

Ppp1r14d Cas9-KO Strategy

Designer: Lingyan Wu

Reviewer: Rui Xiong

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Project Overview

Project Name

Ppp1r14d

Project type

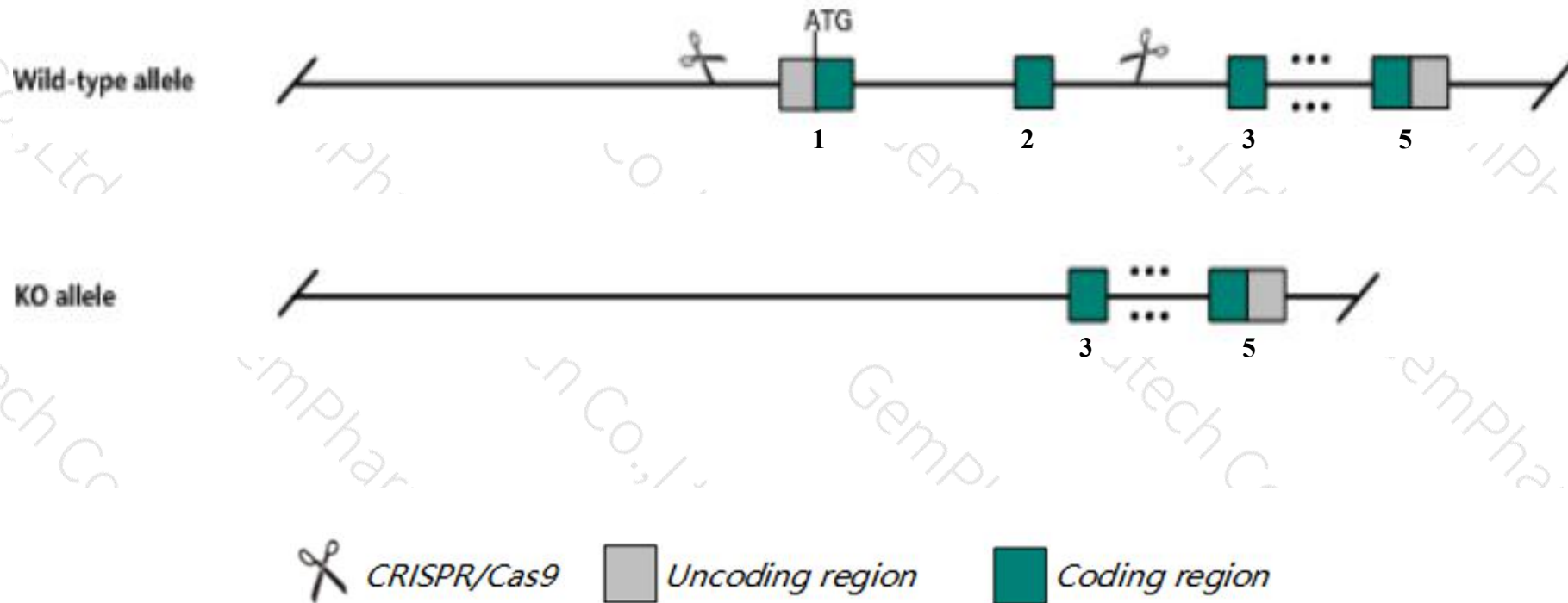
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppp1r14d* gene. The schematic diagram is as follows:



- The *Ppp1r14d* gene has 2 transcripts. According to the structure of *Ppp1r14d* gene, exon1-exon2 of *Ppp1r14d*-202(ENSMUST00000110820.2) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ppp1r14d* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Ppp1r14d* gene is located on the Chr2. 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)

Ppp1r14d protein phosphatase 1, regulatory inhibitor subunit 14D [Mus musculus (house mouse)]

Gene ID: 72112, updated on 13-Mar-2020

Summary



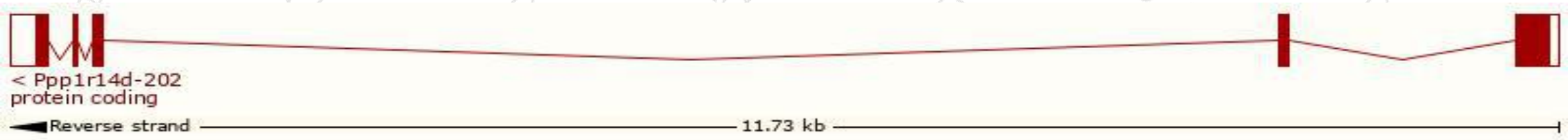
Official Symbol	Ppp1r14d provided by MGI
Official Full Name	protein phosphatase 1, regulatory inhibitor subunit 14D provided by MGI
Primary source	MGI:MGI:1919362
See related	Ensembl:ENSMUSG00000027317
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2010107K19Rik, GBPI-1, Ppp1r14
Expression	Biased expression in large intestine adult (RPKM 112.3), small intestine adult (RPKM 50.9) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

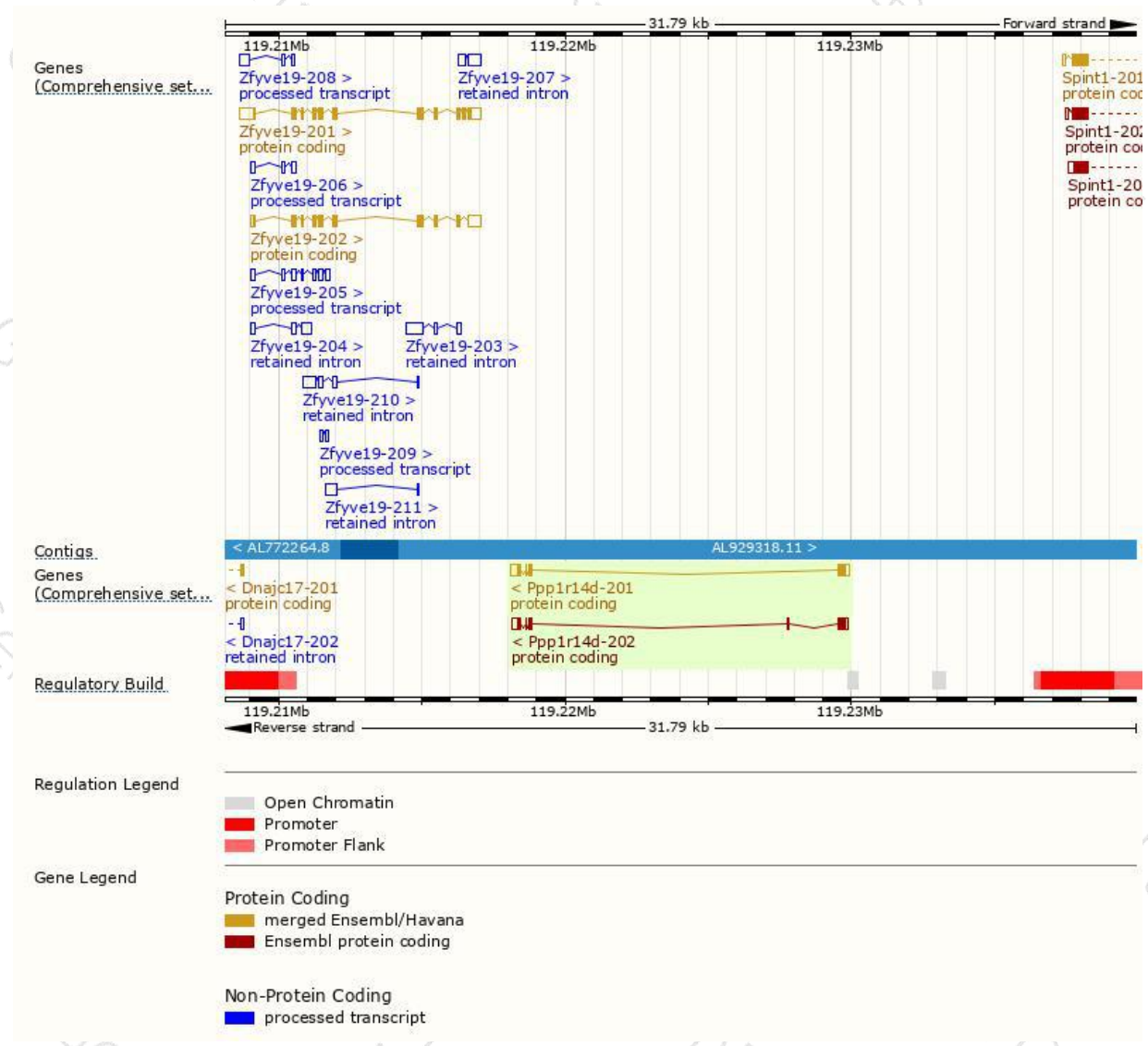
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppp1r14d-202	ENSMUST00000110820.2	790	175aa	Protein coding	CCDS71118	Q7TT52	TSL:1 GENCODE basic
Ppp1r14d-201	ENSMUST00000076084.5	787	146aa	Protein coding	CCDS16596	Q7TT52	TSL:1 GENCODE basic APPRIS P1

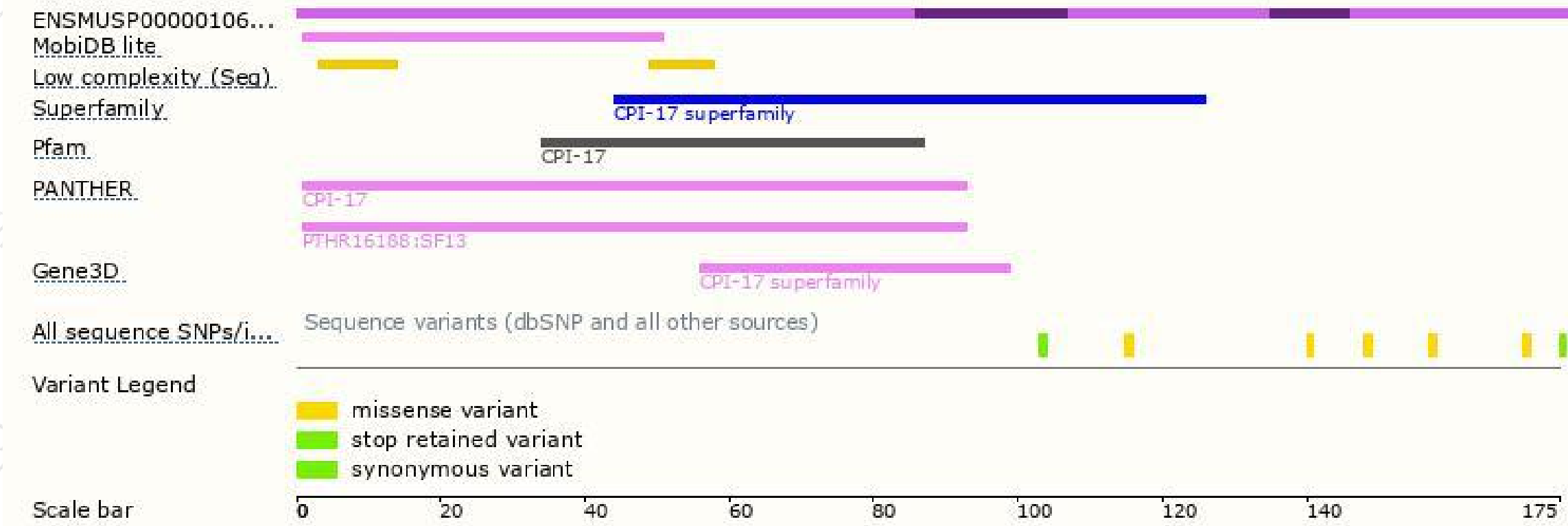
The strategy is based on the design of *Ppp1r14d-202* transcript,the transcription is shown below:



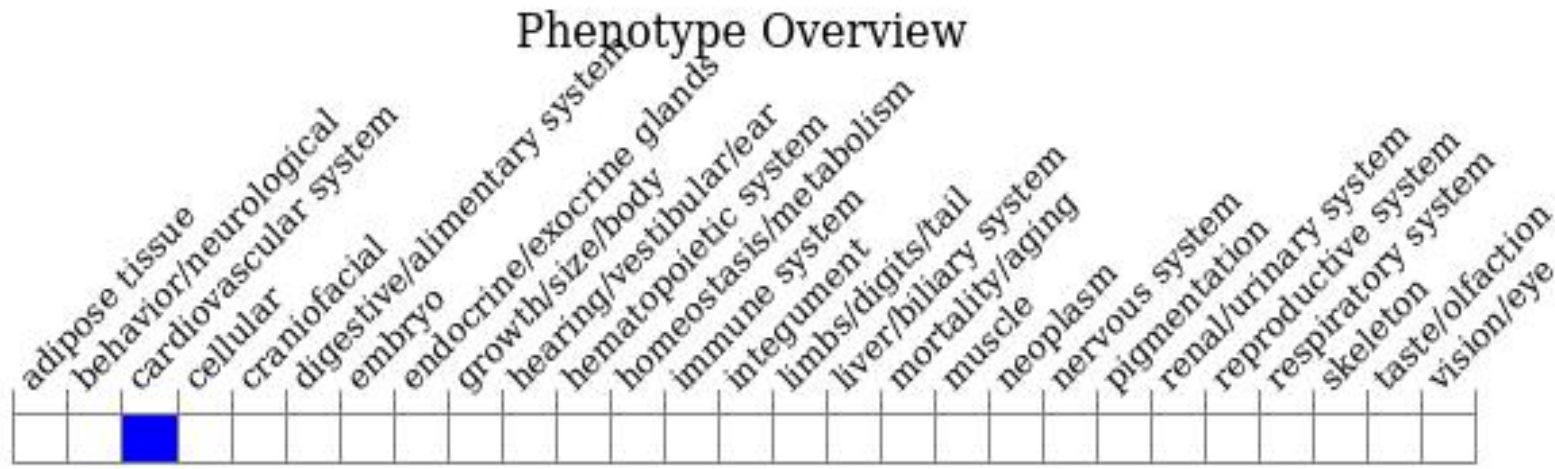
Genomic location distribution



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/>).

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

Tel: 400-9660890

