

Plcd1 Cas9-KO Strategy

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Project Overview

Project Name

Plcd1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plcd1* gene. The schematic diagram is as follows:



- The *Plcd1* gene has 4 transcripts. According to the structure of *Plcd1* gene, exon2-exon3 of *Plcd1-201* (ENSMUST00000010804.3) transcript is recommended as the knockout region. The region contains 394bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plcd1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for disruptions in this gene show reduced body size and various abnormalities of the skin and hair including alopecia, epidermal hyperplasia, enlarged sebaceous glands, various kinds of cysts, and skin tumors.
- The *Plcd1* gene is located on the Chr9. 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 gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Plcd1 phospholipase C, delta 1 [Mus musculus (house mouse)]

Gene ID: 18799, updated on 31-Jan-2019

Summary



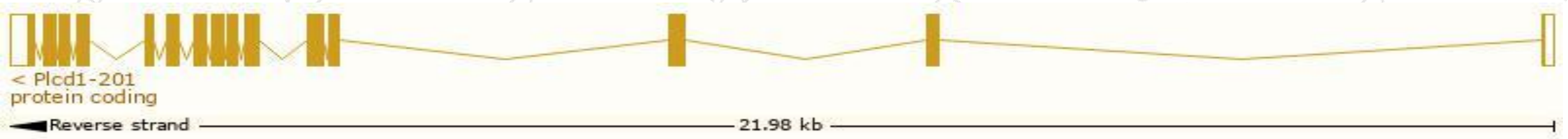
Official Symbol	Plcd1 provided by MGI
Official Full Name	phospholipase C, delta 1 provided by MGI
Primary source	MGI:MGI:97614
See related	Ensembl:ENSMUSG00000010660
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW212592, C79986
Expression	Ubiquitous expression in bladder adult (RPKM 20.0), colon adult (RPKM 17.5) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

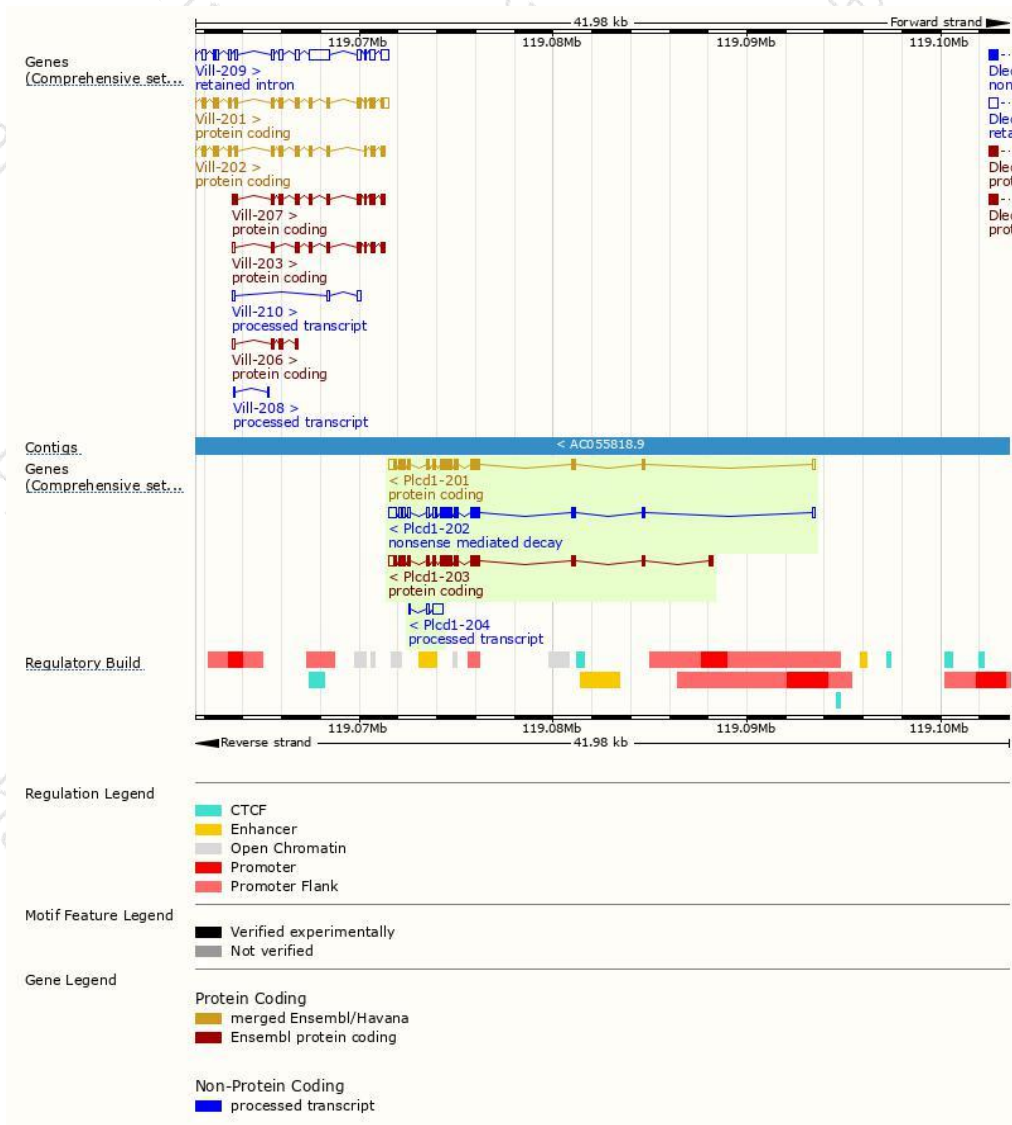
The gene has 4 transcripts,all transcripts are shown below:

Name ▲	Transcript ID ▲	bp ▲	Protein ▲	Biotype ▲	CCDS ▲	UniProt ▲	Flags ▲
Plcd1-201	ENSMUST00000010804.3	2657	756aa	 Protein coding	CCDS23607 	Q8R3B1 	TSL:1 GENCODE basic APPRIS P1
Plcd1-202	ENSMUST00000213464.1	2715	503aa	 Nonsense mediated decay	-	Q05DG3 	TSL:1
Plcd1-203	ENSMUST00000214470.1	2706	782aa	 Protein coding	-	G5DDB7 	TSL:1 GENCODE basic
Plcd1-204	ENSMUST00000214491.1	674	No protein	 lncRNA	-	-	TSL:5

The strategy is based on the design of *Plcd1-201* transcript,The transcription is shown below



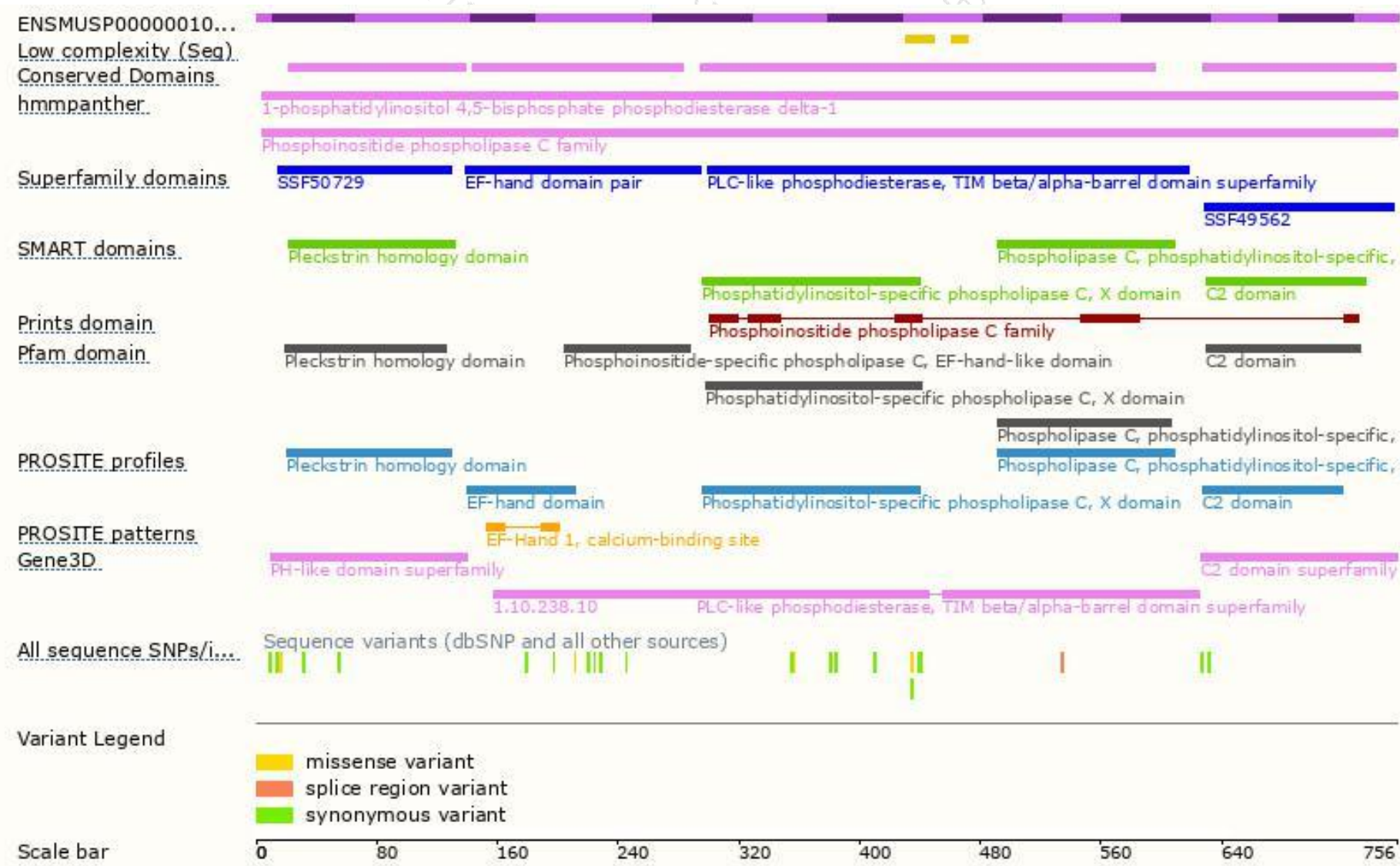
Genomic location distribution



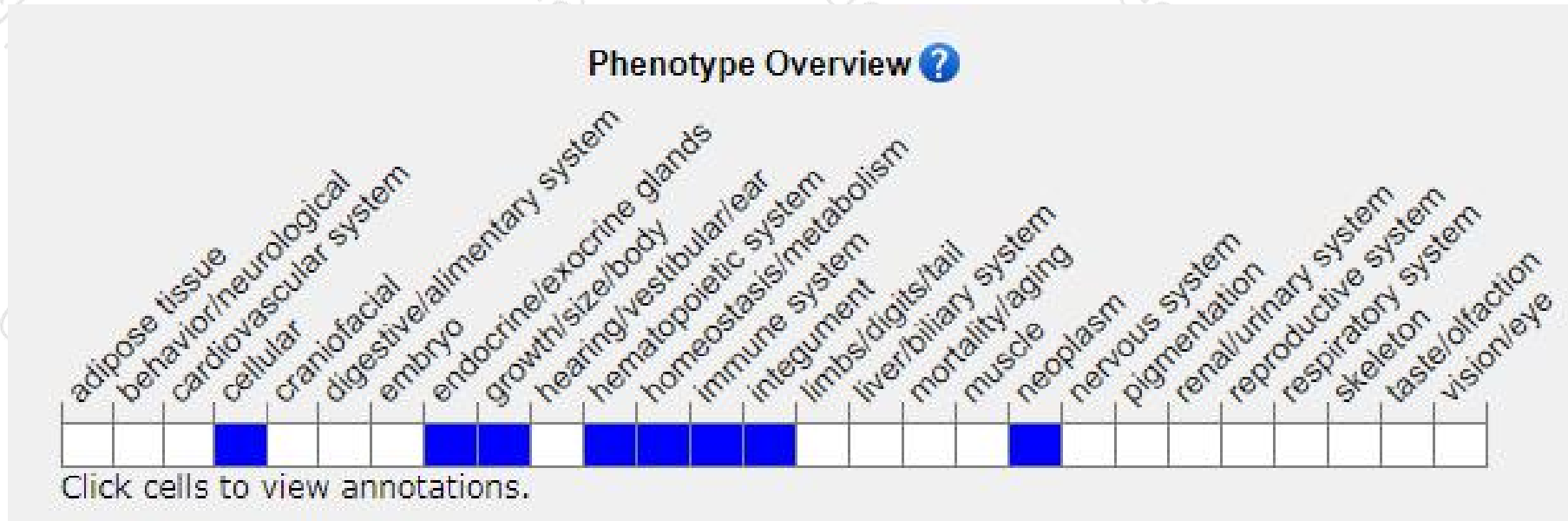
Protein domain



集萃药康
GemPharmatech



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Mice homozygous for disruptions in this gene show reduced body size and various abnormalities of the skin and hair including alopecia, epidermal hyperplasia, enlarged sebaceous glands, various kinds of cysts, and skin tumors.

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

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