Pla1a Cas9-KO Strategy

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Project Overview

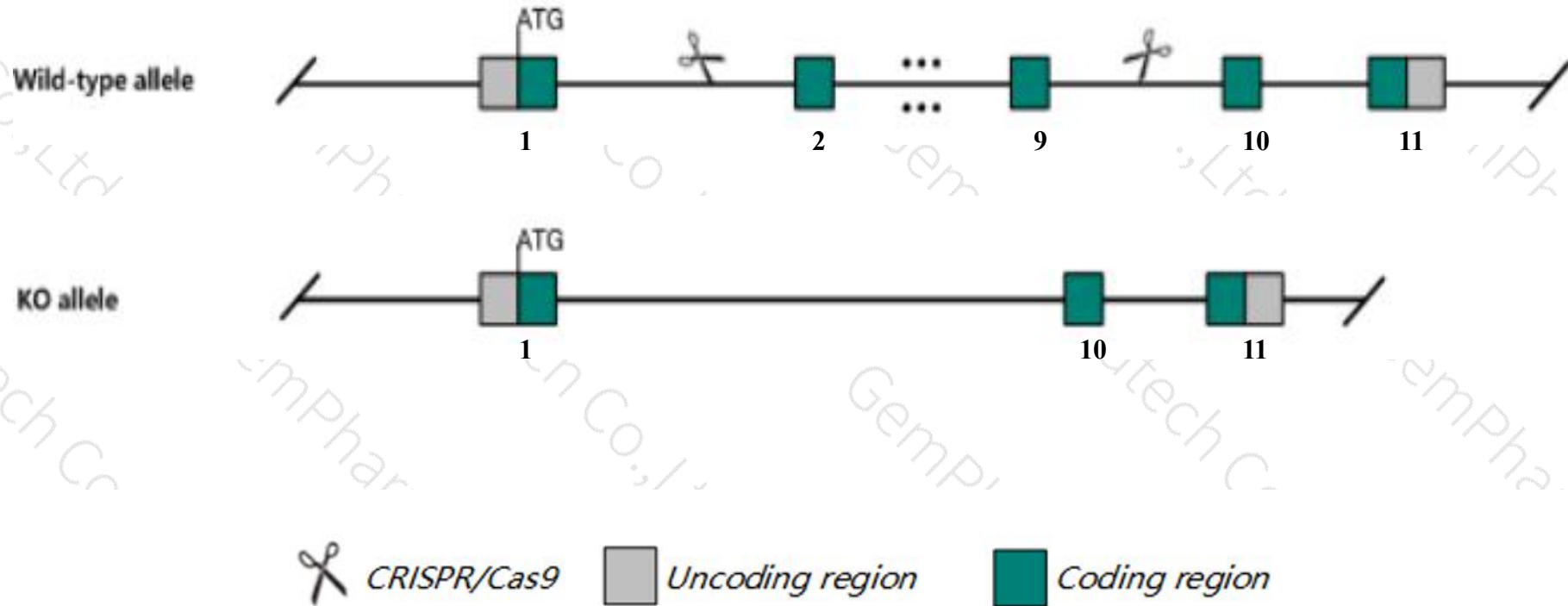|	
Project Name	*Pla1a*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pla1a* gene. The schematic diagram is as follows:

Technical routes

➢ The *Pla1a* gene has 2 transcripts. According to the structure of *Pla1a* gene, exon2-exon9 of *Pla1a-201* (ENSMUST00000002926.7) transcript is recommended as the knockout region.The region contains 1048bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Pla1a* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Pla1a* gene is located on the Chr16. 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）

Pla1a phospholipase A1 member A [*Mus musculus* (house mouse)]

Gene ID: 85031, updated on 27-Feb-2020

Summary

Official Symbol	Pla1a provided by MGI
Official Full Name	phospholipase A1 member A provided by MGI
Primary source	MGI:MGI:1934677
See related	Ensembl:ENSMUSG00000002847
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	Pspla1; Ps-pla1; AA986889
Expression	Biased expression in liver E18 (RPKM 27.9), mammary gland adult (RPKM 23.4) and 13 other tissues See more
Orthologs	human all

Genomic context

Location: 16 B4; 16 26.83 cM
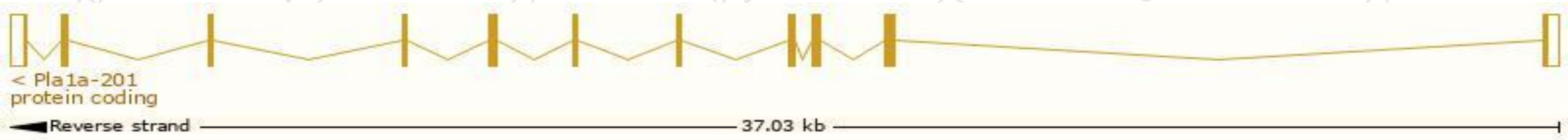
See Pla1a in Genome Data Viewer

Exon count: 12

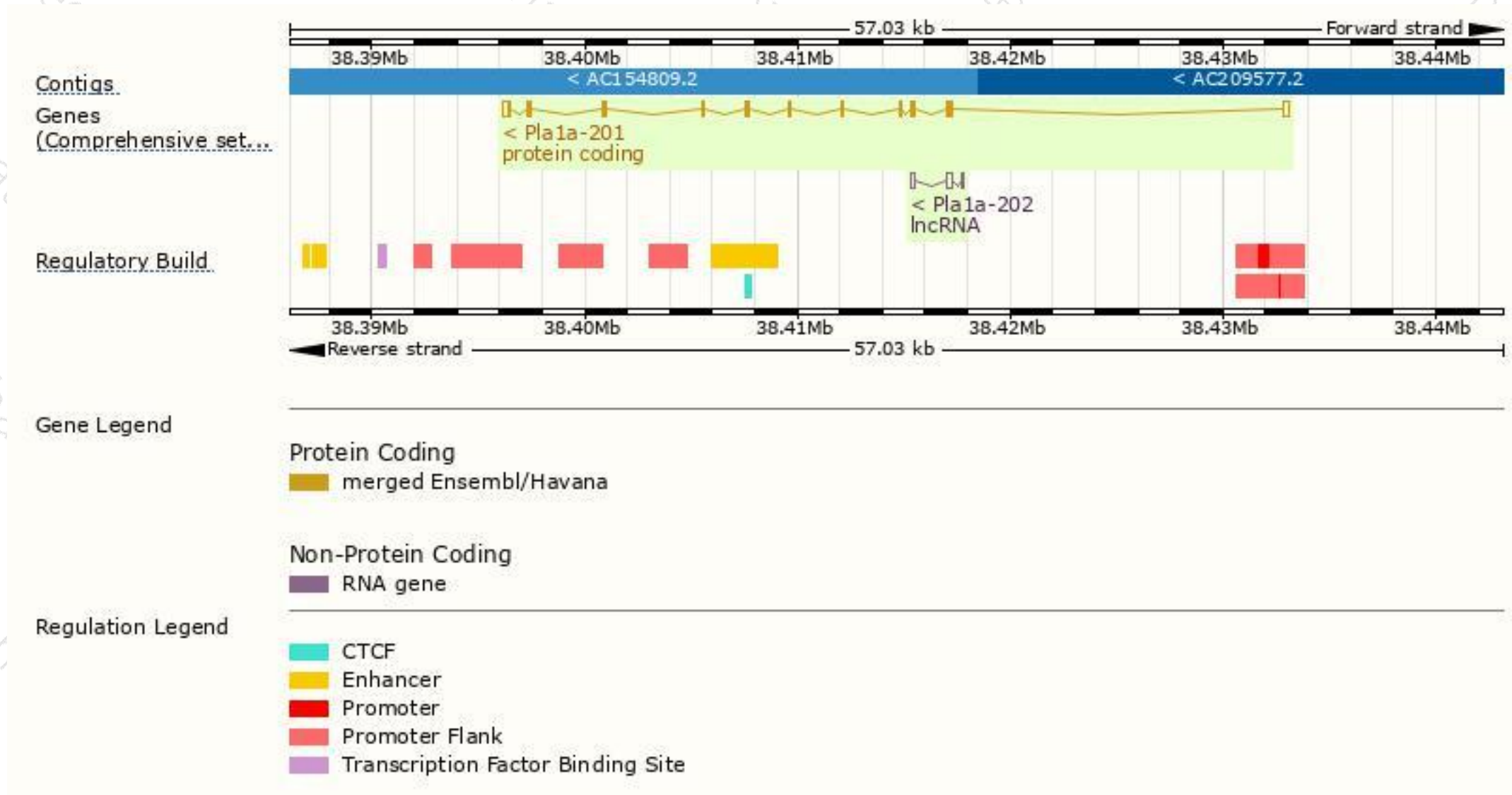| Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	16	NC_000082.6 (38396117..38433191, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	16	NC_000082.5 (38396203..38433225, complement)

Transcript information（Ensembl）

The gene has 2 transcripts,all transcripts are shown below:

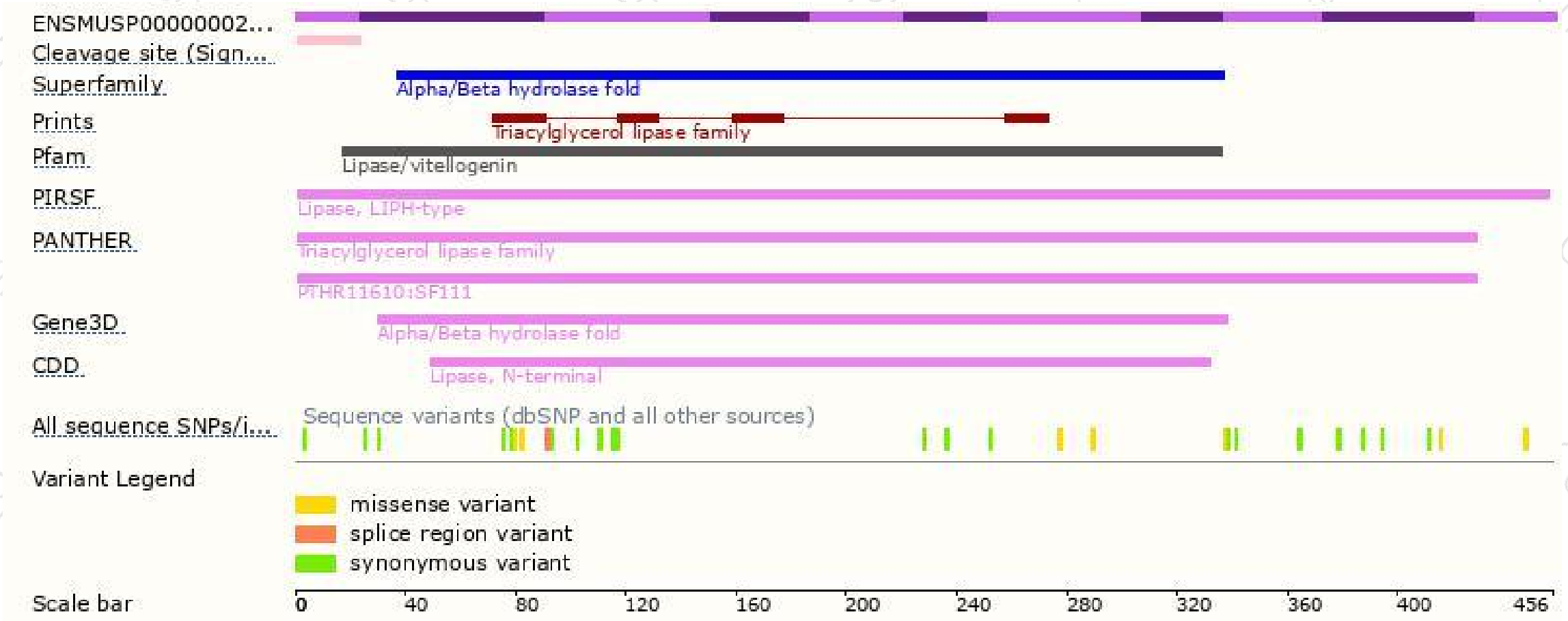| Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pla1a-201	ENSMUST00000002926.7	1974	456aa	Protein coding	CCDS28166	Q8VI78	TSL:1 GENCODE basic APPRIS P1
Pla1a-202	ENSMUST00000232224.1	415	No protein	lncRNA	-	-	

The strategy is based on the design of *Pla1a-201* transcript,The transcription is shown below

< Pla1a-201
protein coding

◄━ Reverse strand

37.03 kb

Genomic location distribution

Protein domain

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