

Phlpp1 Cas9-KO Strategy

Designer:

Jinling Wang

Design Date:

2019-7-19

Project Overview

Project Name

Phlpp1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Phlpp1* gene. The schematic diagram is as follows:



- The *Phlpp1* gene has 3 transcripts. According to the structure of *Phlpp1* gene, exon2-exon3 of *Phlpp1-201* (ENSMUST00000061047.6) transcript is recommended as the knockout region. The region contains 323bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Phlpp1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null mutation display impairment in the ability to stabilize the circadian period after light induced resetting.
- The *Phlpp1* gene is located on the Chr1. 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)

Phlpp1 PH domain and leucine rich repeat protein phosphatase 1 [Mus musculus (house mouse)]

Gene ID: 98432, updated on 31-Jan-2019

Summary



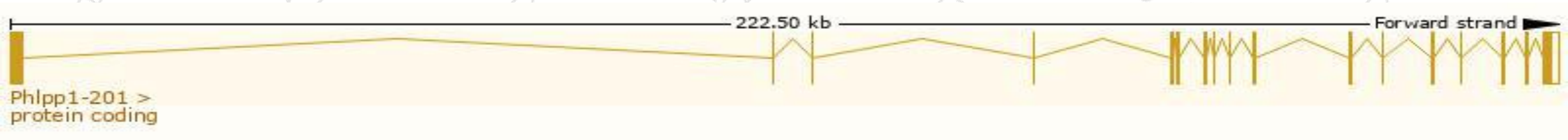
Official Symbol	Phlpp1 provided by MGI
Official Full Name	PH domain and leucine rich repeat protein phosphatase 1 provided by MGI
Primary source	MGI:MGI:2138327
See related	Ensembl:ENSMUSG00000044340
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI836256, Phlpp, Plekhe1, SCOP, mKIAA0606
Expression	Ubiquitous expression in testis adult (RPKM 28.1), cerebellum adult (RPKM 15.2) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

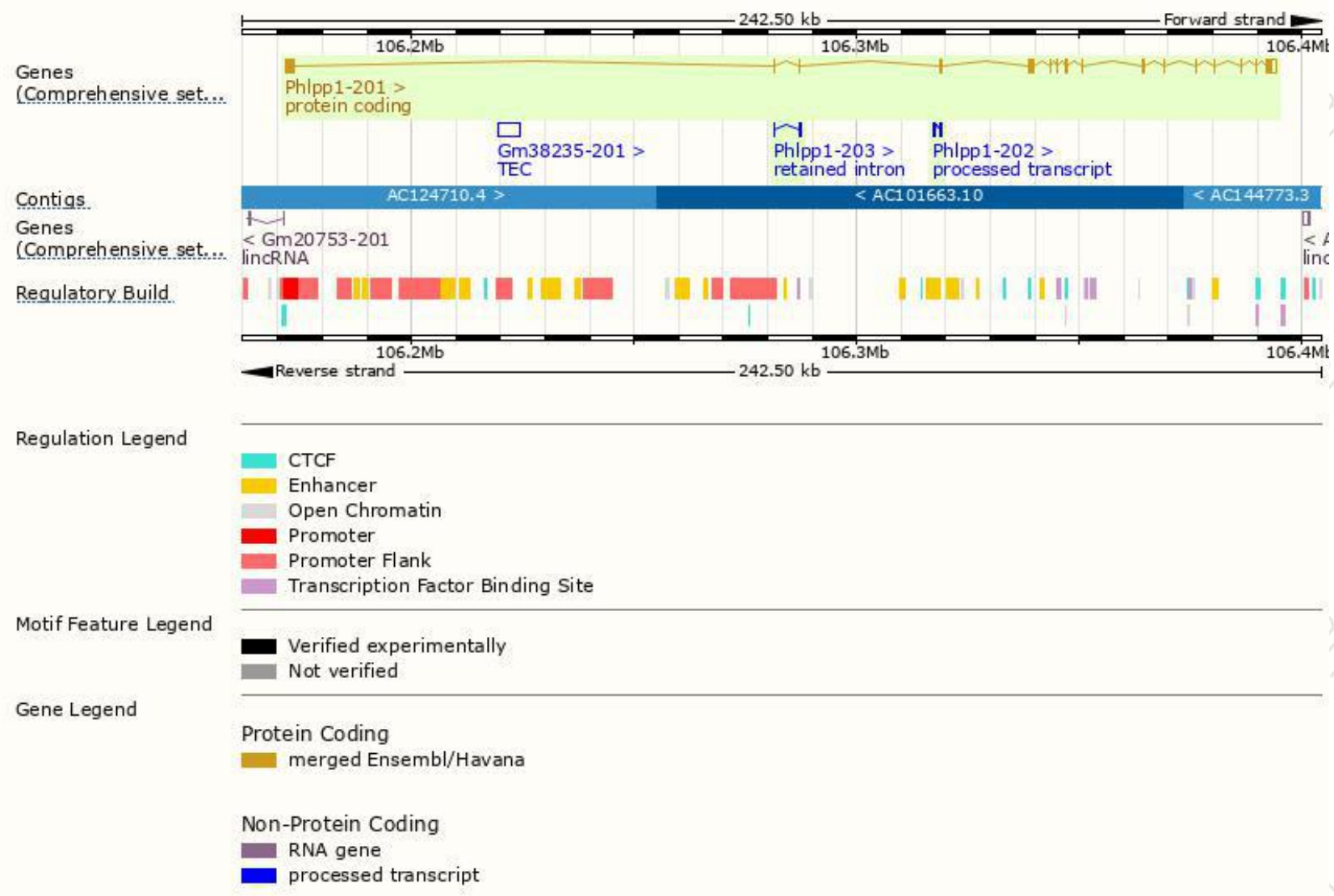
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Phlpp1-201	ENSMUST00000061047.6	6226	1687aa	Protein coding	CCDS48337	Q8CHE4	TSL:1 GENCODE basic APPRIS P1
Phlpp1-202	ENSMUST00000124895.1	387	No protein	Processed transcript	-	-	TSL:2
Phlpp1-203	ENSMUST00000135810.2	567	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Phlpp1-201* transcript,The transcription is shown below



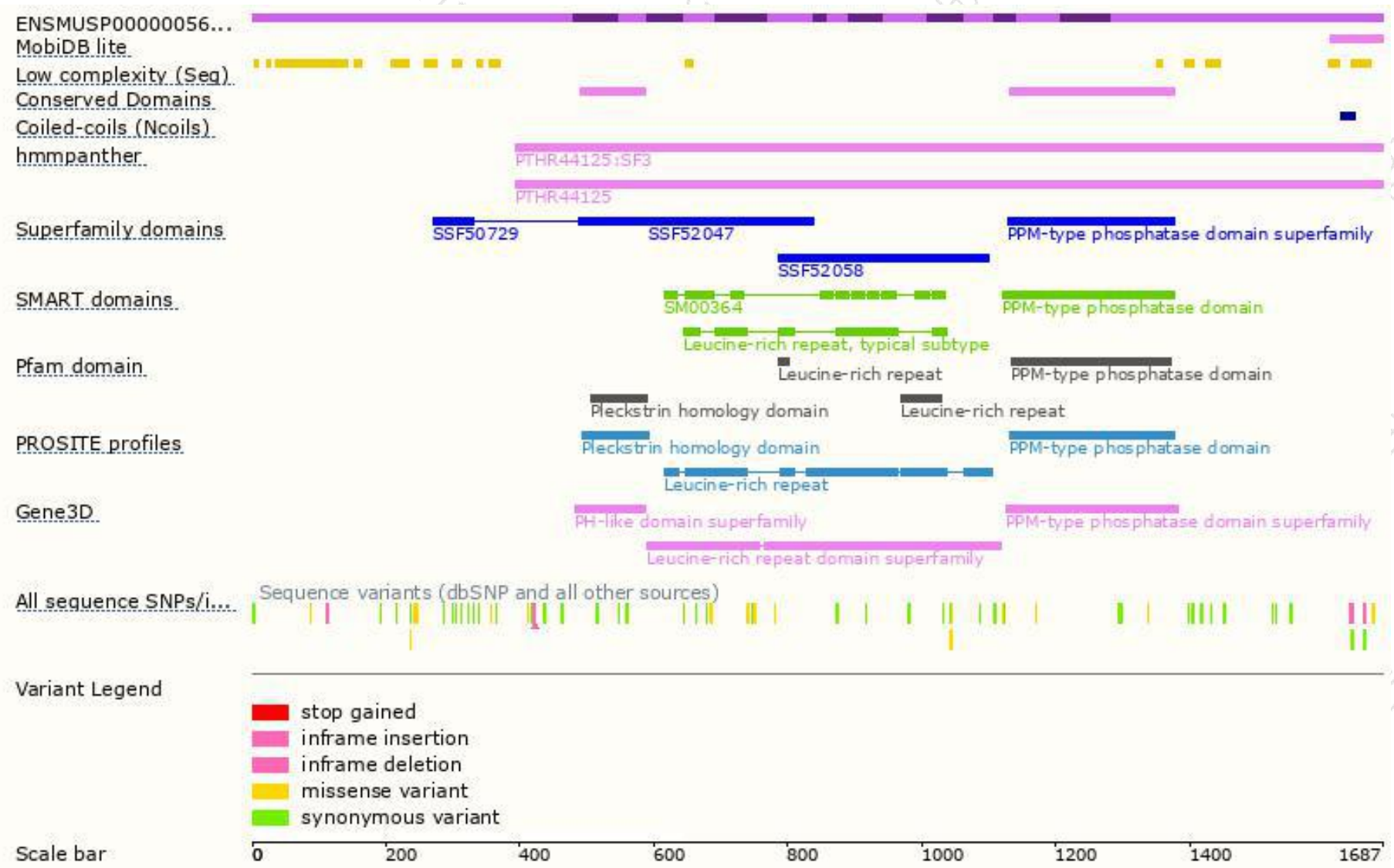
Genomic location distribution



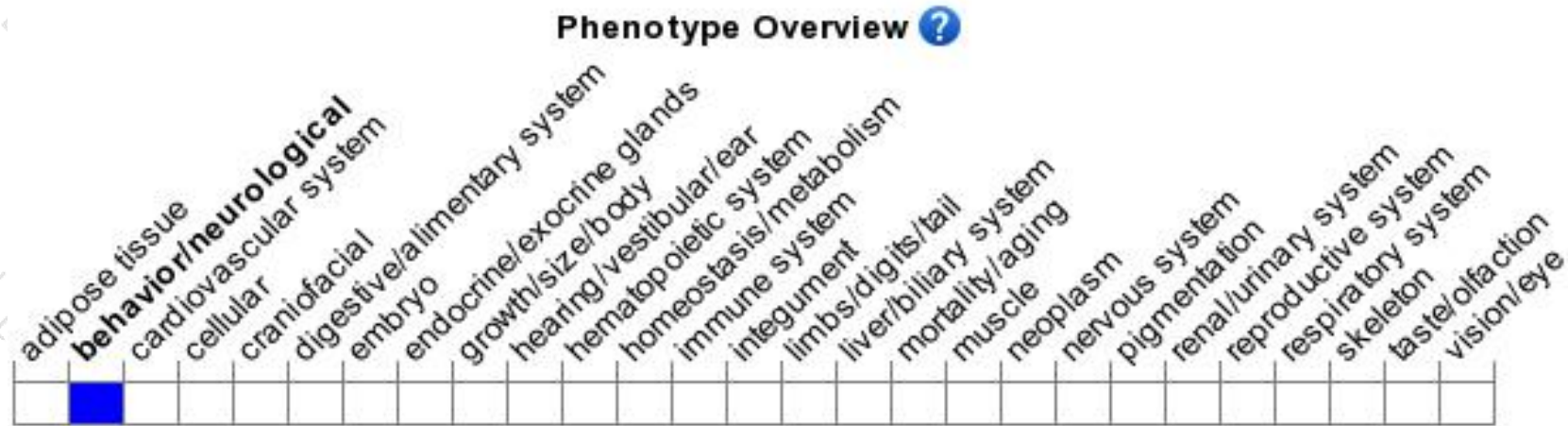
Protein domain



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, Mice homozygous for a null mutation display impairment in the ability to stabilize the circadian period after light induced resetting.

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

Tel: 400-9660890

