

Pld3 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Pld3

Project type

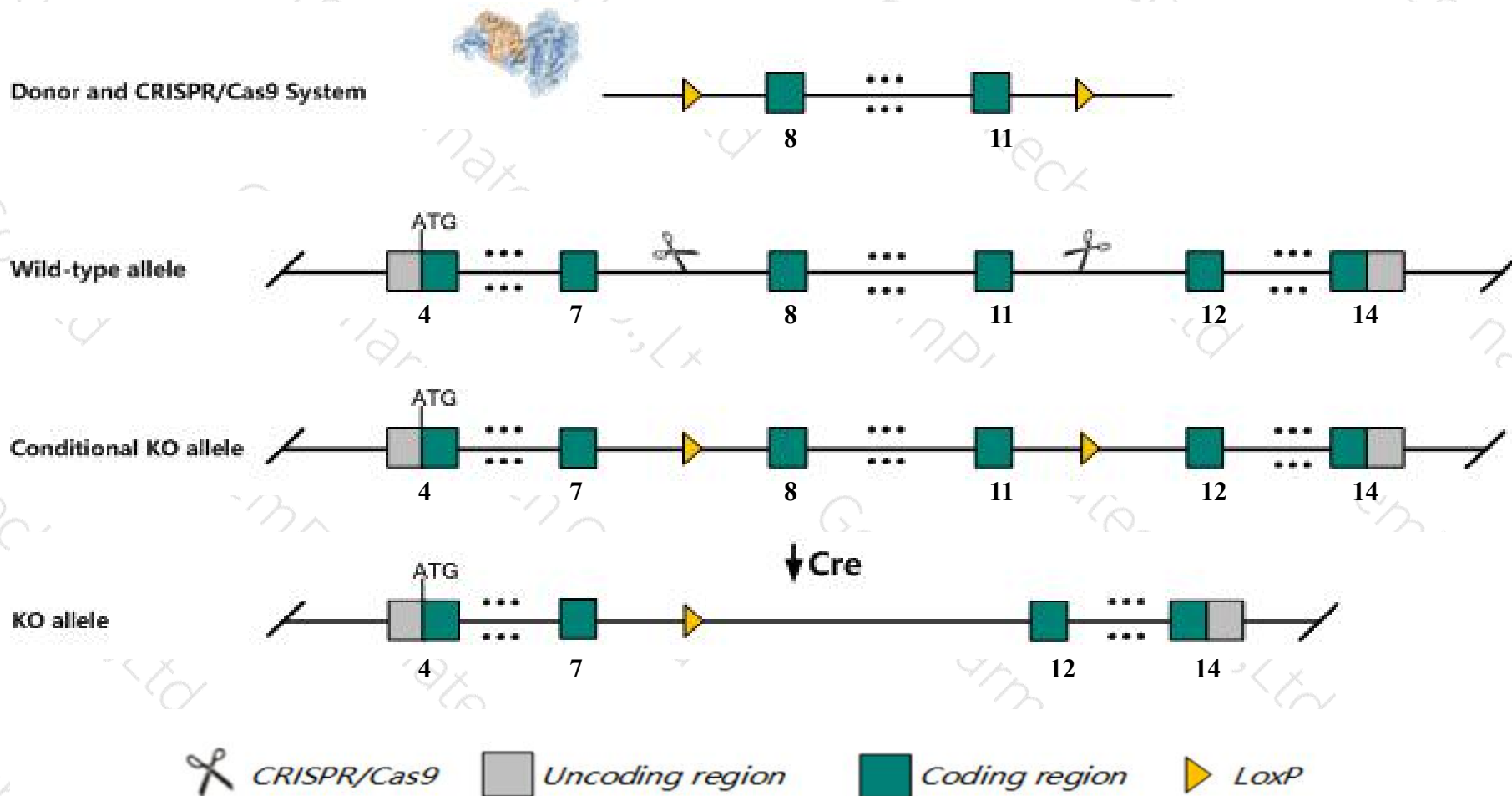
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pld3* gene. The schematic diagram is as follows:



- The *Pld3* gene has 8 transcripts. According to the structure of *Pld3* gene, exon8-exon11 of *Pld3*-202 (ENSMUST00000117611.7) transcript is recommended as the knockout region. The region contains 584bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pld3* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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

- Transcript203, 207 CDS 3' incomplete the influences is unknown.
- The *Pld3* gene is located on the Chr7. 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)

Pld3 phospholipase D family, member 3 [*Mus musculus* (house mouse)]

Gene ID: 18807, updated on 12-Aug-2019

Summary

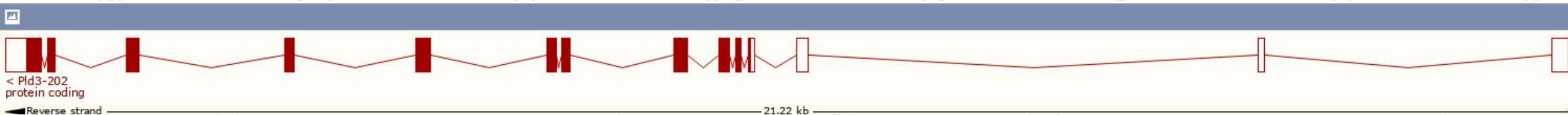
Official Symbol	Pld3 provided by MGI
Official Full Name	phospholipase D family, member 3 provided by MGI
Primary source	MGI:MGI:1333782
See related	Ensembl:ENSMUSG00000003363
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Sam-9
Expression	Ubiquitous expression in cortex adult (RPKM 194.3), frontal lobe adult (RPKM 152.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

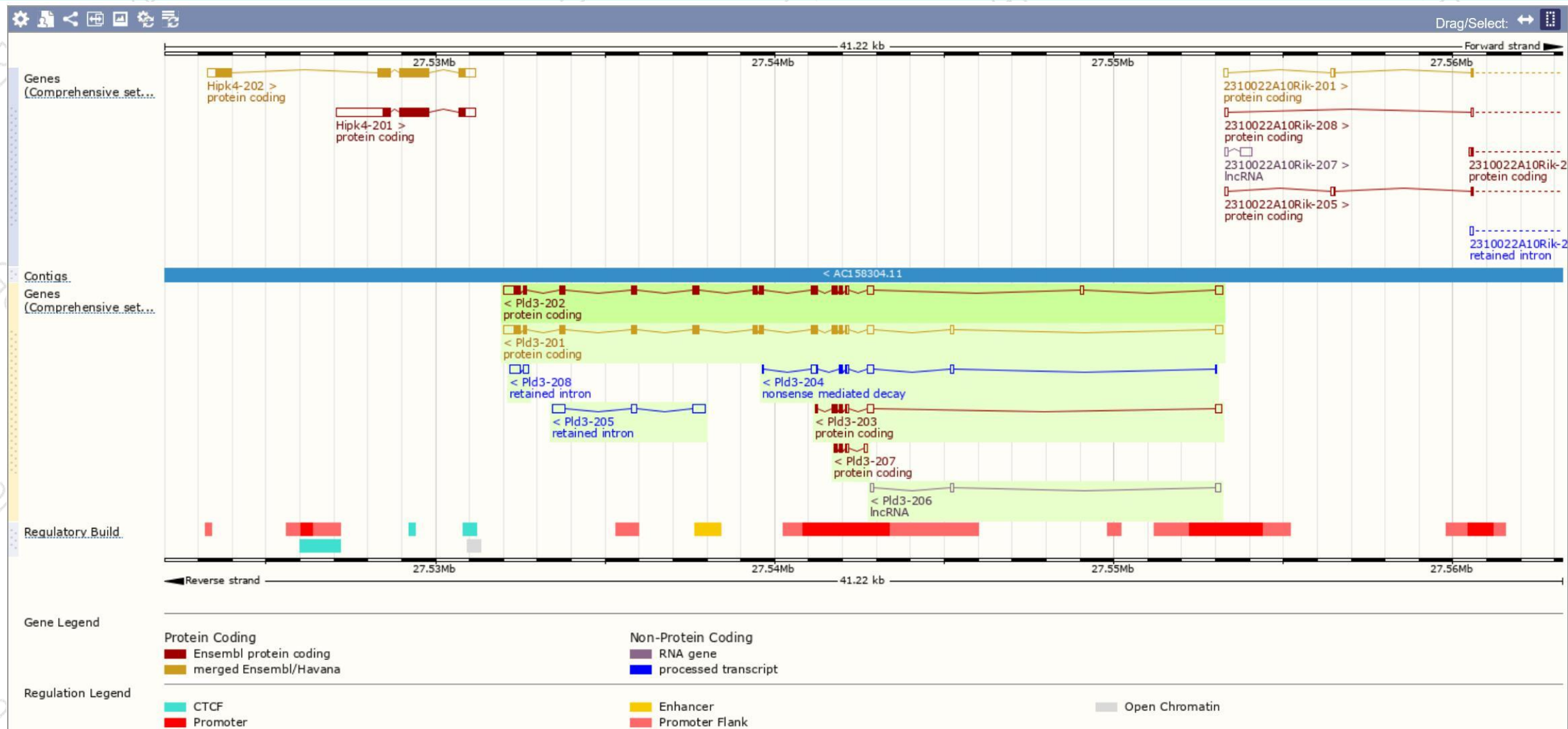
The gene has 8 transcripts,all transcripts are shown below:

Show/hide columns (1 hidden)							Filter	
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags	
Pld3-208	ENSMUST00000155287.1	463	No protein	Retained intron	-	-	TSL:1	
Pld3-207	ENSMUST00000150964.1	364	63aa	Protein coding	-	D3Z179	CDS 3' incomplete	TSL:3
Pld3-206	ENSMUST00000143903.1	341	No protein	lncRNA	-	-	TSL:2	
Pld3-205	ENSMUST00000142981.1	859	No protein	Retained intron	-	-	TSL:2	
Pld3-204	ENSMUST00000131106.7	626	42aa	Nonsense mediated decay	-	D6RCG9	TSL:5	
Pld3-203	ENSMUST00000127240.7	723	103aa	Protein coding	-	D3YY25	CDS 3' incomplete	TSL:5
Pld3-202	ENSMUST00000117611.7	2297	488aa	Protein coding	CCDS21025	O35405	TSL:1	GENCODE basic APPRIS P1
Pld3-201	ENSMUST00000117095.7	2282	488aa	Protein coding	CCDS21025	O35405	TSL:1	GENCODE basic APPRIS P1

The strategy is based on the design of *Pld3-202* transcript,The transcription is shown below



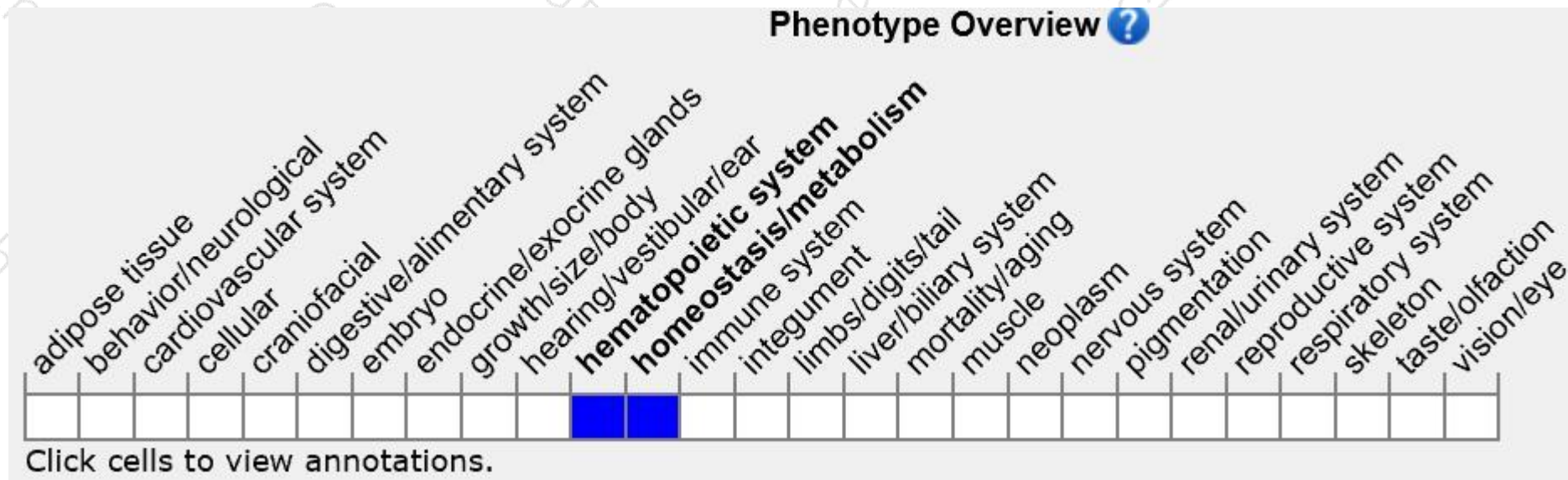
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



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

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

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