

Plpp3 Cas9-KO Strategy

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Project Overview

Project Name

Plpp3

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plpp3* gene. The schematic diagram is as follows:



- The *Plpp3* gene has 1 transcript. According to the structure of *Plpp3* gene, exon2 of *Plpp3-201* (ENSMUST00000064139.7) transcript is recommended as the knockout region. The region contains 158bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plpp3* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygous mutant mice do not survive past E10.5 and show defects in extraembryonic vasculogenesis and axis patterning.
- The *Plpp3* gene is located on the Chr4. 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)

Plpp3 phospholipid phosphatase 3 [Mus musculus (house mouse)]

Gene ID: 67916, updated on 31-Jan-2019

Summary



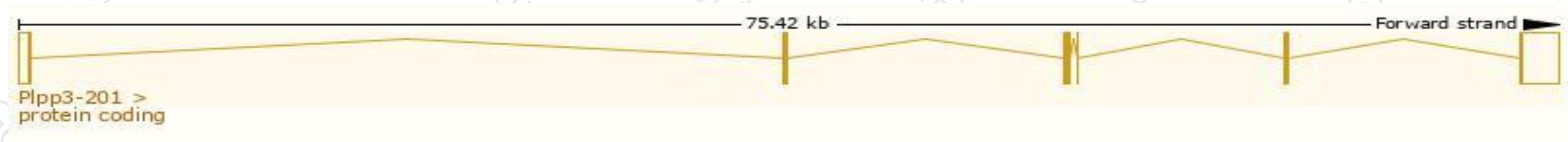
Official Symbol	Plpp3 provided by MGI
Official Full Name	phospholipid phosphatase 3 provided by MGI
Primary source	MGI:MGI:1915166
See related	Ensembl:ENSMUSG00000028517
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110003O22Rik, 2610002D05Rik, AV025606, D4Bwg0538e, D4Bwg1535e, Lpp3, PRG-2, Ppab2b, Ppap2b
Expression	Ubiquitous expression in adrenal adult (RPKM 134.7), lung adult (RPKM 77.9) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

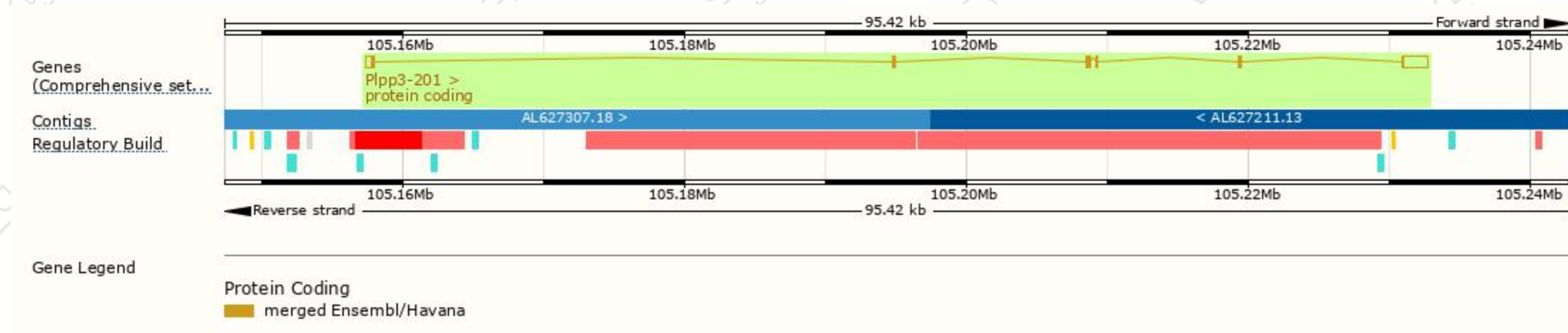
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Plpp3-201	ENSMUST00000064139.7	3159	312aa	Protein coding	CCDS18417	Q99JY8	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Plpp3-201* transcript, The transcription is shown below



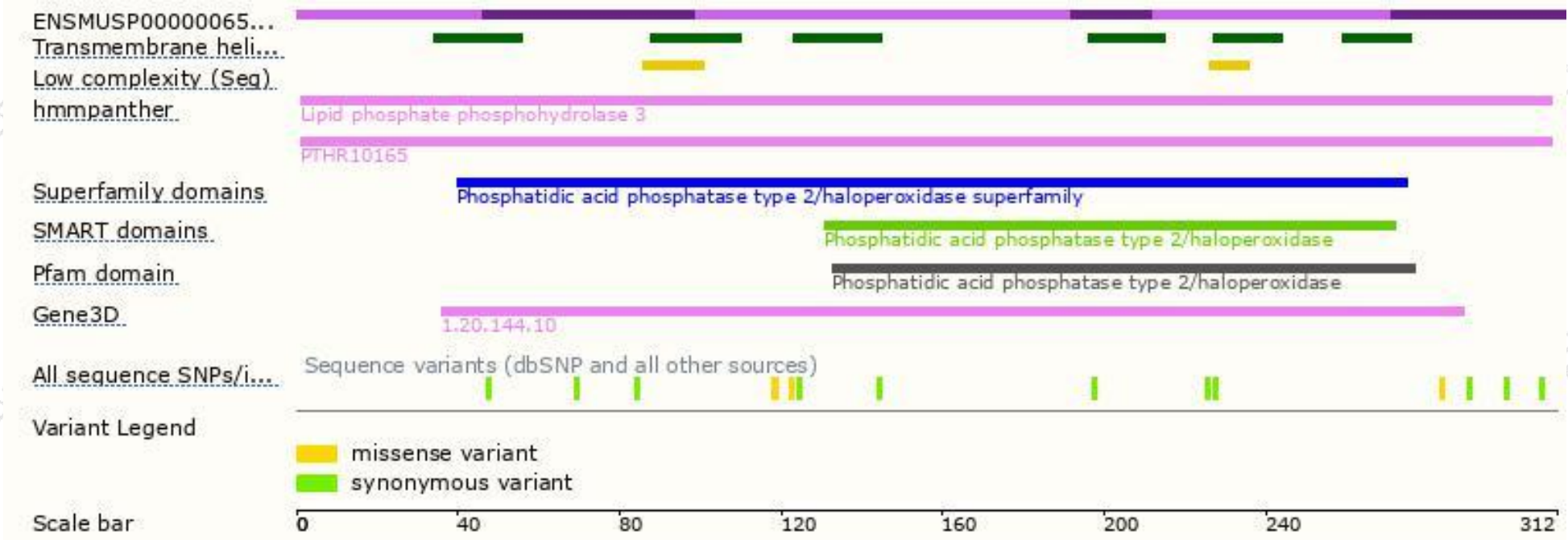
Genomic location distribution



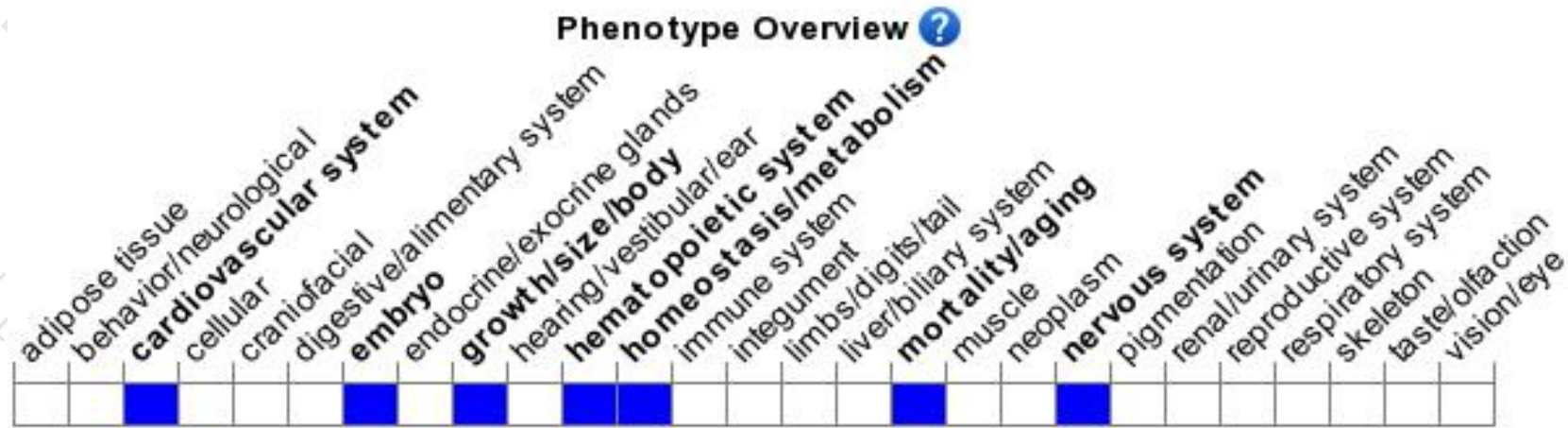
Protein domain



集萃药康
GemPharmatech



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, Homozygous mutant mice do not survive past E10.5 and show defects in extraembryonic vasculogenesis and axis patterning.

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

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