

Plch1 Cas9-CKO Strategy

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Project Overview

Project Name

Plch1

Project type

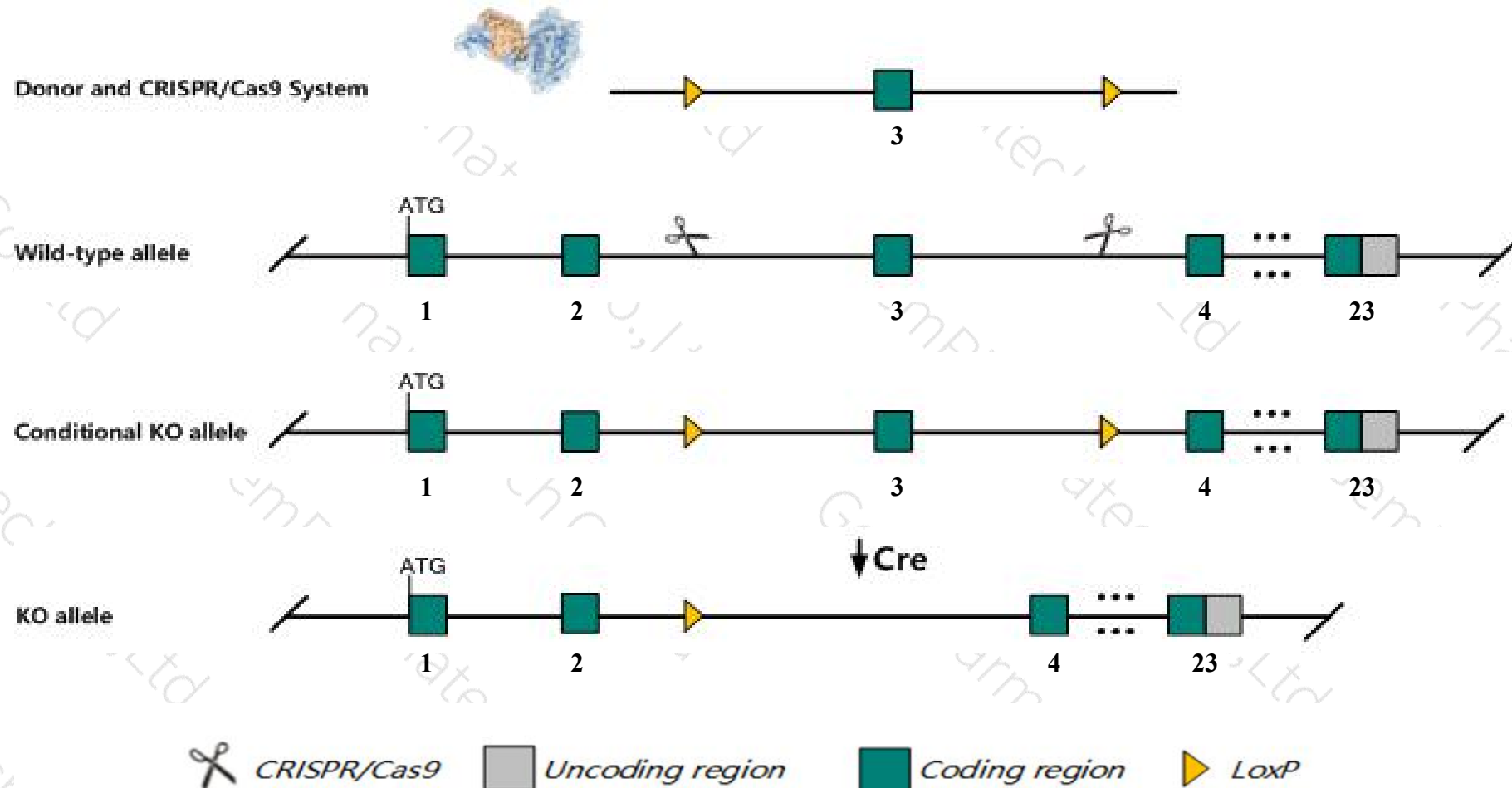
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Plch1* gene has 13 transcripts. According to the structure of *Plch1* gene, exon3 of *Plch1*-203(ENSMUST00000084105.11) transcript is recommended as the knockout region. The region contains 244bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plch1* 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 *Plchl* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Plch1 phospholipase C, eta 1 [Mus musculus (house mouse)]

Gene ID: 269437, updated on 13-Mar-2020

Summary



Official Symbol Plch1 provided by [MGI](#)

Official Full Name phospholipase C, eta 1 provided by [MGI](#)

Primary source [MGI:MGI:2683547](#)

See related [Ensembl:ENSMUSG00000036834](#)

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 BC042549, PLC-eta-1, PLCeta1, Plcl3

Expression Biased expression in CNS E11.5 (RPKM 3.5), whole brain E14.5 (RPKM 2.2) and 10 other tissues [See more](#)

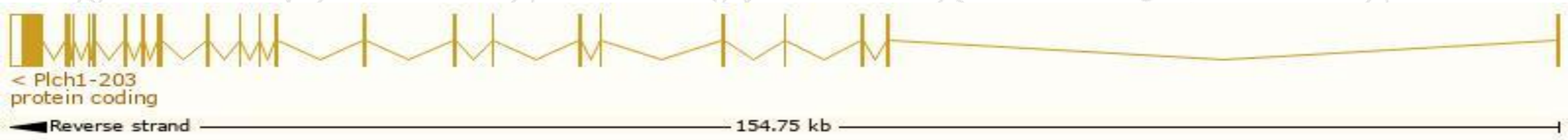
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

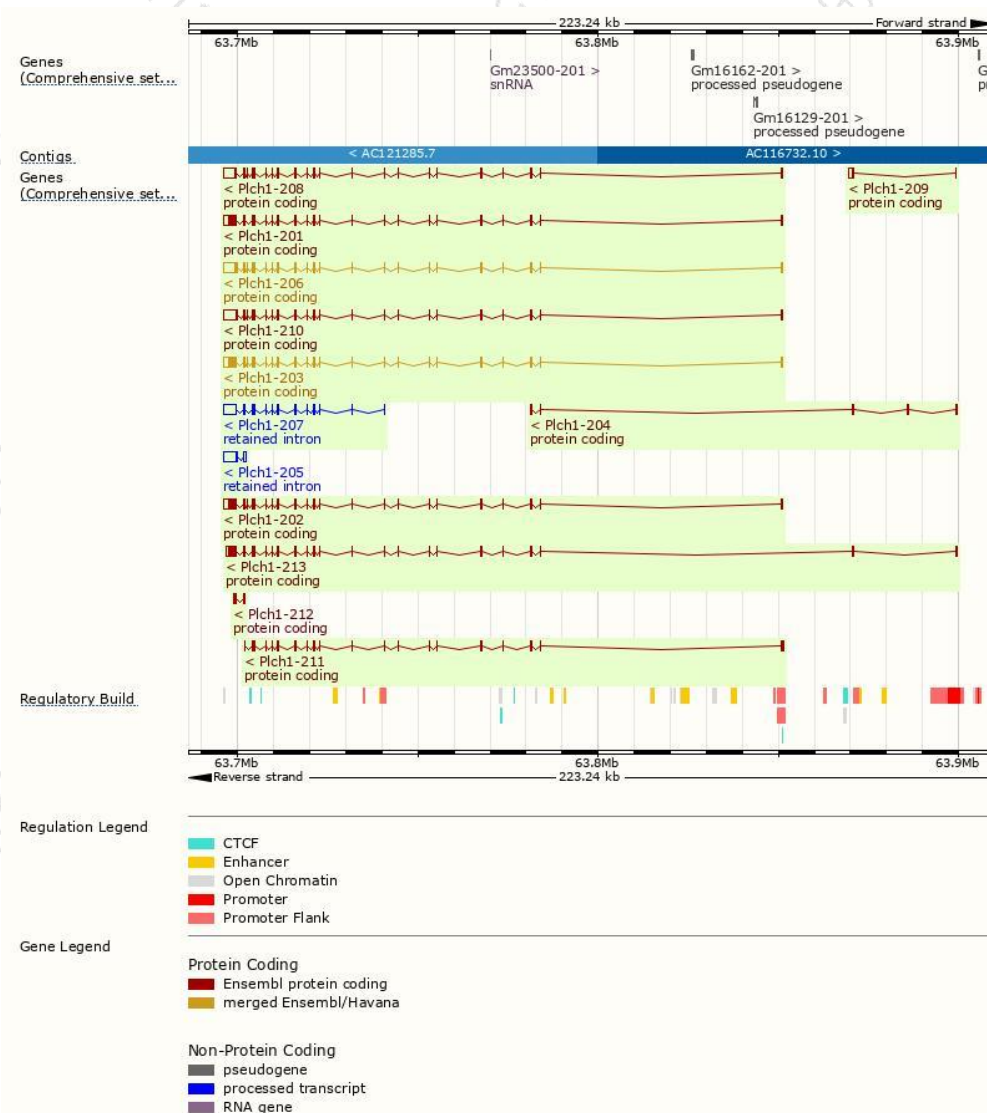
The gene has 13 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Plch1-206	ENSMUST00000159676.8	6560	1073aa	Protein coding	CCDS50918	Q4KWH5	TSL:1 GENCODE basic APPRIS ALT2
Plch1-210	ENSMUST00000162269.8	6539	1003aa	Protein coding	CCDS57215	Q4KWH5	TSL:1 GENCODE basic APPRIS ALT2
Plch1-203	ENSMUST00000084105.11	6245	1682aa	Protein coding	CCDS38444	Q4KWH5	TSL:1 GENCODE basic APPRIS P3
Plch1-208	ENSMUST00000160638.9	6271	1073aa	Protein coding	-	A0A0A0MQM2	TSL:5 GENCODE basic APPRIS ALT2
Plch1-201	ENSMUST00000048134.15	6259	1643aa	Protein coding	-	I1E4X4	TSL:1 GENCODE basic APPRIS ALT2
Plch1-202	ENSMUST00000059973.13	6241	1681aa	Protein coding	-	I1E4X6	TSL:5 GENCODE basic APPRIS ALT2
Plch1-213	ENSMUST00000177143.7	6010	1673aa	Protein coding	-	H3BKK4	TSL:5 GENCODE basic APPRIS ALT2
Plch1-211	ENSMUST00000175947.7	3274	968aa	Protein coding	-	H3BKE1	CDS 3' incomplete TSL:5
Plch1-209	ENSMUST00000161052.2	1472	34aa	Protein coding	-	E0CZ95	TSL:1 GENCODE basic
Plch1-212	ENSMUST00000176861.1	805	269aa	Protein coding	-	H3BKX1	CDS 5' and 3' incomplete TSL:3
Plch1-204	ENSMUST00000159188.1	747	135aa	Protein coding	-	E0CY47	CDS 3' incomplete TSL:2
Plch1-207	ENSMUST00000159982.8	5099	No protein	Retained intron	-	-	TSL:2
Plch1-205	ENSMUST00000159374.2	3835	No protein	Retained intron	-	-	TSL:2

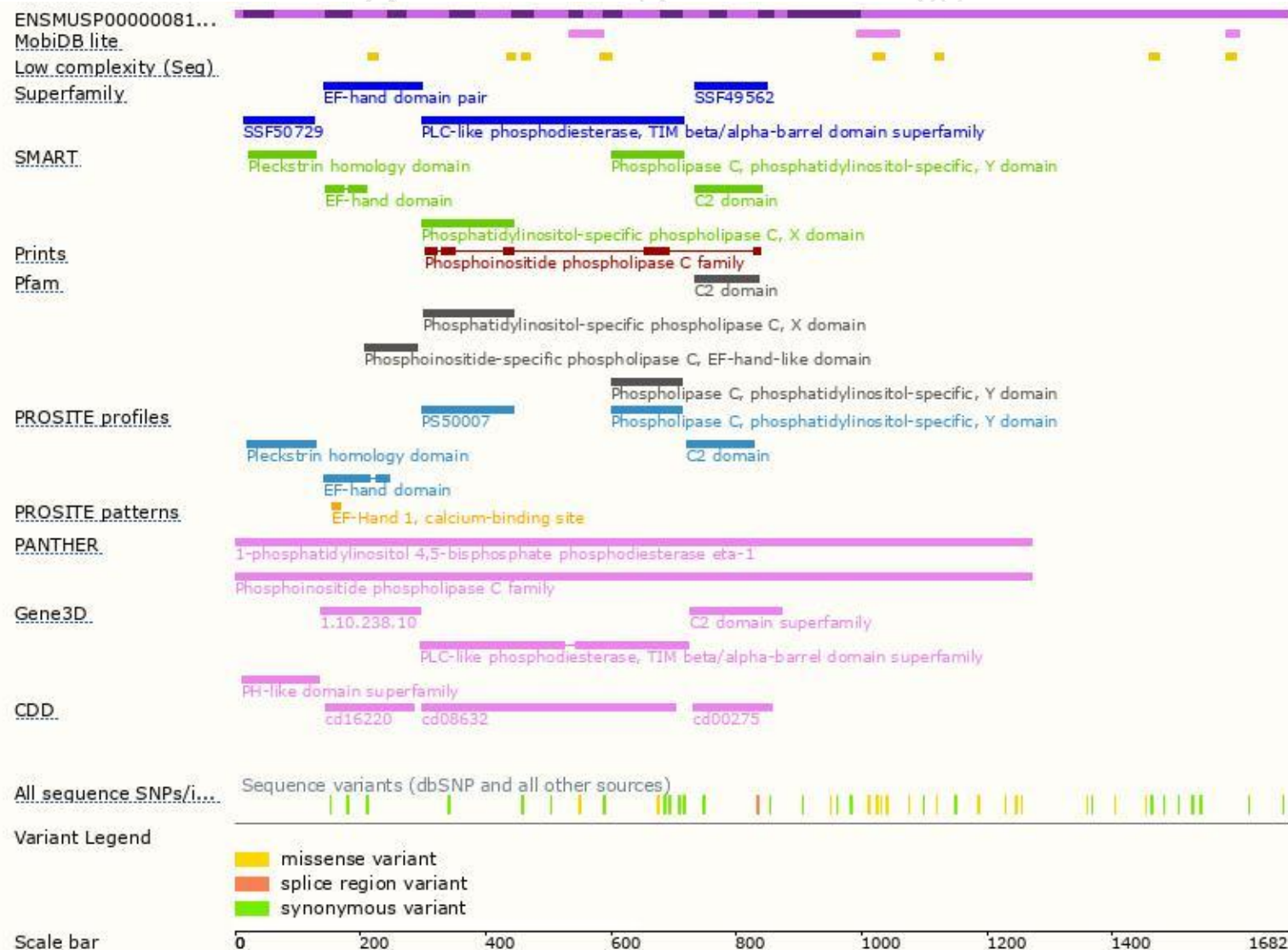
The strategy is based on the design of *Plch1-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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