

Pla2g4e Cas9-KO Strategy

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Project Overview

Project Name

Pla2g4e

Project type

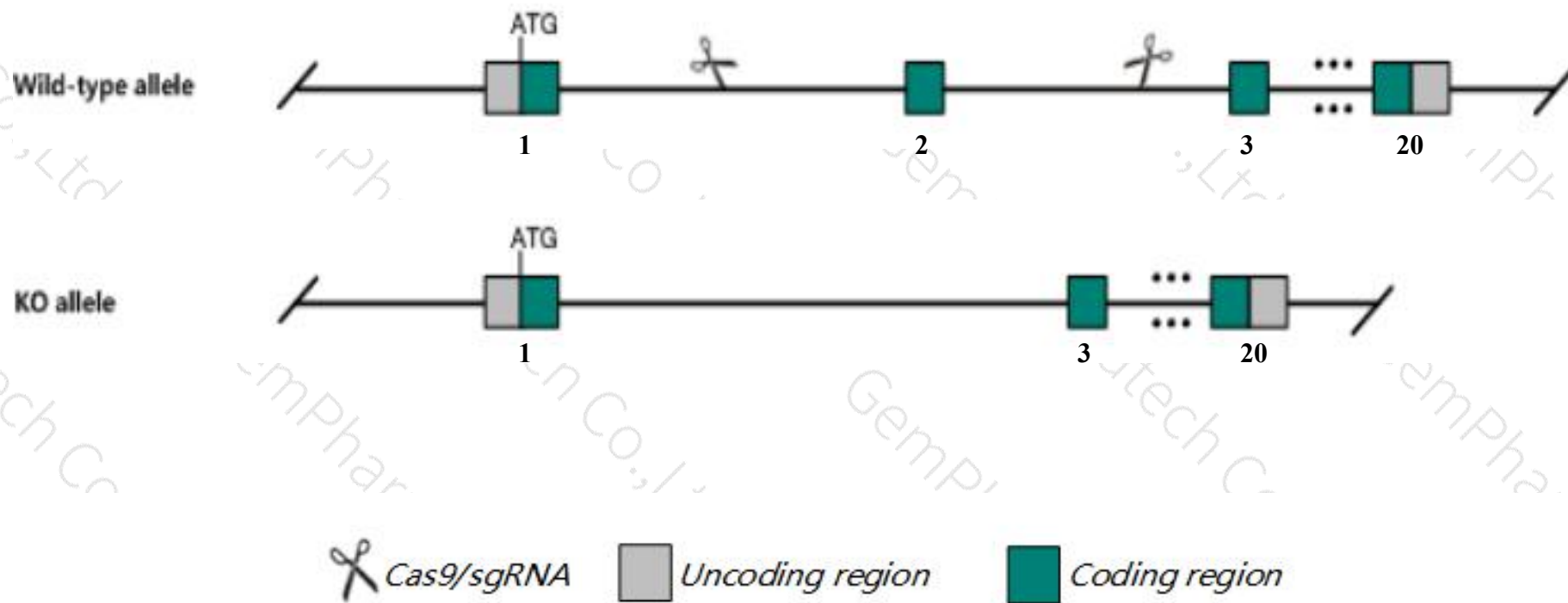
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pla2g4e* gene. The schematic diagram is as follows:



Technical routes

- The *Pla2g4e* gene has 4 transcripts. According to the structure of *Pla2g4e* gene, exon2 of *Pla2g4e-201*(ENSMUST00000090071.4) transcript is recommended as the knockout region. The region contains 73bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pla2g4e* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Pla2g4e* gene is located on the Chr2. 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)

Pla2g4e phospholipase A2, group IVE [Mus musculus (house mouse)]

Gene ID: 329502, updated on 13-Mar-2020

Summary



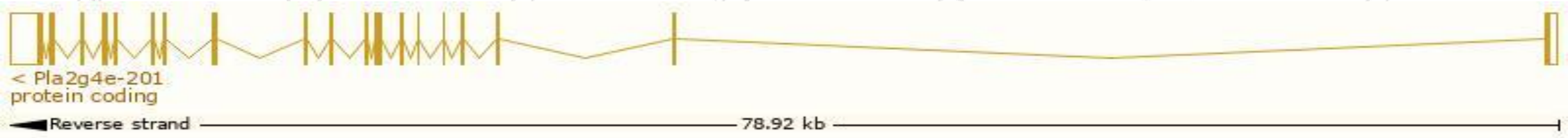
Official Symbol	Pla2g4e provided by MGI
Official Full Name	phospholipase A2, group IVE provided by MGI
Primary source	MGI:MGI:1919144
See related	Ensembl:ENSMUSG00000050211
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310026J01Rik, C230096D22, Pla2epsilon
Expression	Biased expression in CNS E18 (RPKM 3.5), cortex adult (RPKM 3.4) and 13 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

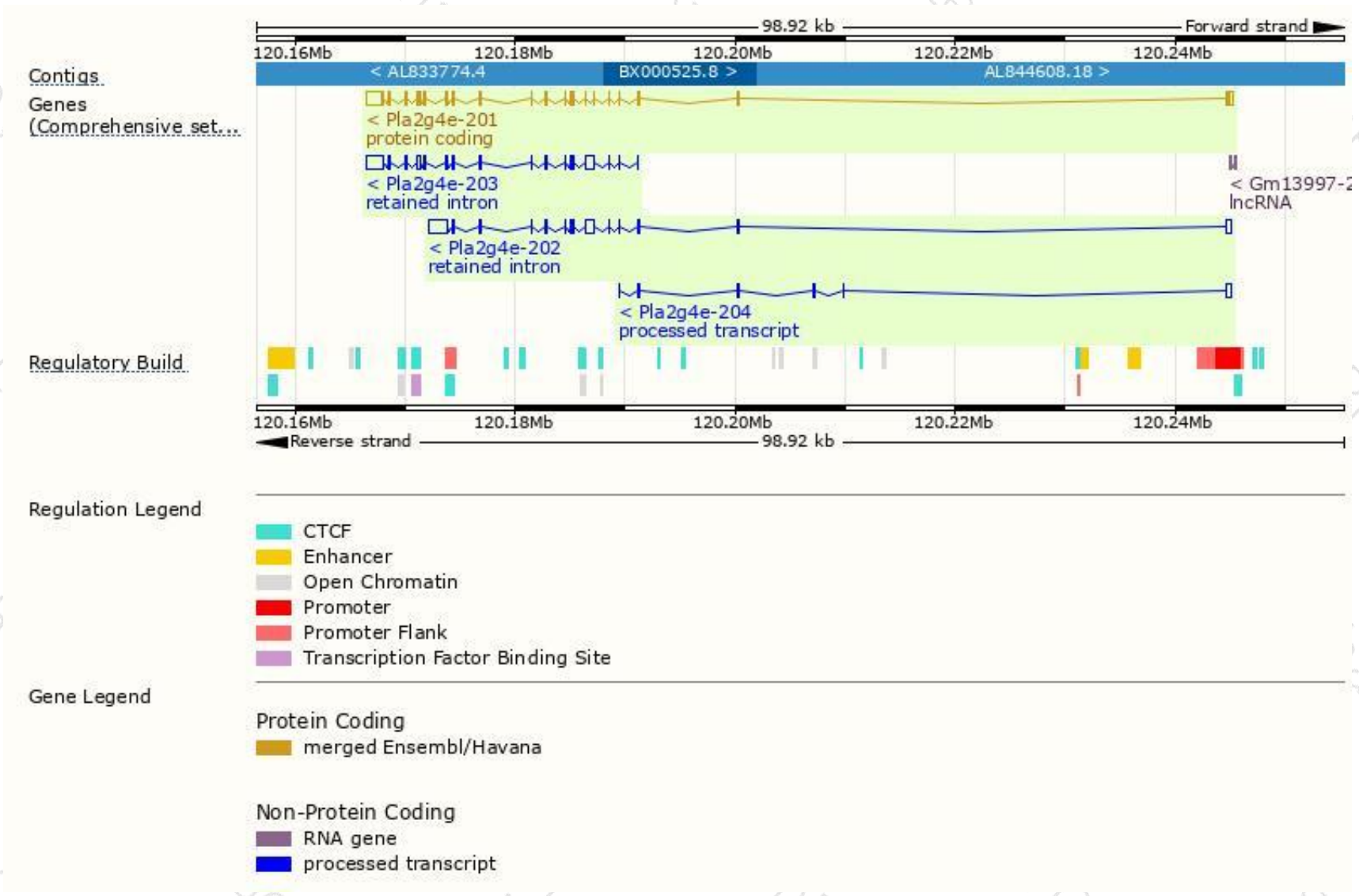
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pla2g4e-201	ENSMUST00000090071.4	4477	875aa	Protein coding	CCDS16616	Q50L42	TSL:1 GENCODE basic APPRIS P1
Pla2g4e-204	ENSMUST00000152263.1	977	No protein	Processed transcript	-	-	TSL:5
Pla2g4e-203	ENSMUST00000136845.7	4424	No protein	Retained intron	-	-	TSL:5
Pla2g4e-202	ENSMUST00000127009.7	4187	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Pla2g4e-201* transcript,the transcription is shown below:



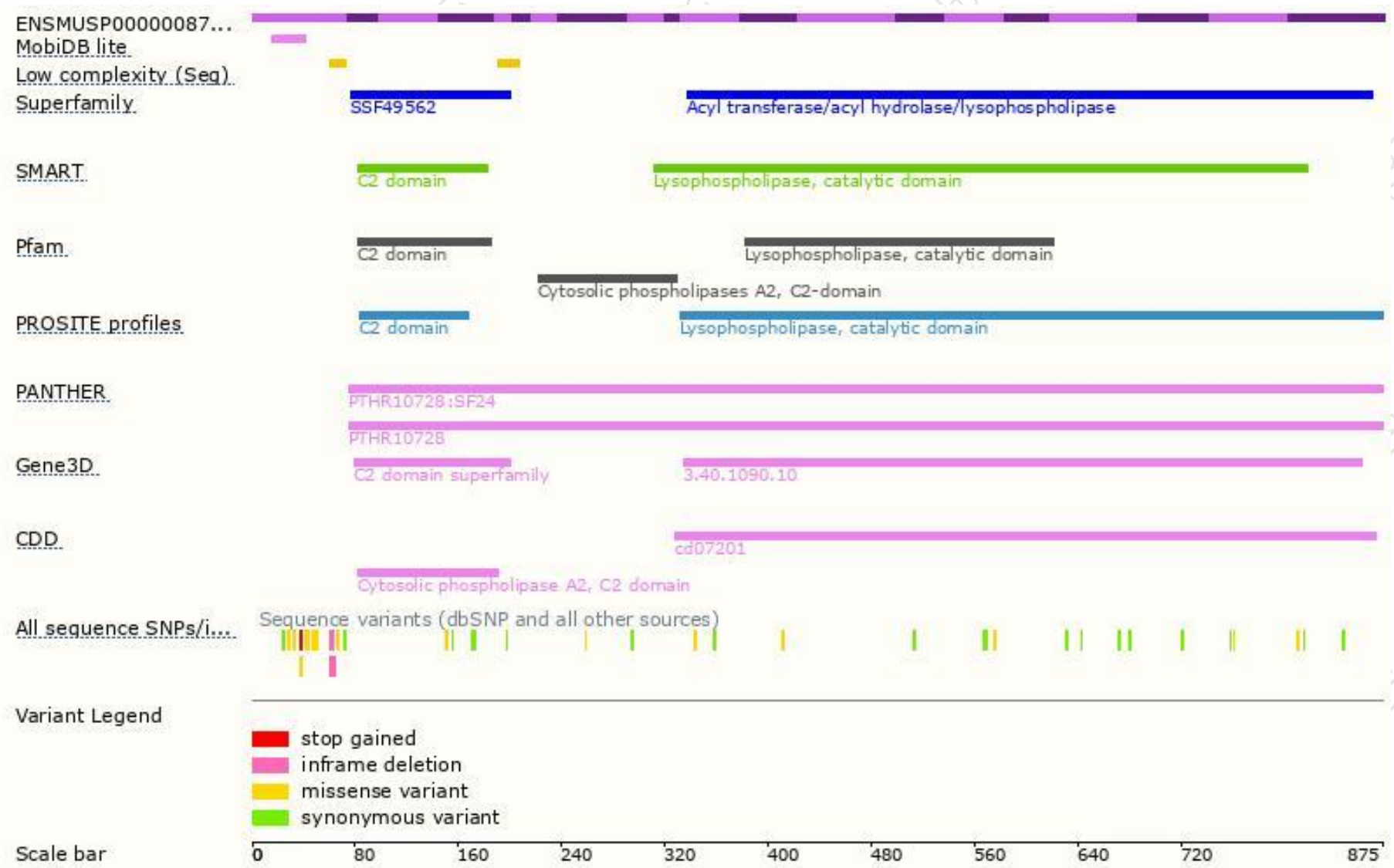
Genomic location distribution



Protein domain



集萃药康
GemPharmatech



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

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