

Pelp1 Cas9-CKO Strategy

Designer:

Ruirui Zhang

Reviewer:

Huimin Su

Design Date:

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Project Overview

Project Name

Pelp1

Project type

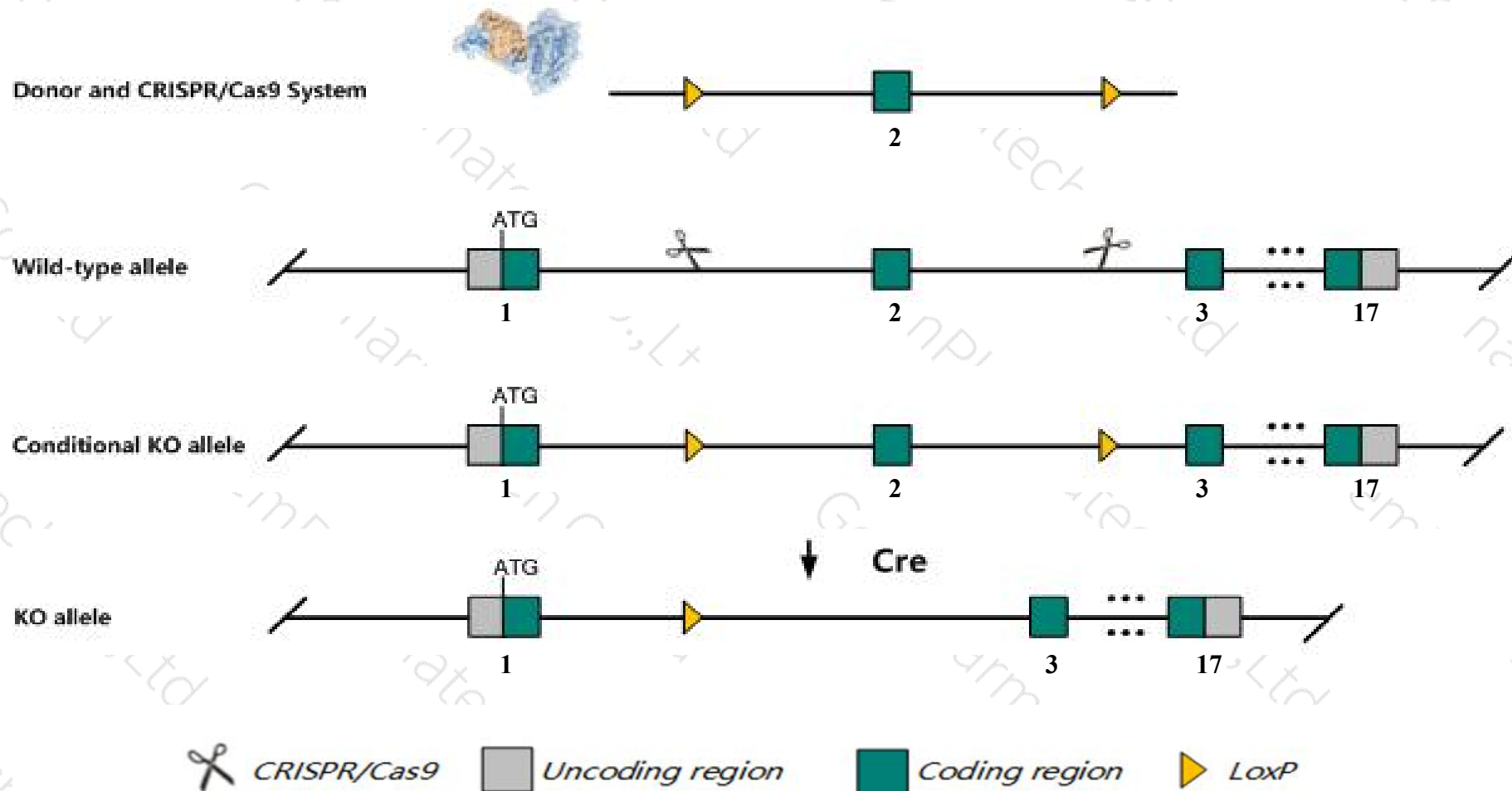
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pelp1* gene. The schematic diagram is as follows:



Technical routes

- The *Pelp1* gene has 2 transcripts. According to the structure of *Pelp1* gene, exon2 of *Pelp1-201* (ENSMUST00000019065.9) transcript is recommended as the knockout region. The region contains 65bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pelp1* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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 flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Pelp1* gene is located on the Chr11. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Pelp1 proline, glutamic acid and leucine rich protein 1 [*Mus musculus* (house mouse)]

Gene ID: 75273, updated on 12-Aug-2019

Summary

Official Symbol Pelp1 provided by [MGI](#)

Official Full Name proline, glutamic acid and leucine rich protein 1 provided by [MGI](#)

Primary source [MGI:MGI:1922523](#)

See related [Ensembl:ENSMUSG00000018921](#)

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 MNAR; 4930563C04Rik

Expression Ubiquitous expression in testis adult (RPKM 16.4), ovary adult (RPKM 15.2) and 28 other tissues [See more](#)

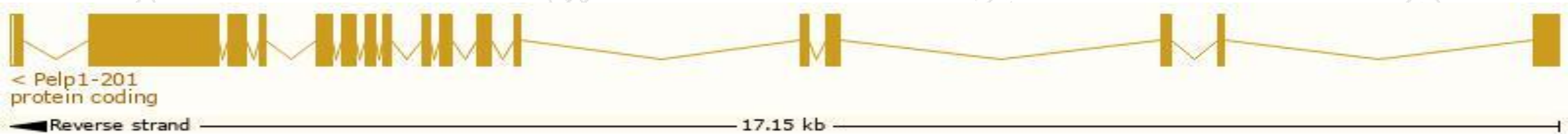
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

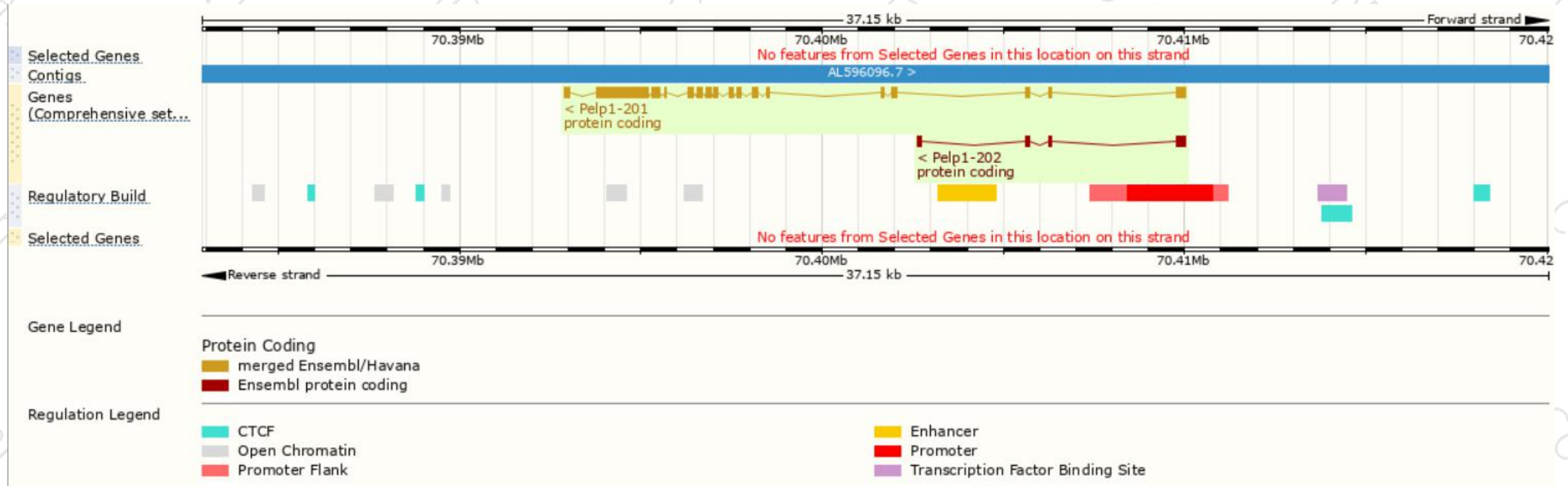
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pelp1-201	ENSMUST00000019065.9	3435	1123aa	Protein coding	CCDS24945	A0A158SIT8 Q9DBD5	TSL:1 GENCODE basic APPRIS P1
Pelp1-202	ENSMUST00000135148.1	562	164aa	Protein coding	-	Q9D4T3	TSL:1 GENCODE basic

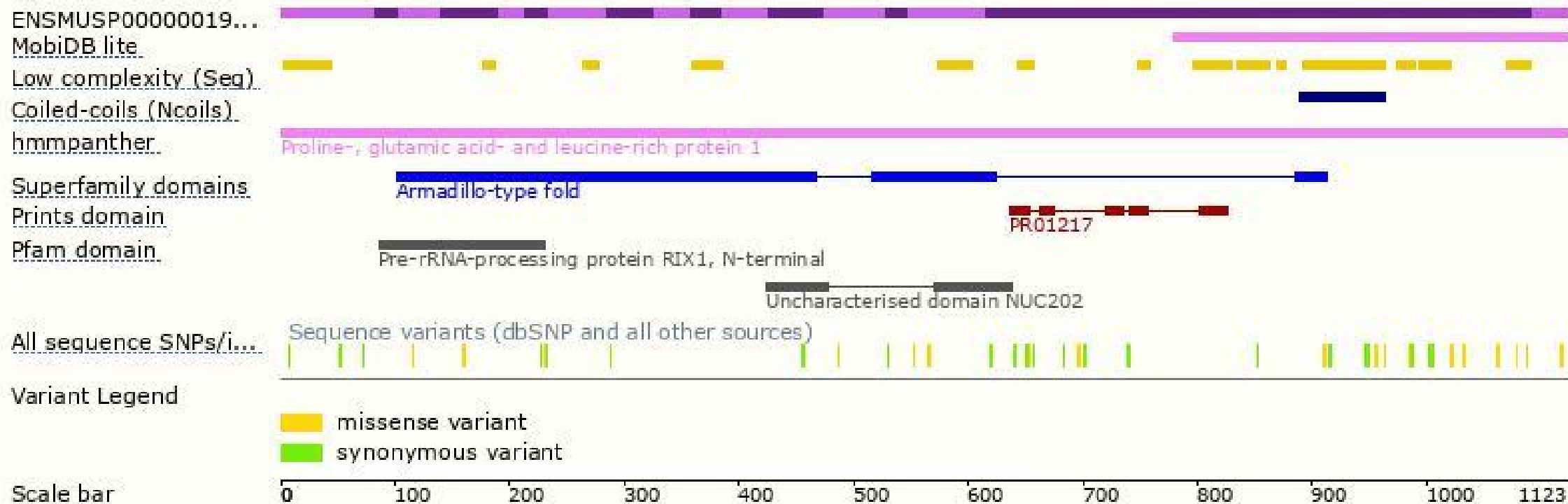
The strategy is based on the design of *Pelp1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

