

Plcd3 Cas9-CKO Strategy

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Reviewer :

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Project Overview

Project Name

Plcd3

Project type

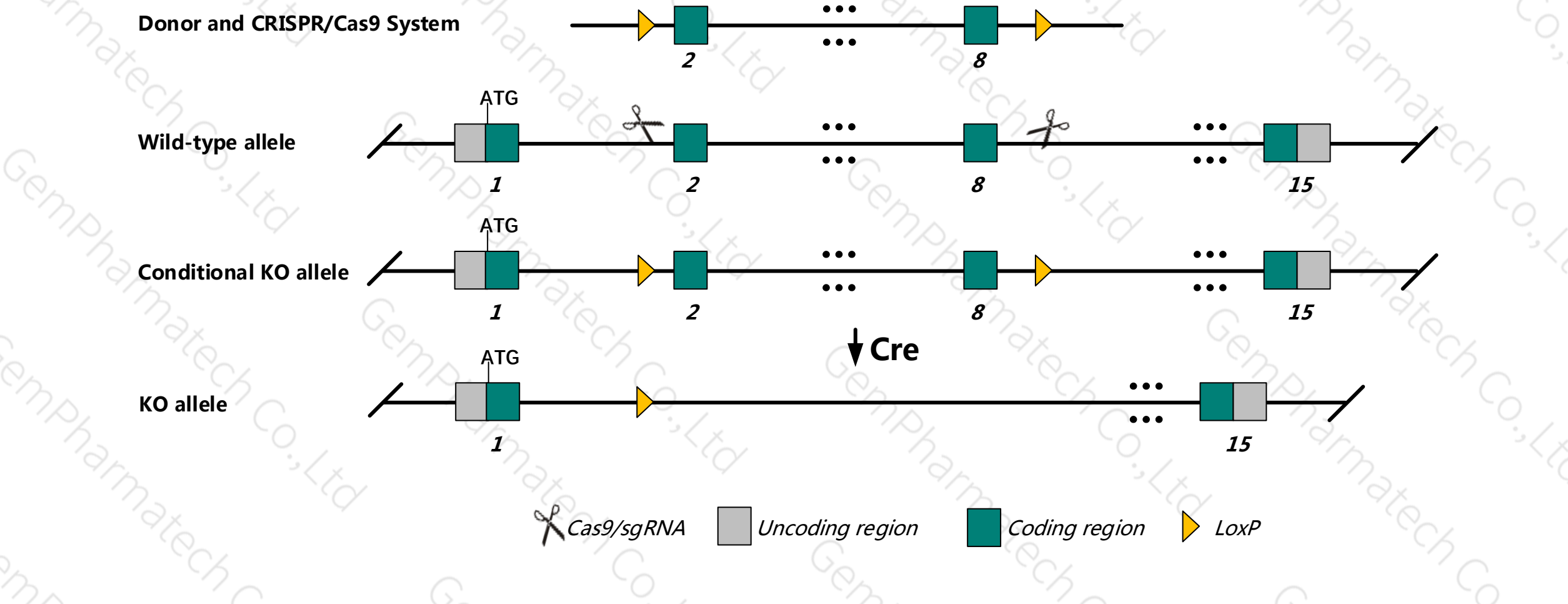
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plcd3* gene. The schematic diagram is as follows:



- The *Plcd3* gene has 5 transcripts. According to the structure of *Plcd3* gene, exon2-exon8 of *Plcd3*-201 (ENSMUST00000103077.1) transcript is recommended as the knockout region. The region contains 1250bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plcd3* 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 *Plcd3* 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.
- 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)

Plcd3 phospholipase C, delta 3 [*Mus musculus* (house mouse)]

Gene ID: 72469, updated on 13-Mar-2020

Summary

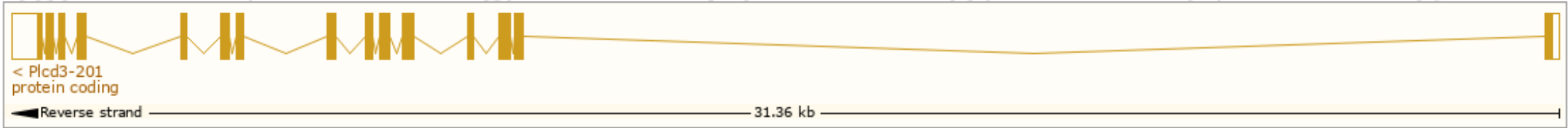
Official Symbol	Plcd3 provided by MGI
Official Full Name	phospholipase C, delta 3 provided by MGI
Primary source	MGI:MGI:107451
See related	Ensembl:ENSMUSG00000020937
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	mKIAA1964; 2610205J15Rik
Expression	Broad expression in bladder adult (RPKM 8.4), stomach adult (RPKM 7.5) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

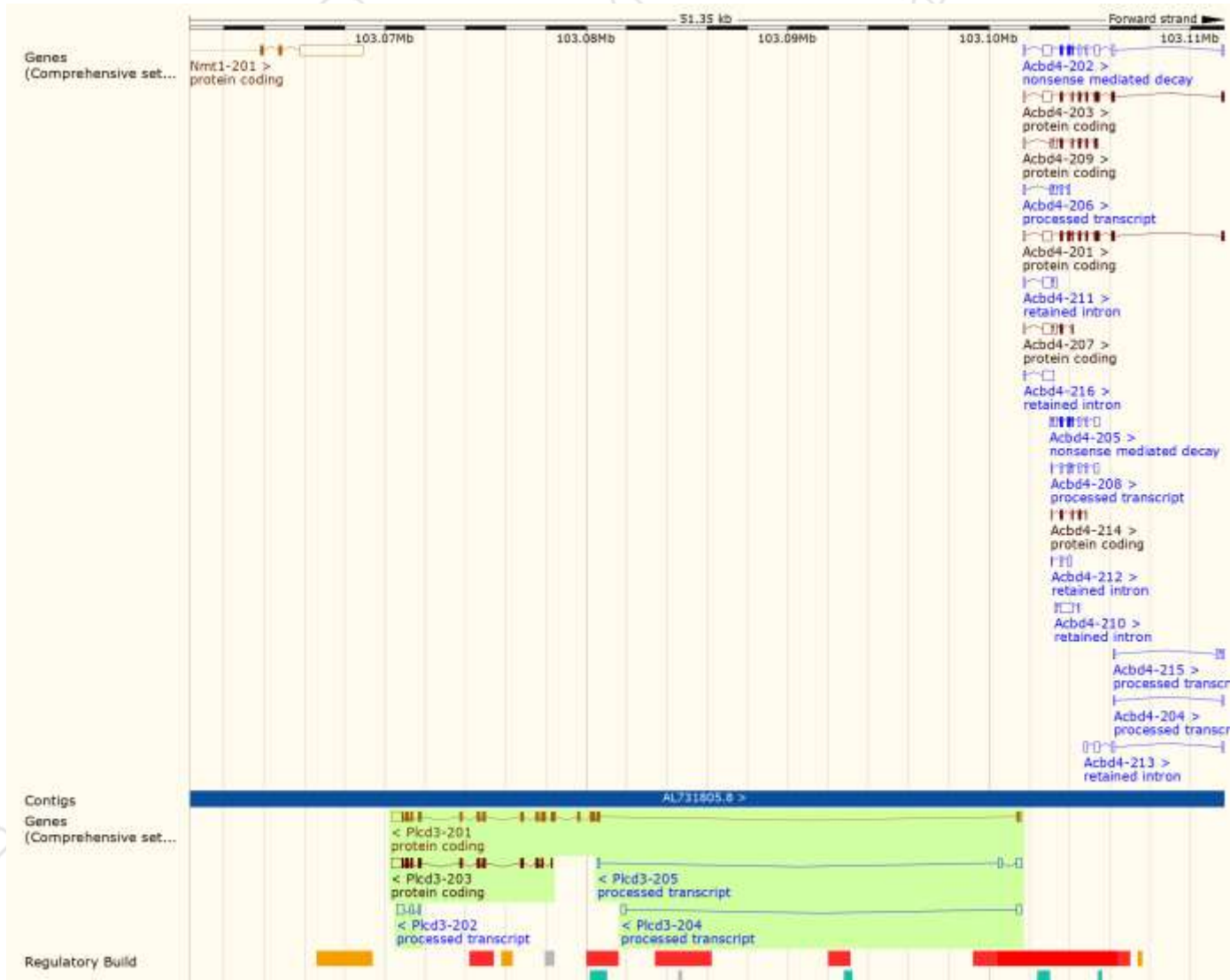
The gene has 5 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Plcd3-201	ENSMUST00000103077.1	3023	785aa	Protein coding	CCDS25512	Q8K2J0	TSL:1 GENCODE basic APPRIS P1
Plcd3-203	ENSMUST00000128650.7	1952	471aa	Protein coding	-	F7AAE0	CDS 5' incomplete TSL:1
Plcd3-202	ENSMUST00000124740.1	591	No protein	Processed transcript	-	-	TSL:5
Plcd3-205	ENSMUST00000143012.1	509	No protein	Processed transcript	-	-	TSL:5
Plcd3-204	ENSMUST00000142970.1	425	No protein	Processed transcript	-	-	TSL:2

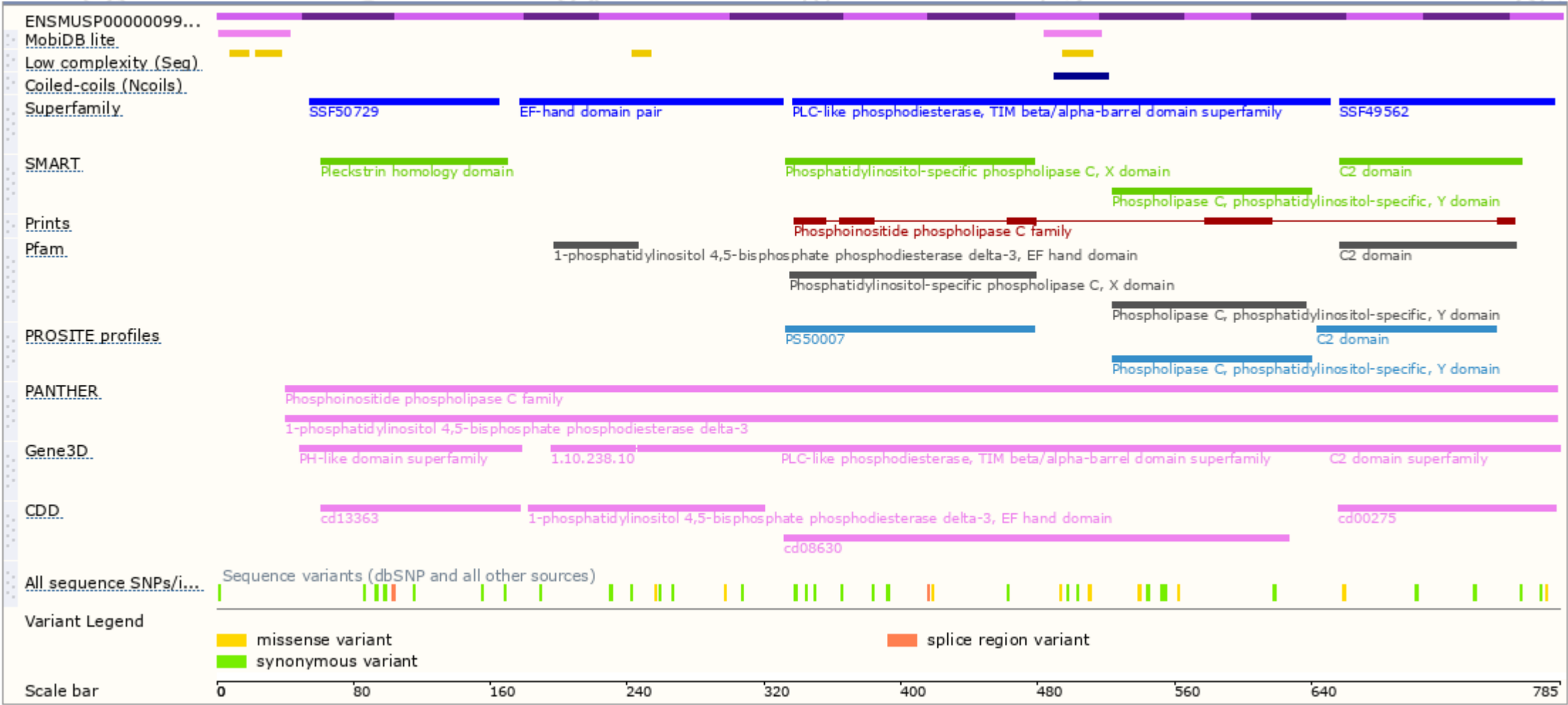
The strategy is based on the design of *Plcd3*-201 transcript, The transcription is shown below



Genomic location distribution



Protein domain



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