

Lipg Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Lipg

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Lipg* gene has 2 transcripts. According to the structure of *Lipg* gene, exon2-exon3 of *Lipg-201* (ENSMUST00000066532.4) transcript is recommended as the knockout region. The region contains 362bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lipg* gene. The brief process is as follows: CRISPR/Cas9 system we

- According to the existing MGI data, Mice homozygous for a null allele exhibit increased circulating total cholesterol and HDL as well as decreased monocyte binding to vascular endothelium.
- The *Lipg* gene is located on the Chr18. 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.

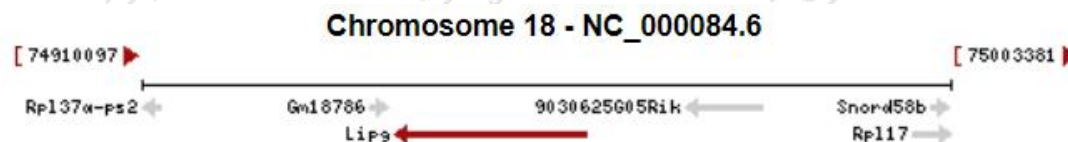
Gene information (NCBI)

Lipg lipase, endothelial [*Mus musculus* (house mouse)]

Gene ID: 16891, updated on 10-Oct-2019

Summary

Official Symbol	Lipg provided by MGI
Official Full Name	lipase, endothelial provided by MGI
Primary source	MGI:MGI:1341803
See related	Ensembl:ENSMUSG000000053846
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	EL; mEDL; lipase; 3110013K01Rik
Expression	Biased expression in genital fat pad adult (RPKM 41.5), ovary adult (RPKM 21.2) and 10 other tissues See more
Orthologs	human all

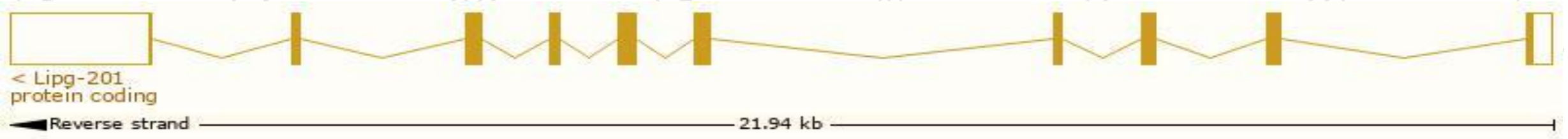


Transcript information (Ensembl)

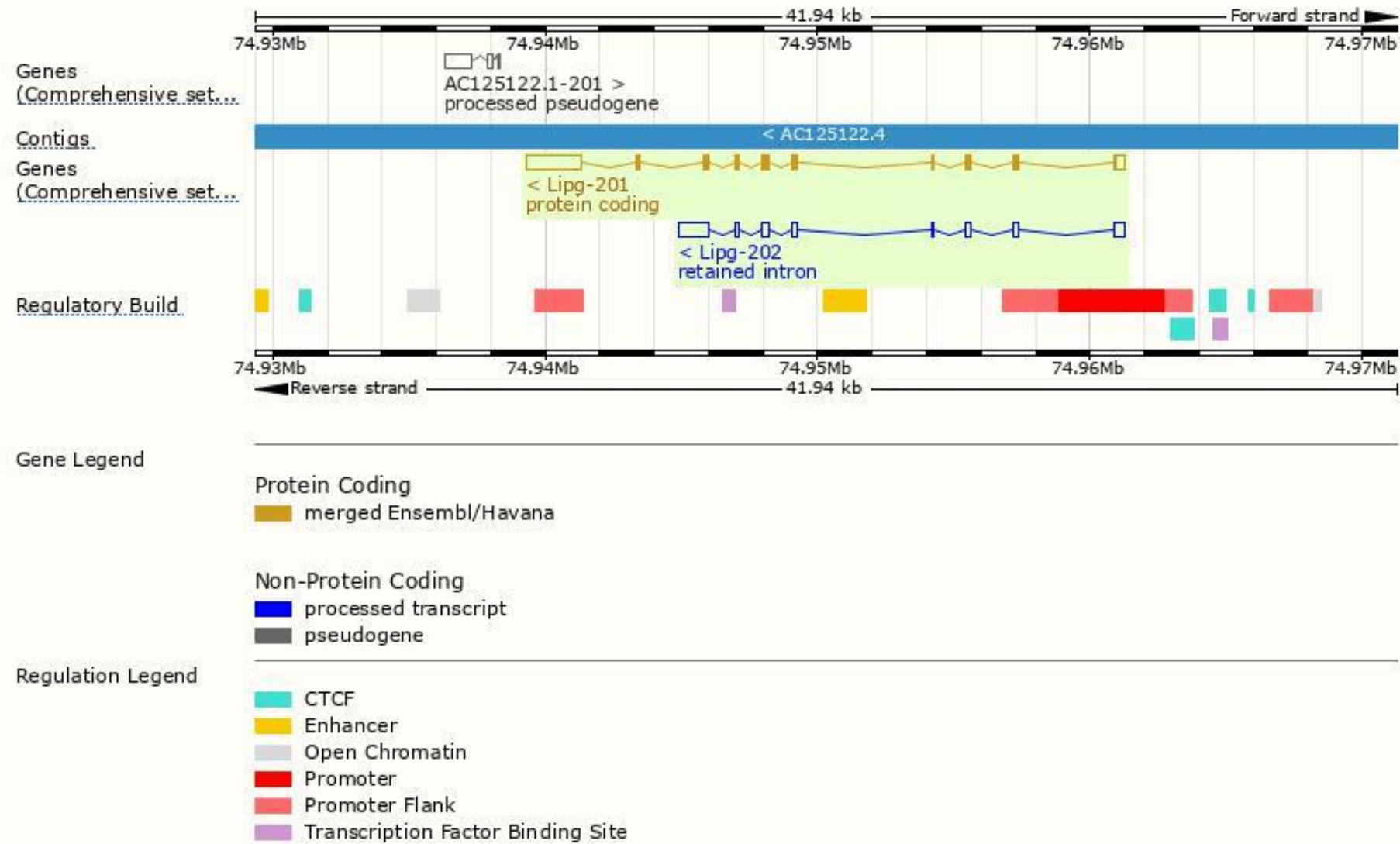
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Translation ID	Biotype	CCDS	UniProt	Flags
Lipg-201	ENSMUST00000066532.4	3787	500aa	ENSMUSP00000066536.4	Protein coding	CCDS29343	C0LQ91 Q9WVG5	TSL:1 GENCODE basic APPRIS P1
Lipg-202	ENSMUST000000235783.1	2592	No protein	-	Retained intron	-	-	-

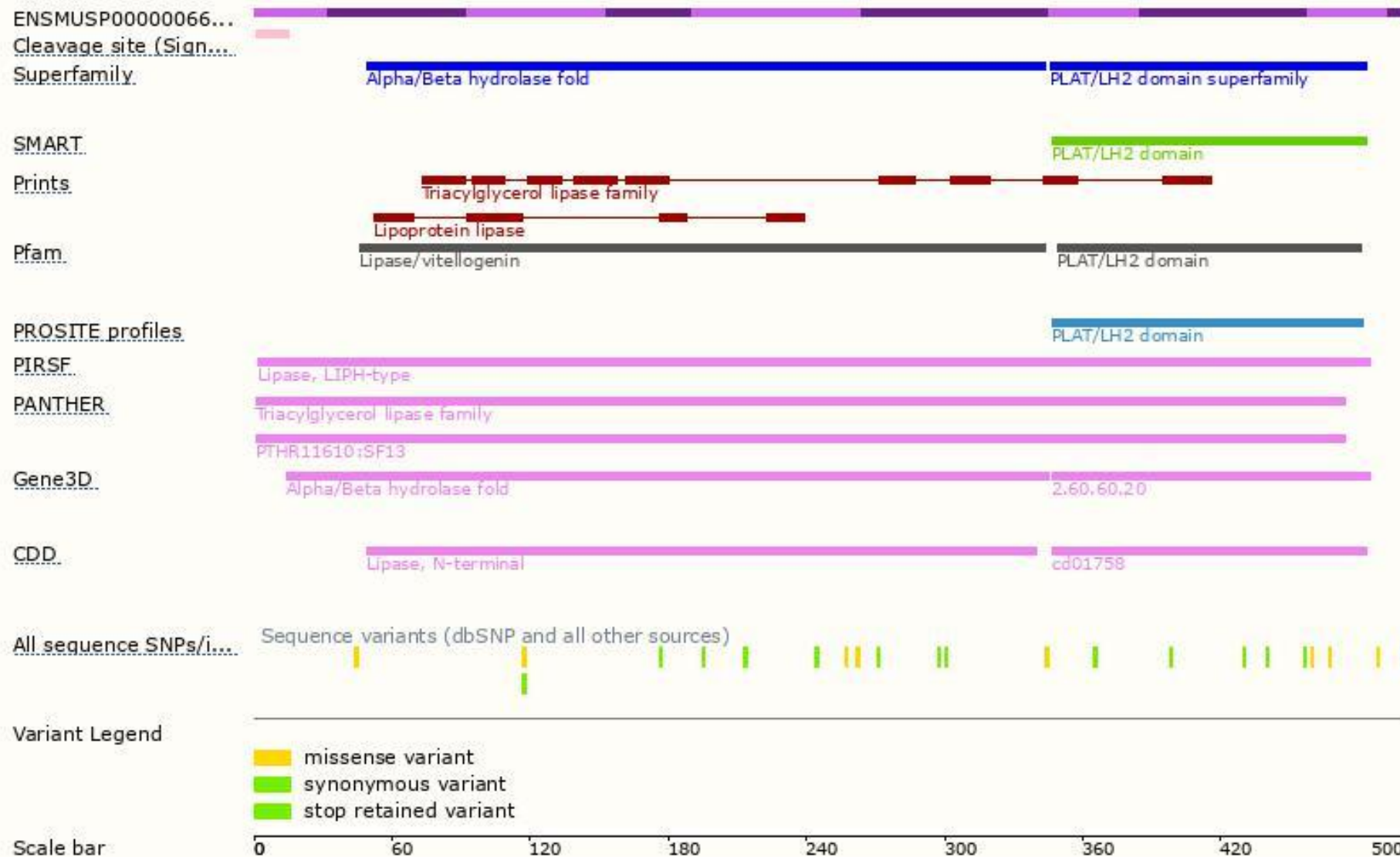
The strategy is based on the design of *Lipg-201* transcript,The transcription is shown below



Genomic location distribution

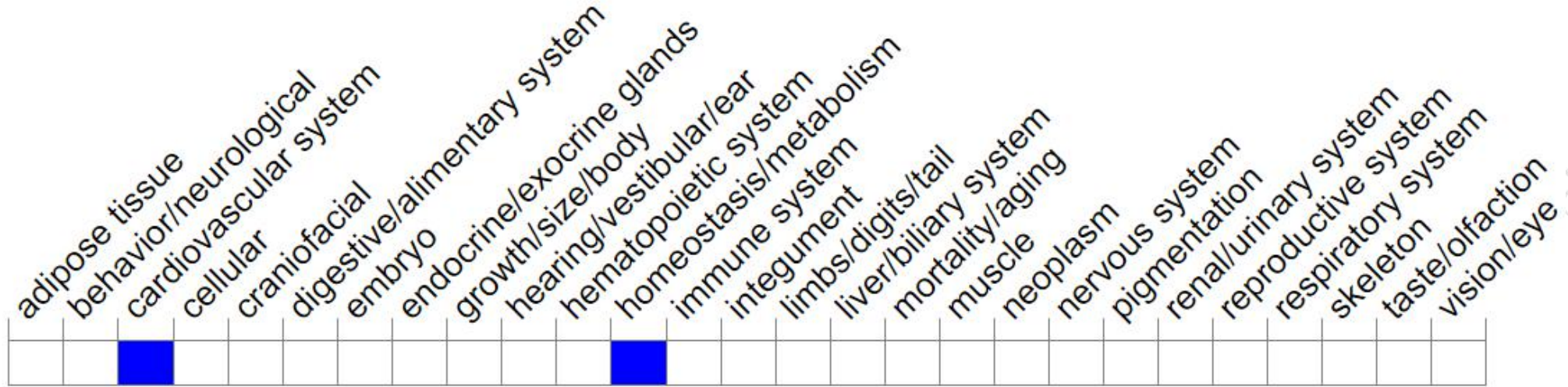


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



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 a null allele exhibit increased circulating total cholesterol and HDL as well as decreased monocyte binding to vascular endothelium.

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

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