

Lypla1 Cas9-CKO Strategy

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Project Overview

Project Name

Lypla1

Project type

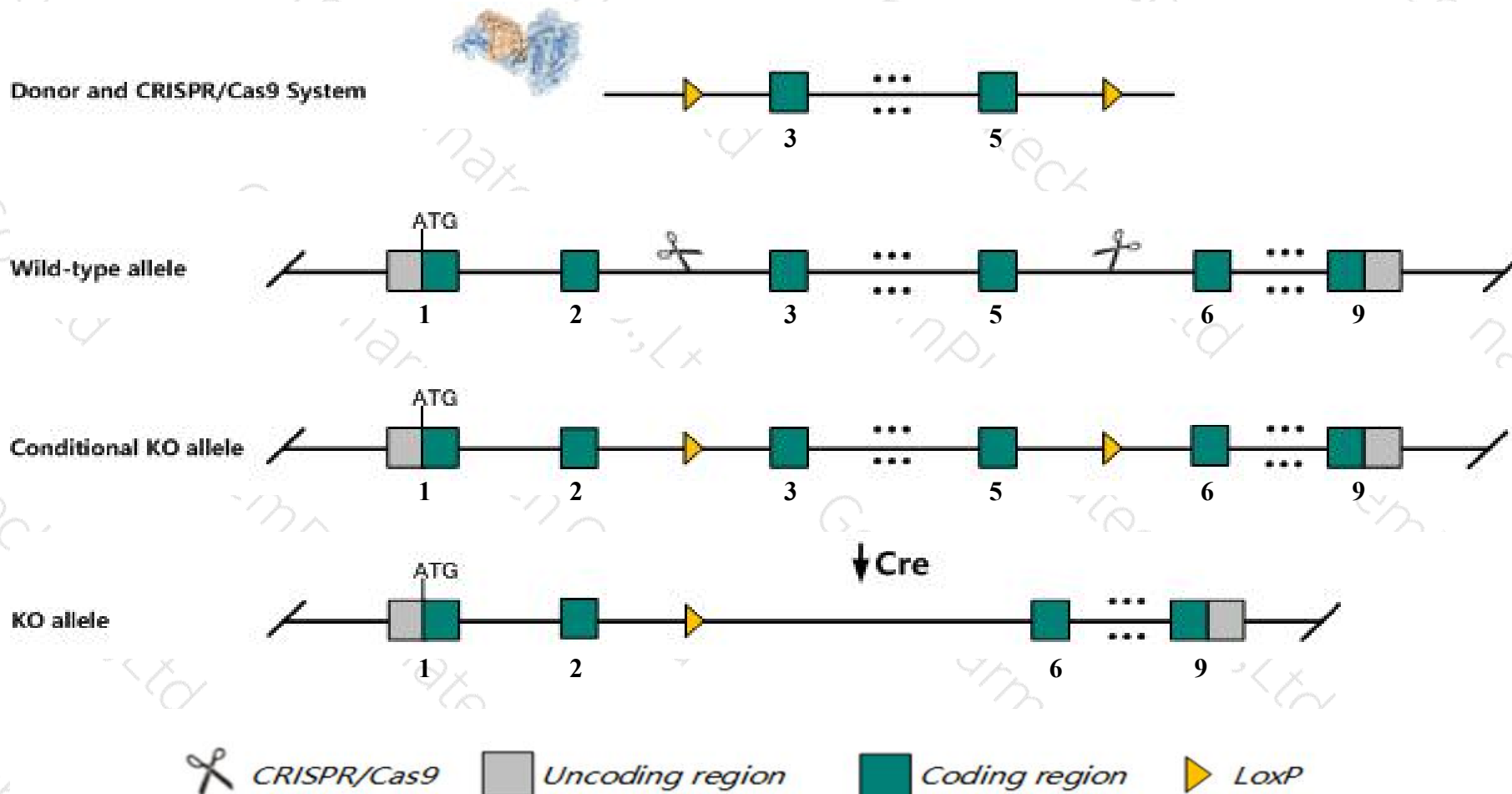
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Lypla1* gene has 8 transcripts. According to the structure of *Lypla1* gene, exon3-exon5 of *Lypla1*-201 (ENSMUST00000027036.10) transcript is recommended as the knockout region. The region contains 185bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lypla1* 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

- Transcript *Lypla1*-207 may not be affected.
- The KO region contains the *Gm37988* gene. Knockout the region may affect the function of the *Gm37988* gene.
- The *Lypla1* gene is located on the Chr1. 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)

Lypla1 lysophospholipase 1 [Mus musculus (house mouse)]

Gene ID: 18777, updated on 31-Jan-2019

Summary



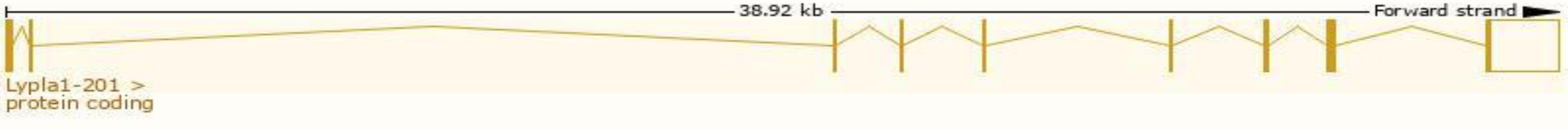
Official Symbol	Lypla1 provided by MGI
Official Full Name	lysophospholipase 1 provided by MGI
Primary source	MGI:MGI:1344588
See related	Ensembl:ENSMUSG00000025903
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	APT-1, Gm39587, LPL-I, Pla1a
Expression	Ubiquitous expression in liver adult (RPKM 20.2), placenta adult (RPKM 17.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

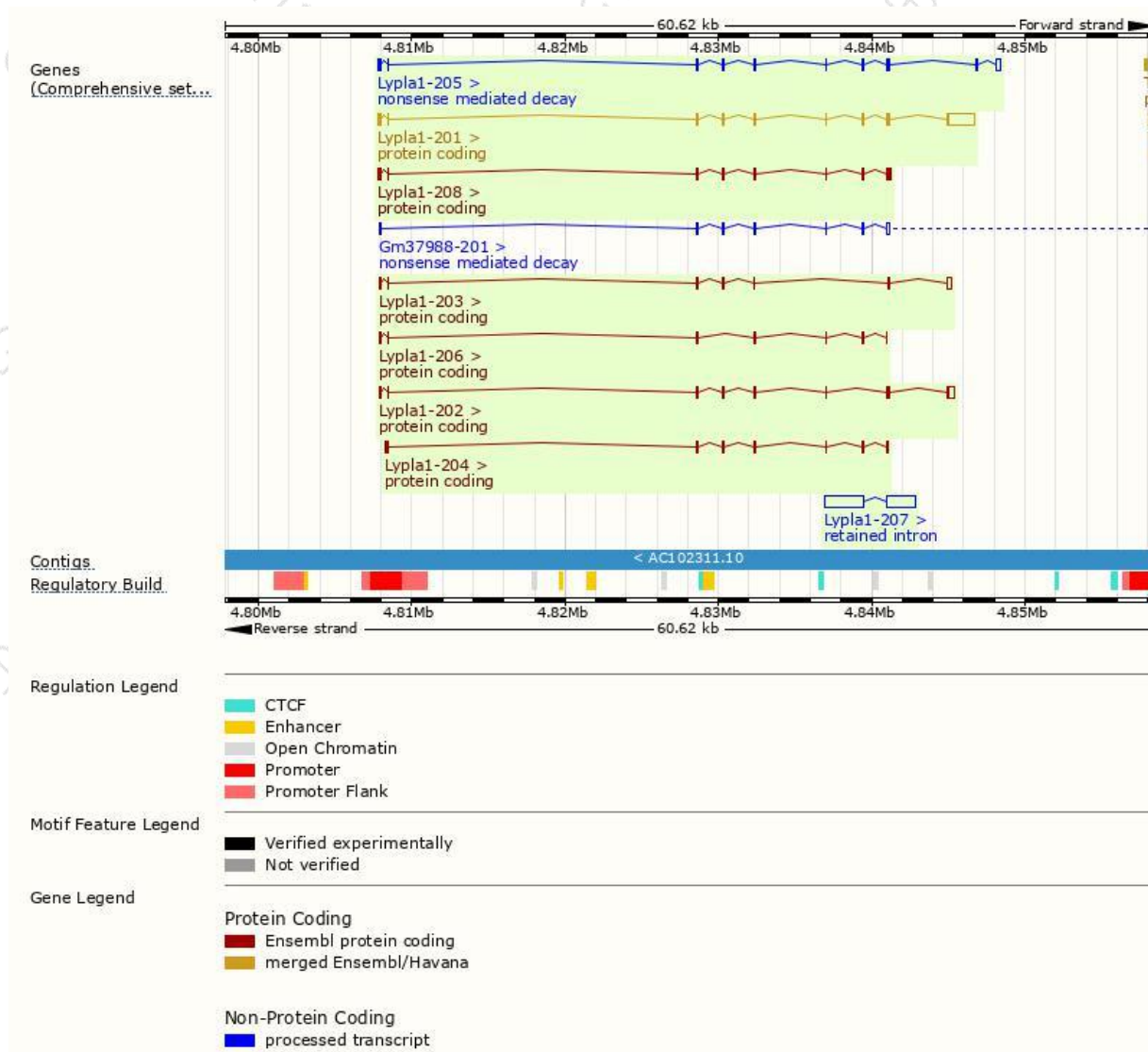
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lypla1-201	ENSMUST00000027036.10	2507	230aa	Protein coding	CCDS14806	P97823	TSL:1 GENCODE basic APPRIS P1
Lypla1-202	ENSMUST00000115529.7	930	196aa	Protein coding	-	D3Z111	TSL:2 GENCODE basic
Lypla1-208	ENSMUST00000150971.7	877	221aa	Protein coding	-	P97823	TSL:1 GENCODE basic
Lypla1-204	ENSMUST00000131119.1	660	142aa	Protein coding	-	D3YUG4	CDS 3' incomplete TSL:3
Lypla1-203	ENSMUST00000119612.8	529	92aa	Protein coding	-	J3QQ63	TSL:3 GENCODE basic
Lypla1-206	ENSMUST00000137887.7	444	142aa	Protein coding	-	D3Z269	CDS 3' incomplete TSL:5
Lypla1-205	ENSMUST00000134384.7	1136	224aa	Nonsense mediated decay	-	J3QP56	TSL:1
Lypla1-207	ENSMUST00000141278.1	4456	No protein	Retained intron	-	-	TSL:1

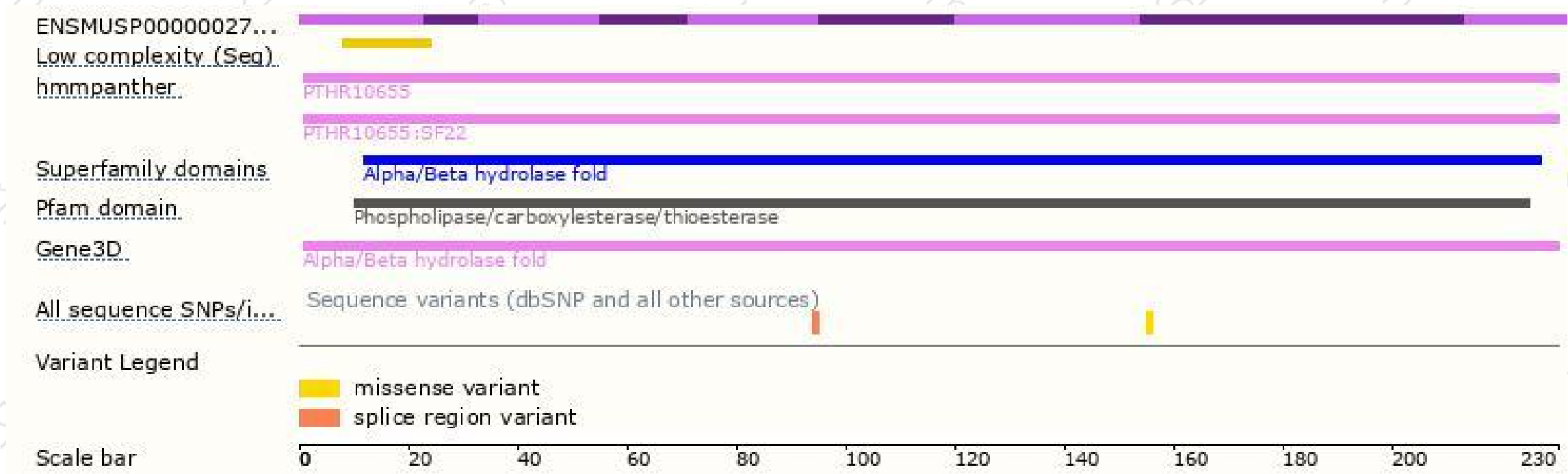
The strategy is based on the design of *Lypla1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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