

Pla2g1b Cas9-KO Strategy

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Project Overview

Project Name

Pla2g1b

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pla2g1b* gene. The schematic diagram is as follows:



- The *Pla2g1b* gene has 5 transcripts. According to the structure of *Pla2g1b* gene, exon2 of *Pla2g1b-201* (ENSMUST00000031495.10) transcript is recommended as the knockout region. The region contains 160bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pla2g1b* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for disruptions in this gene display abnormalities in lipid absorption, increased insulin sensitivity and improved glucose tolerance.
- The *Pla2g1b* gene is located on the Chr5. 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)

Pla2g1b phospholipase A2, group IB, pancreas [Mus musculus (house mouse)]

Gene ID: 18778, updated on 31-Jan-2019

Summary



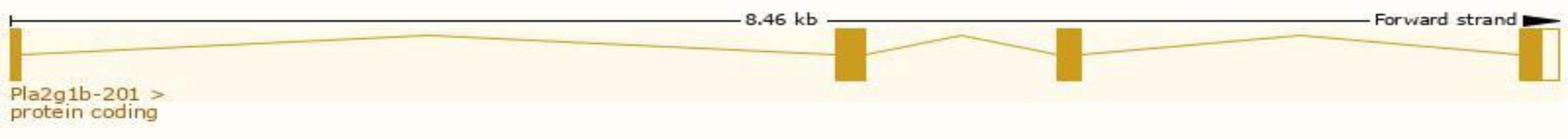
Official Symbol	Pla2g1b provided by MGI
Official Full Name	phospholipase A2, group IB, pancreas provided by MGI
Primary source	MGI:MGI:101842
See related	Ensembl:ENSMUSG00000029522
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Pla2a, sPLA2IB
Expression	Restricted expression toward stomach adult (RPKM 11970.9) See more
Orthologs	human all

Transcript information (Ensembl)

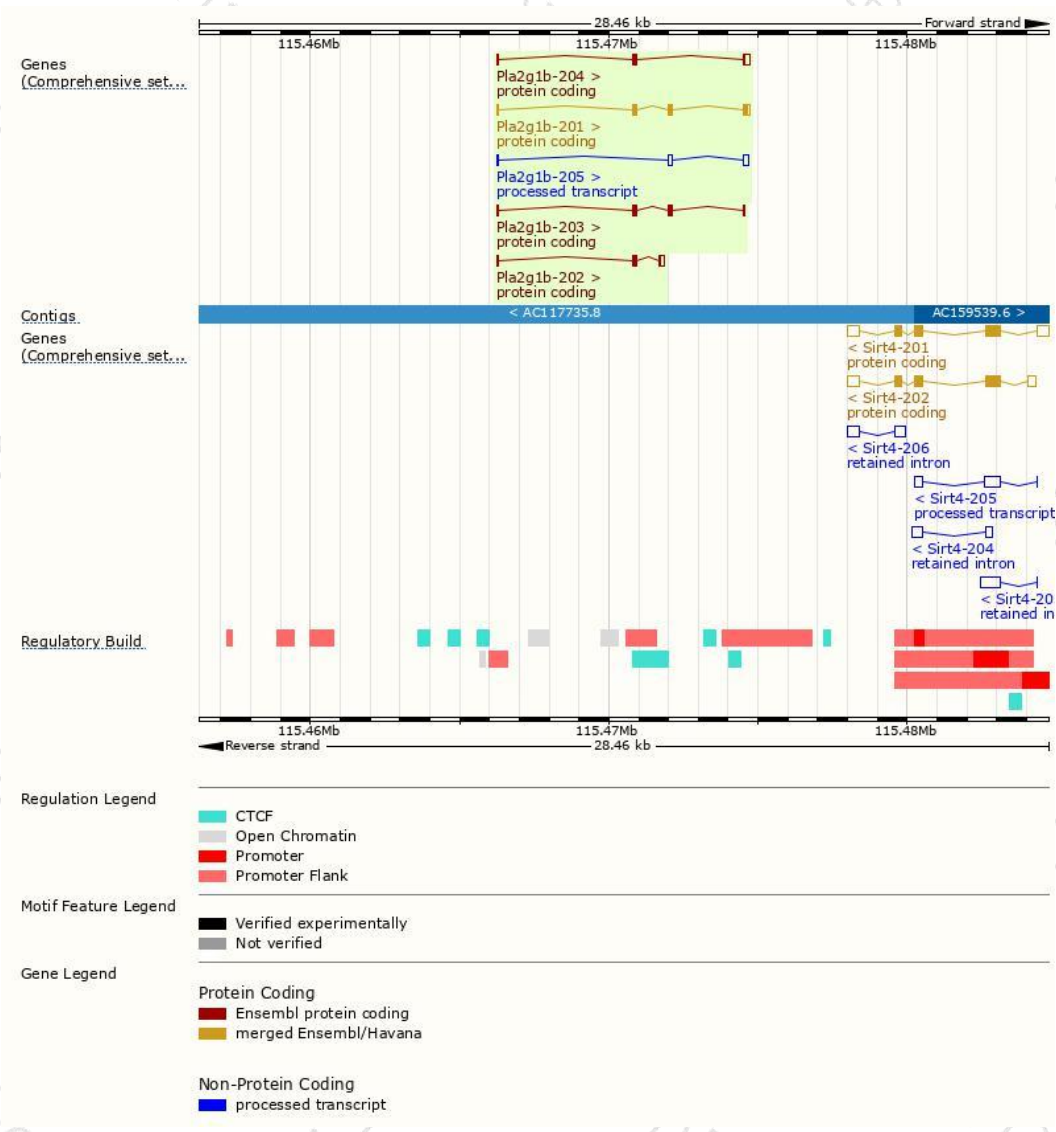
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pla2g1b-201	ENSMUST00000031495.10	557	146aa	Protein coding	CCDS19592	Q9Z0Y2	TSL:1 GENCODE basic APPRIS P1
Pla2g1b-204	ENSMUST00000145785.7	419	77aa	Protein coding	-	S4R2K6	TSL:5 GENCODE basic
Pla2g1b-203	ENSMUST00000125568.1	387	124aa	Protein coding	-	D3YWH2	CDS 3' incomplete TSL:2
Pla2g1b-202	ENSMUST00000112071.7	361	82aa	Protein coding	-	D3Z1N8	TSL:1 GENCODE basic
Pla2g1b-205	ENSMUST00000202822.1	371	No protein	Processed transcript	-	-	TSL:1

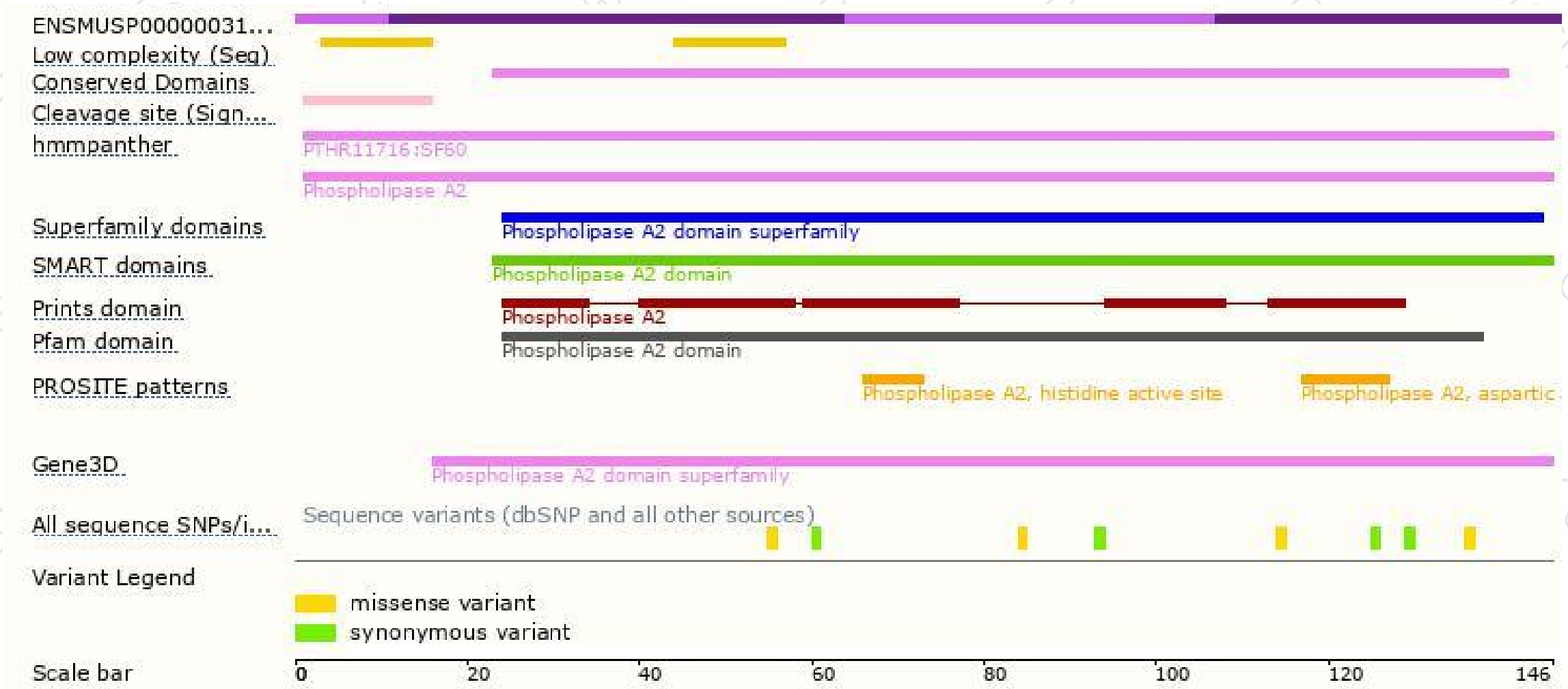
The strategy is based on the design of *Pla2g1b-201* transcript,The transcription is shown below



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/>).

According to the existing MGI data, Mice homozygous for disruptions in this gene display abnormalities in lipid absorption, increased insulin sensitivity and improved glucose tolerance.

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

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