

Pla2g4c Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Pla2g4c

Project type

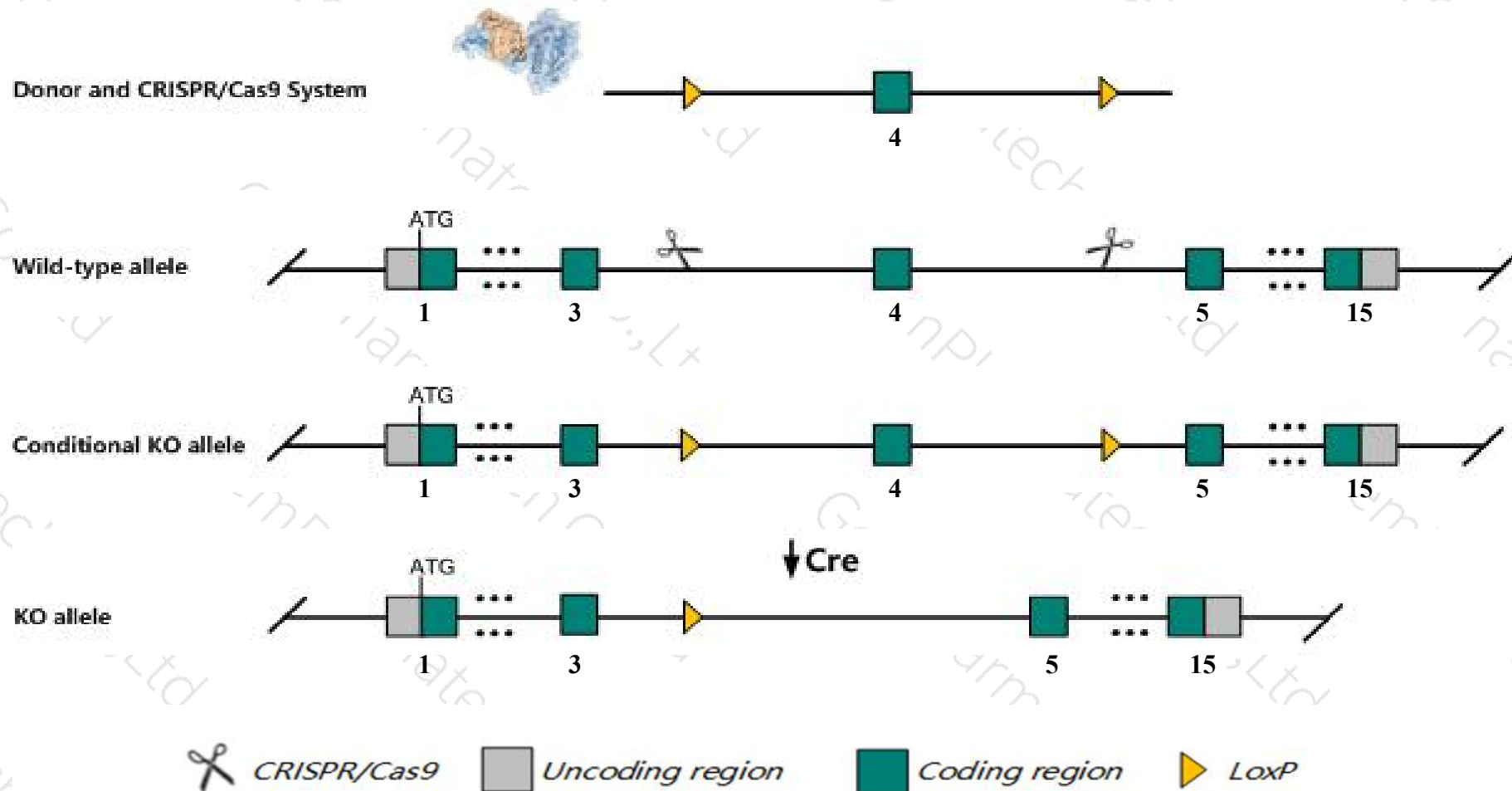
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pla2g4c* gene. The schematic diagram is as follows:



Technical routes

- The *Pla2g4c* gene has 4 transcripts. According to the structure of *Pla2g4c* gene, exon4 of *Pla2g4c-203* (ENSMUST00000108528.8) transcript is recommended as the knockout region. The region contains 190bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pla2g4c* 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

- The *Pla2g4c* 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.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- 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)

Pla2g4c phospholipase A2, group IVC (cytosolic, calcium-independent) [Mus musculus (house mouse)]

Gene ID: 232889, updated on 10-Feb-2019

Summary



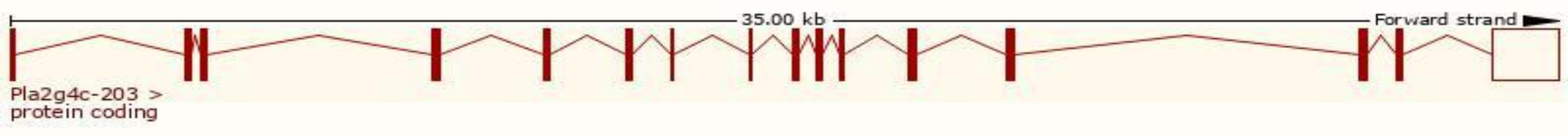
Official Symbol	Pla2g4c provided by MGI
Official Full Name	phospholipase A2, group IVC (cytosolic, calcium-independent) provided by MGI
Primary source	MGI:MGI:1196403
See related	Ensembl:ENSMUSG00000033847
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	D7Etd445e
Expression	Low expression observed in reference dataset See more

Transcript information (Ensembl)

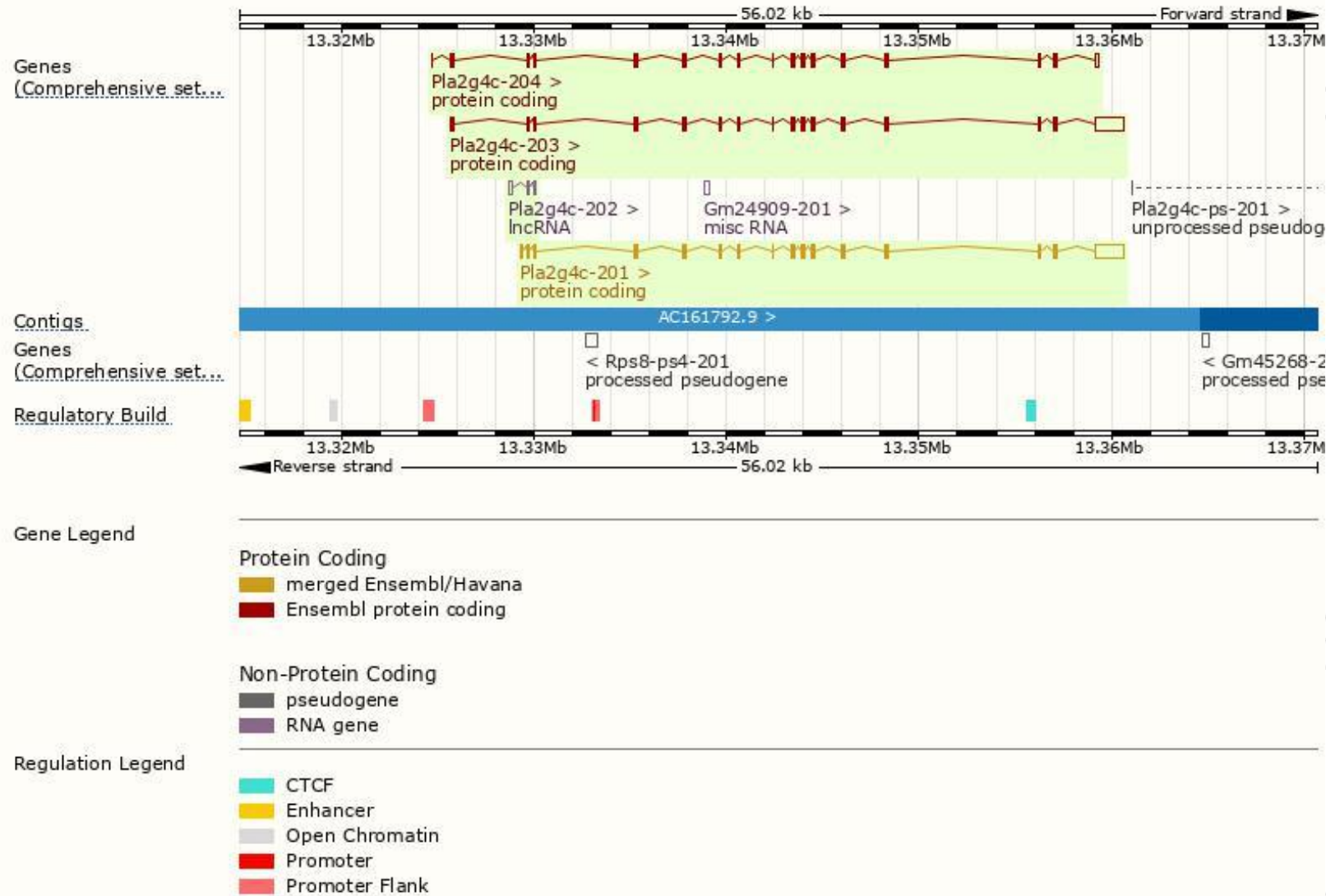
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pla2g4c-203	ENSMUST00000108528.8	3390	607aa	Protein coding	CCDS52027	Q64GA5	TSL:1 GENCODE basic APPRIS ALT2
Pla2g4c-201	ENSMUST00000043612.9	3382	597aa	Protein coding	CCDS39771	Q64GA5	TSL:1 GENCODE basic APPRIS P3
Pla2g4c-204	ENSMUST00000167232.7	2154	607aa	Protein coding	CCDS52027	Q64GA5	TSL:5 GENCODE basic APPRIS ALT2
Pla2g4c-202	ENSMUST00000108257.2	401	No protein	lncRNA	-	-	TSL:2

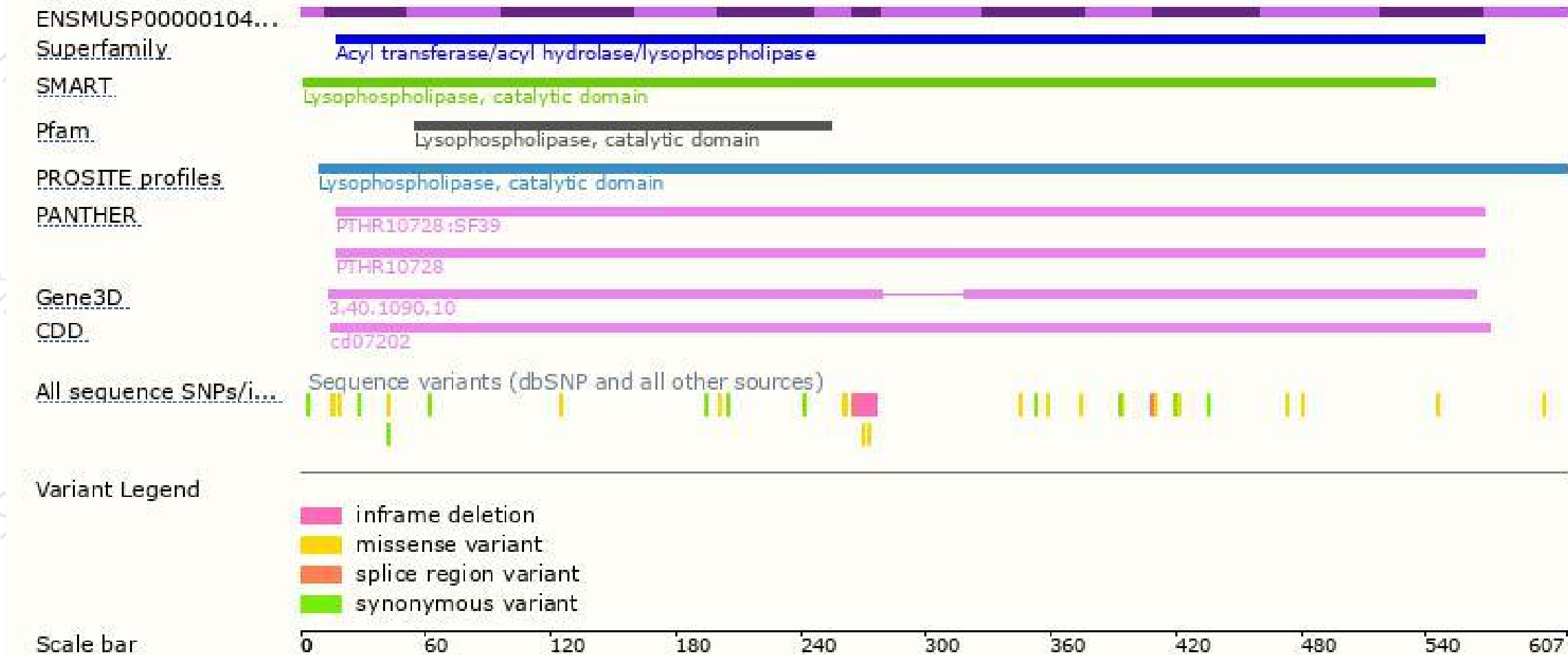
The strategy is based on the design of *Pla2g4c-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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