

Plch2 Cas9-CKO Strategy

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Project Overview

Project Name

Plch2

Project type

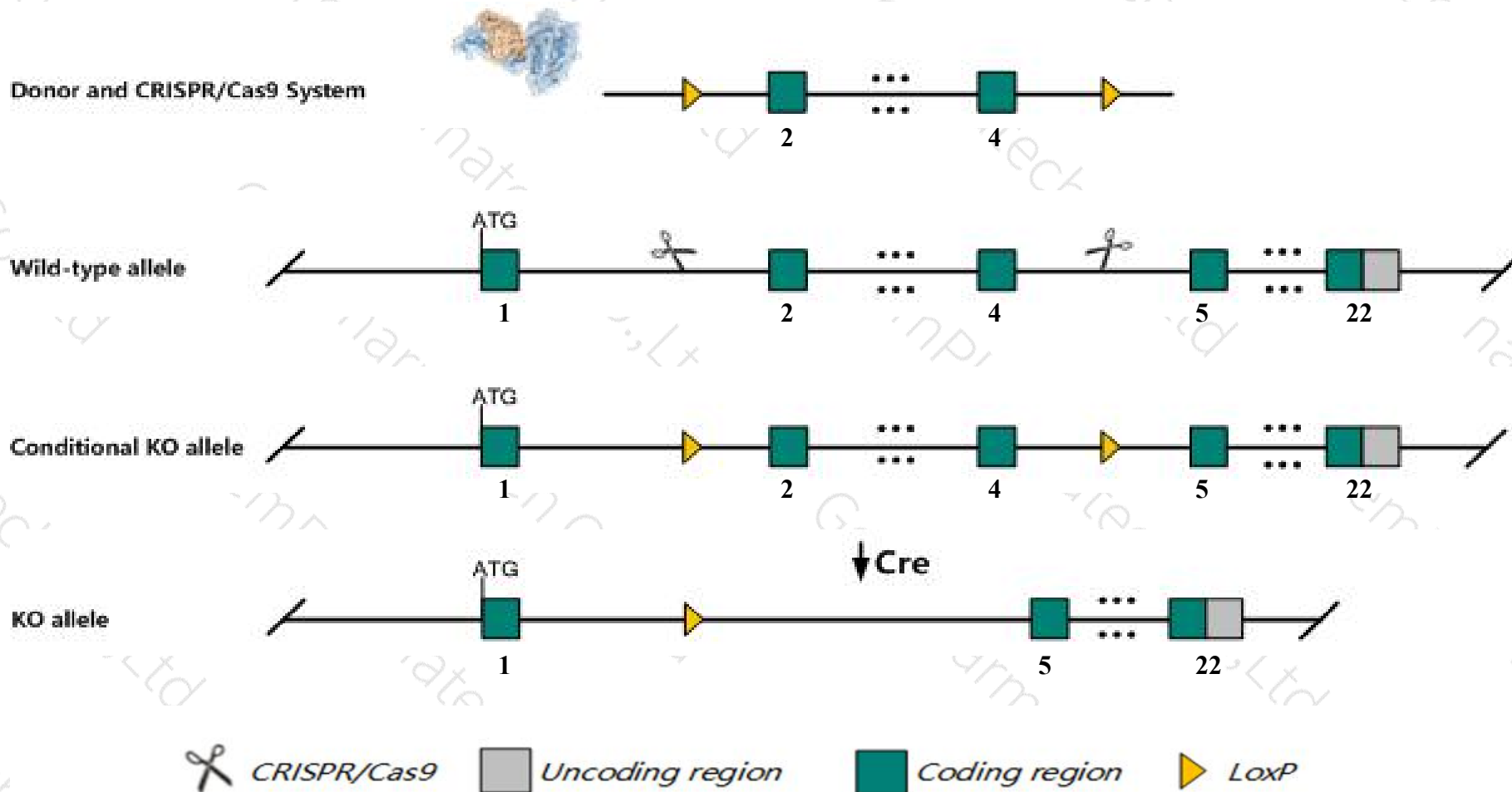
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plch2* gene. The schematic diagram is as follows:



Technical routes

- The *Plch2* gene has 12 transcripts. According to the structure of *Plch2* gene, exon2-exon4 of *Plch2*-201 (ENSMUST00000105631.8) transcript is recommended as the knockout region. The region contains 521bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plch2* 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

- According to the existing MGI data, Mice homozygous for a reporter allele exhibit no apparent abnormal phenotype.
- Transcript 202,209 CDS 3' incomplete the influences is unknown. Transcript 203,205 CDS 3' incomplete the influences is unknown.
- The *Plch2* gene is located on the Chr4. 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)

Plch2 phospholipase C, eta 2 [Mus musculus (house mouse)]

Gene ID: 269615, updated on 31-Jan-2019

Summary



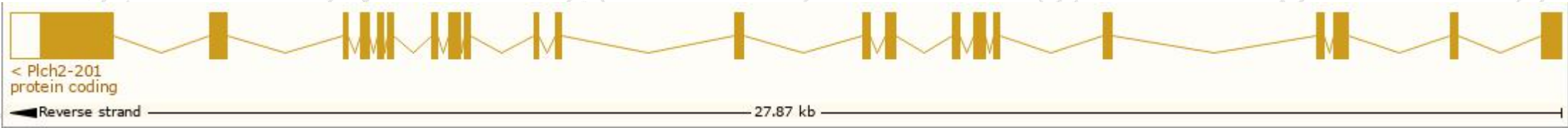
Official Symbol	Plch2 provided by MGI
Official Full Name	phospholipase C, eta 2 provided by MGI
Primary source	MGI:MGI:2443078
See related	Ensembl:ENSMUSG00000029055
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A930027K05Rik, PLCeta2, Plc-eta2, Plcl4
Expression	Biased expression in cerebellum adult (RPKM 24.6), colon adult (RPKM 15.7) and 14 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

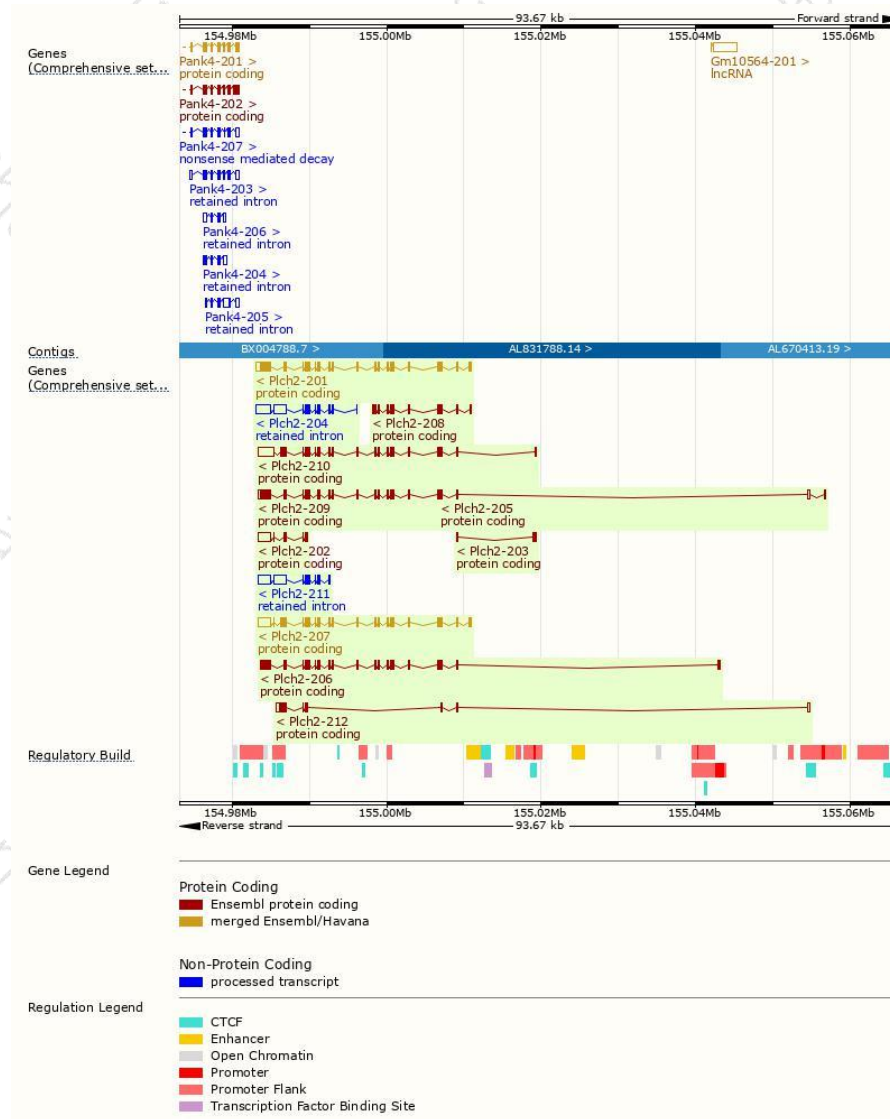
The gene has 12 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Plch2-207	ENSMUST00000139976.8	5322	1238aa	Protein coding	CCDS38990	F7C3A0	TSL:1 GENCODE basic APPRIS P3
Plch2-201	ENSMUST00000105631.8	5053	1501aa	Protein coding	CCDS71533	A2AP18	TSL:5 GENCODE basic APPRIS ALT2
Plch2-210	ENSMUST00000176194.7	5619	1137aa	Protein coding	-	H3BIW6	TSL:5 GENCODE basic APPRIS ALT2
Plch2-206	ENSMUST00000135665.8	4349	1396aa	Protein coding	-	A2AP18	TSL:5 GENCODE basic APPRIS ALT2
Plch2-209	ENSMUST00000175982.7	4046	1250aa	Protein coding	-	H3BK11	CDS 5' incomplete TSL:5
Plch2-202	ENSMUST00000124517.8	2213	199aa	Protein coding	-	F7C512	CDS 5' incomplete TSL:5
Plch2-212	ENSMUST00000186598.6	2119	493aa	Protein coding	-	A0A087WSR3	TSL:5 GENCODE basic
Plch2-208	ENSMUST00000145662.8	1818	599aa	Protein coding	-	A2AP18	TSL:1 GENCODE basic
Plch2-205	ENSMUST00000131173.2	613	111aa	Protein coding	-	F6UKG4	CDS 3' incomplete TSL:3
Plch2-203	ENSMUST00000126098.1	482	57aa	Protein coding	-	A6PWW4	CDS 3' incomplete TSL:3
Plch2-204	ENSMUST00000127661.7	4528	No protein	Retained intron	-	-	TSL:1
Plch2-211	ENSMUST00000176620.1	4158	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Plch2-201* 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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