

Plppr5 Cas9-CKO Strategy

Designer:

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Project Overview



Project Name

Plppr5

Project type

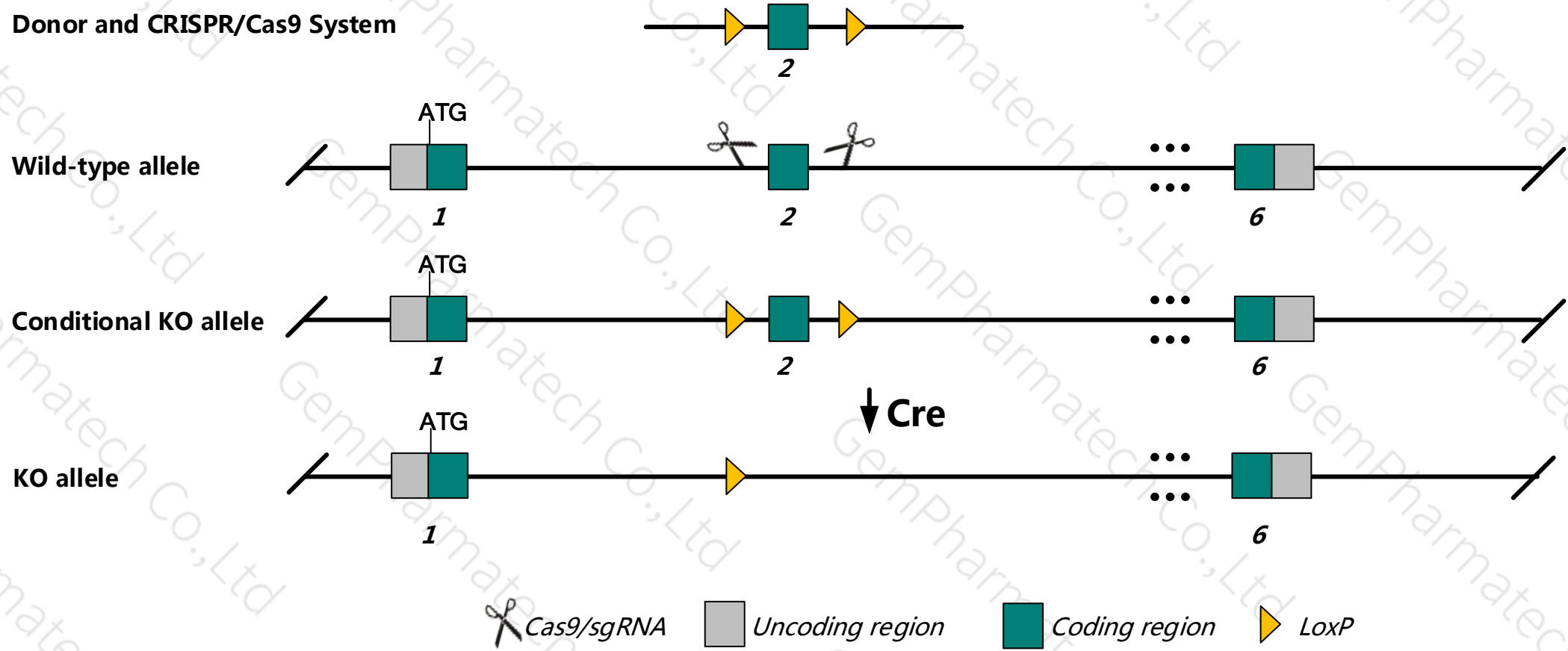
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plppr5* gene. The schematic diagram is as follows:



- The *Plppr5* gene has 2 transcripts, According to the structure of *Plppr5* gene, exon2 of *Plppr5*-202(ENSMUST00000106473.4) transcript is recommended as the knockout region. The region contains the 133bp key functional area of coding sequence. Knock out the region, result in destruction of protein.
- In this project we use CRISPR/Cas9 technology to modify *Plppr5* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector 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 or cell types.

- The *Plppr5* gene is located on the Chr3. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Plppr5 phospholipid phosphatase related 5 [*Mus musculus* (house mouse)]

Gene ID: 75769, updated on 31-Jan-2019

Summary

Official Symbol	Plppr5 provided by MGI
Official Full Name	phospholipid phosphatase related 5 provided by MGI
Primary source	MGI:MGI:1923019
See related	Ensembl:ENSMUSG00000033342
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	Lppr5; PRG-5; Pap2d; 4833424O15Rik
Expression	Biased expression in frontal lobe adult (RPKM 3.1), CNS E18 (RPKM 1.7) and 5 other tissues See more
Orthologs	human all

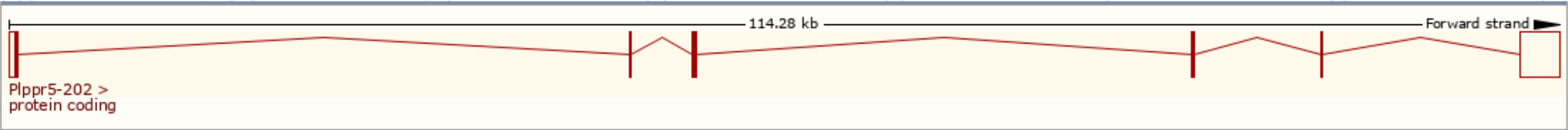
Transcript information (Ensembl)



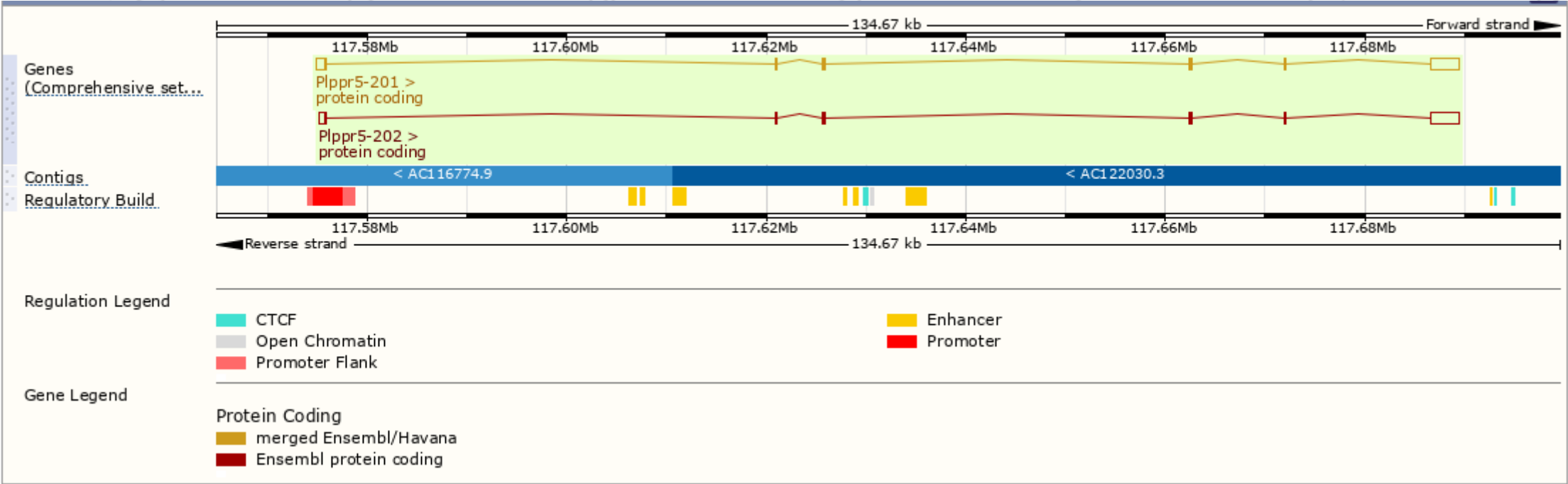
The gene has 2 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Plppr5-201	ENSMUST00000039564.10	4670	316aa	Protein coding	CCDS17796	Q8BJ52	TSL:1 GENCODE basic APPRIS P3
Plppr5-202	ENSMUST00000106473.4	4294	321aa	Protein coding	CCDS80009	Q8BJ52	TSL:1 GENCODE basic APPRIS ALT1

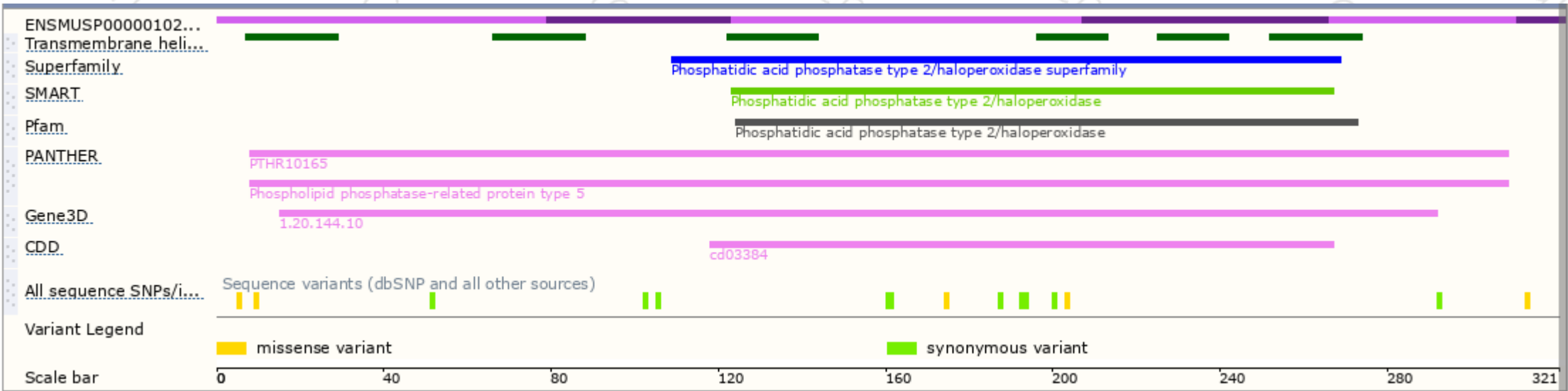
The strategy is based on the design of *Plppr5-202* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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