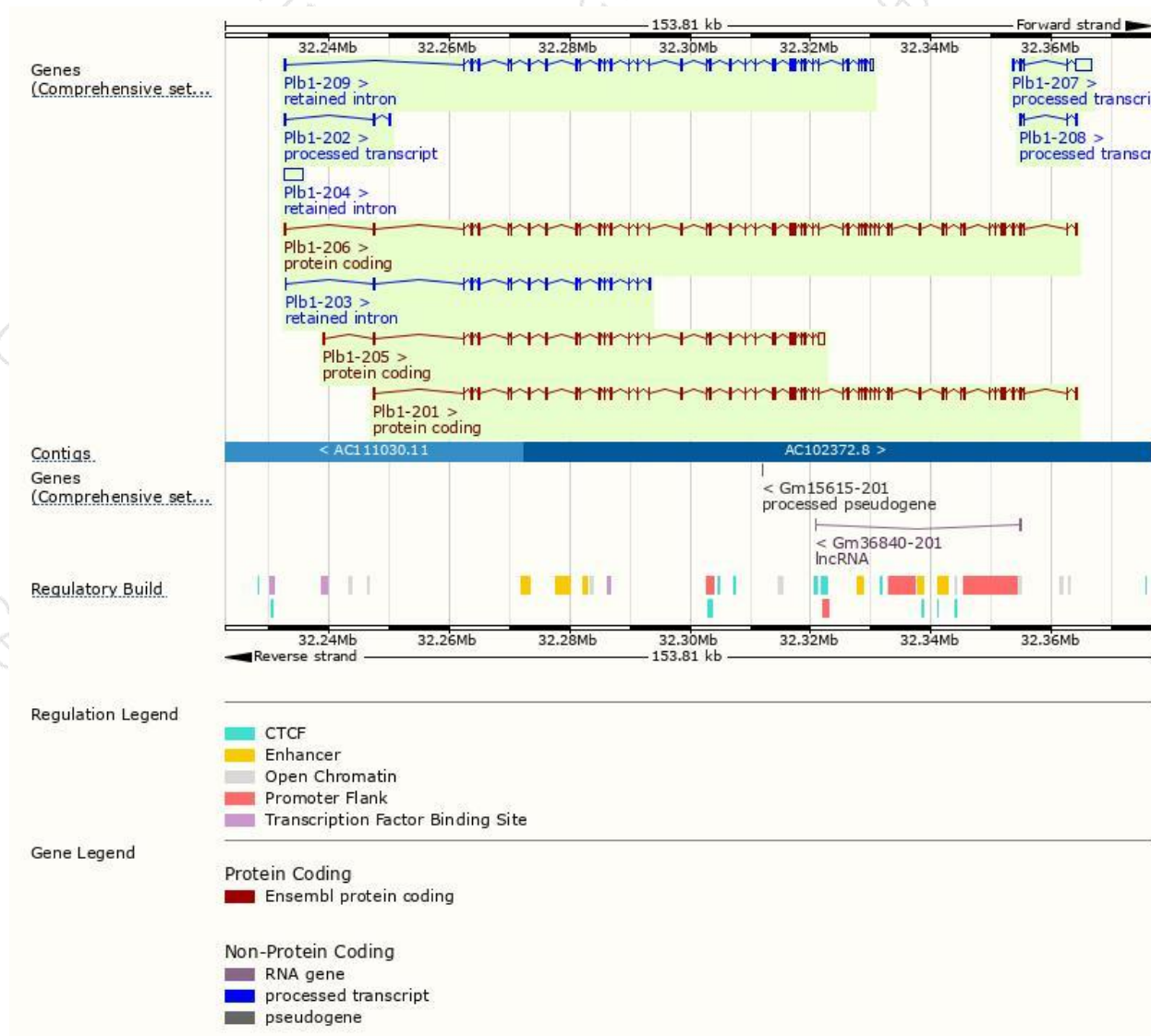
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Plb1-206	ENSMUST00000202220.3	4771	1478aa	Protein coding	CCDS39060	Q3TTY0	TSL:5 GENCODE basic APPRIS P1
Plb1-201	ENSMUST00000101376.2	4699	1478aa	Protein coding	CCDS39060	Q3TTY0	TSL:5 GENCODE basic APPRIS P1
Plb1-205	ENSMUST00000202201.3	3539	778aa	Protein coding	-	Q3TTY0	TSL:1 GENCODE basic
Plb1-207	ENSMUST00000202453.3	2938	No protein	Processed transcript	-	-	TSL:1
Plb1-208	ENSMUST00000202687.1	723	No protein	Processed transcript	-	-	TSL:2
Plb1-202	ENSMUST00000200878.3	440	No protein	Processed transcript	-	-	TSL:1
Plb1-209	ENSMUST00000202886.3	3147	No protein	Retained intron	-	-	TSL:1
Plb1-204	ENSMUST00000201578.1	2883	No protein	Retained intron	-	-	TSL:NA
Plb1-203	ENSMUST00000201313.1	1560	No protein	Retained intron	-	-	TSL:1

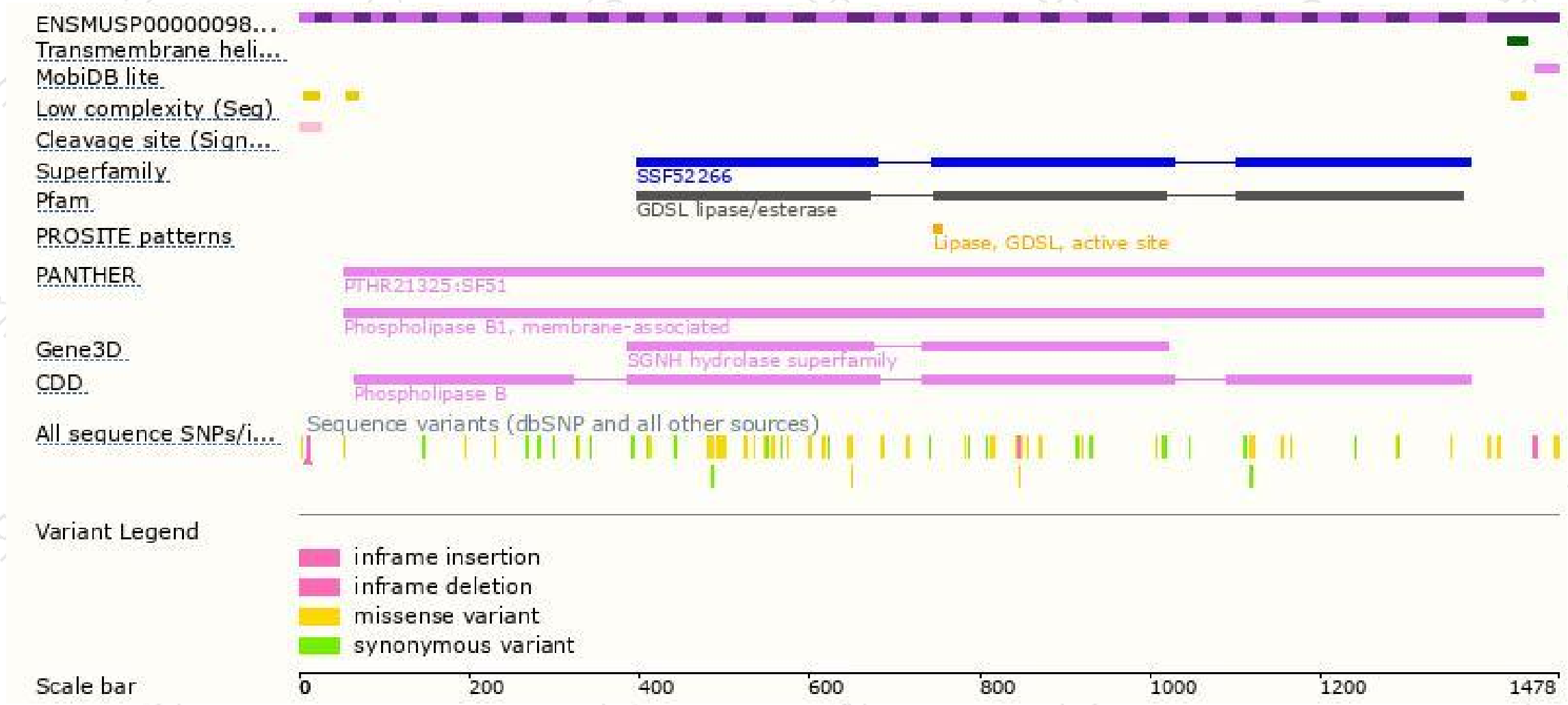
The strategy is based on the design of *Plb1-206* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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