

Prelid2 Cas9-CKO Strategy

Designer: Xueting Zhang

Reviewer: Daohua Xu

Design Date: 2020-8-13

Project Overview

Project Name

Prelid2

Project type

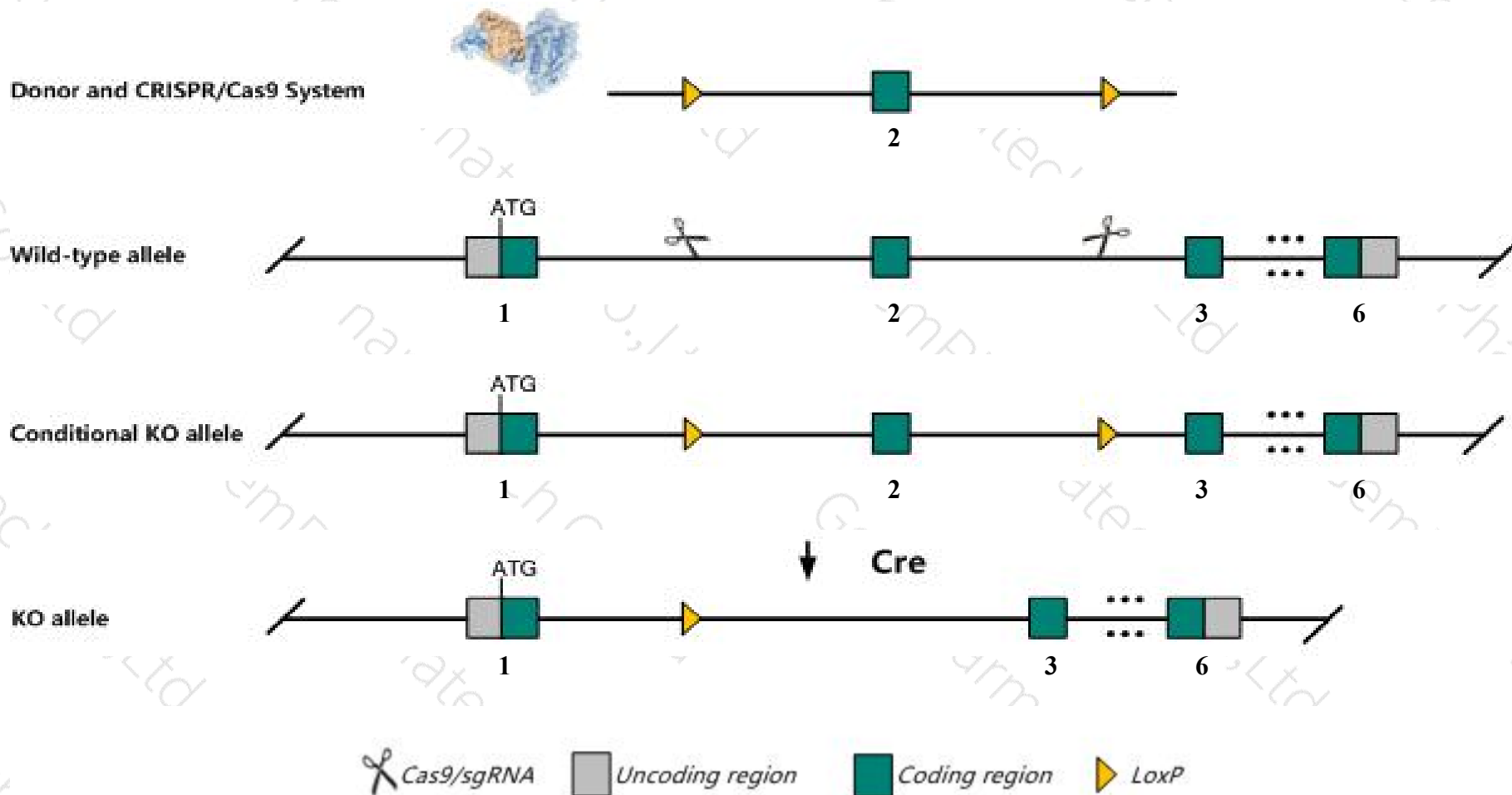
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prelid2* gene. The schematic diagram is as follows:



Technical routes

- The *Prelid2* gene has 3 transcripts. According to the structure of *Prelid2* gene, exon2 of *Prelid2*-202(ENSMUST00000235606.1) transcript is recommended as the knockout region. The region contains 58bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Prelid2* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- The *Prelid2* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Prelid2 PRELI domain containing 2 [Mus musculus (house mouse)]

Gene ID: 77619, updated on 13-Mar-2020

Summary



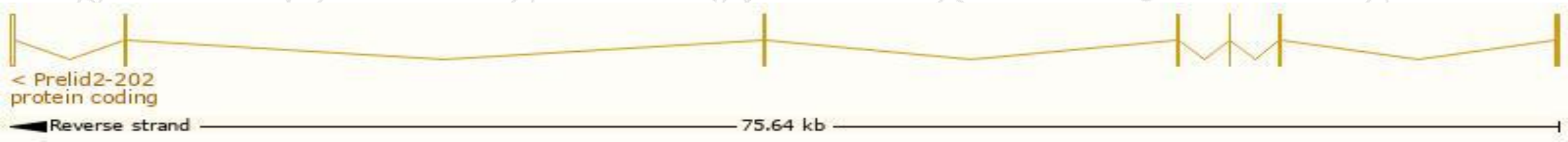
Official Symbol	Prelid2 provided by MGI
Official Full Name	PRELI domain containing 2 provided by MGI
Primary source	MGI:MGI:1924869
See related	Ensembl:ENSMUSG00000056671
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700003A01Rik, C330008K14Rik
Expression	Broad expression in liver E14 (RPKM 3.2), limb E14.5 (RPKM 2.9) and 16 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

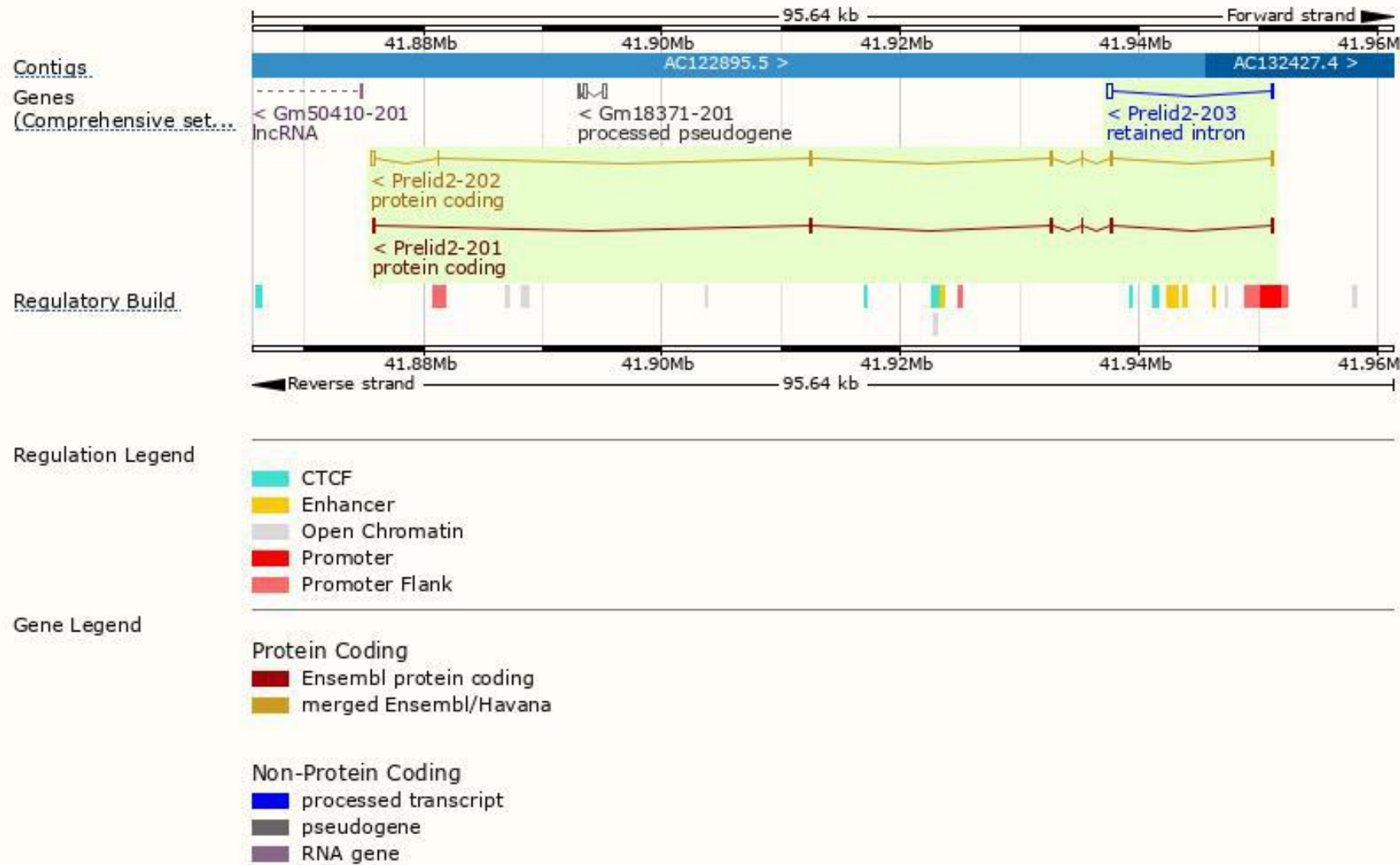
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Prelid2-202	ENSMUST00000235606.1	868	177aa	Protein coding	CCDS37794	Q0VBB0	GENCODE basic APPRIS P1
Prelid2-201	ENSMUST00000070949.5	651	174aa	Protein coding	-	B7ZN63	TSL:1 GENCODE basic
Prelid2-203	ENSMUST00000236542.1	482	No protein	Retained intron	-	-	

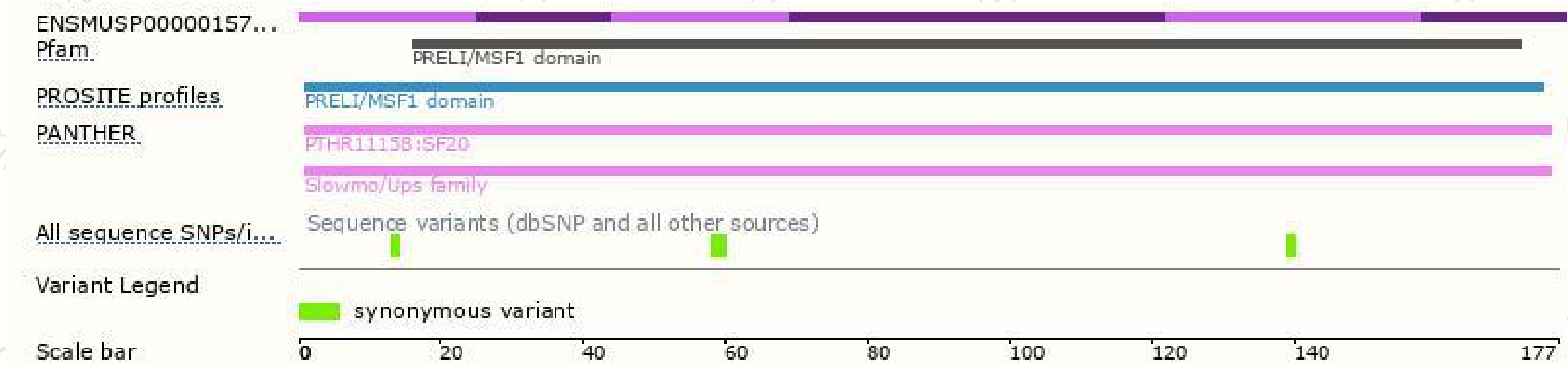
The strategy is based on the design of *Prelid2-202* transcript,the transcription is shown below:



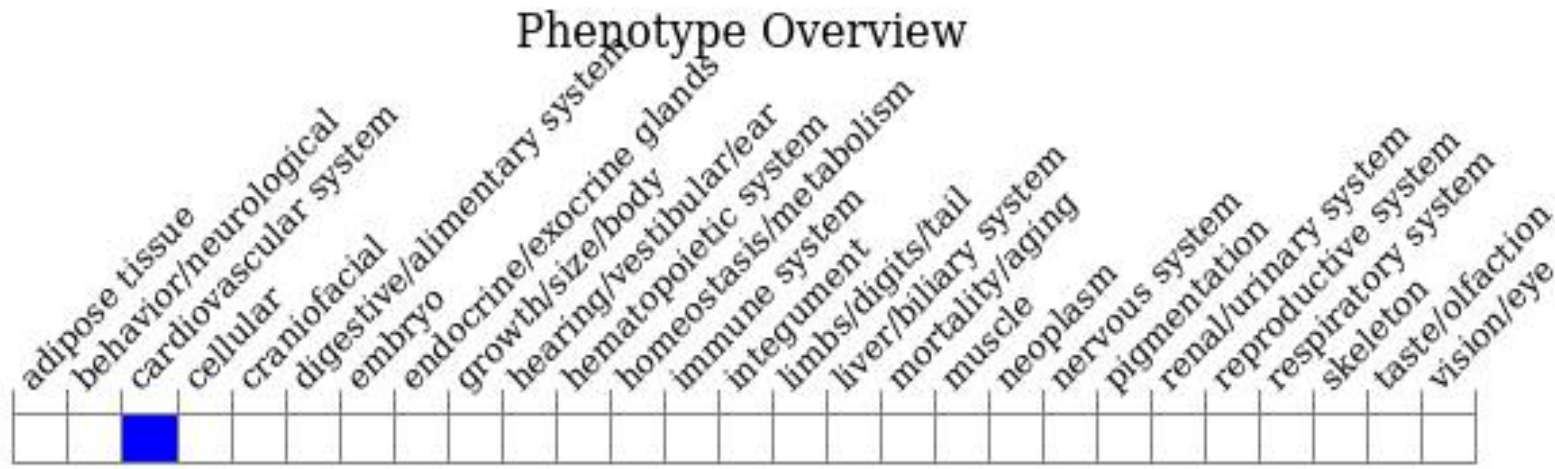
Genomic location distribution



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: 025-5864 1534

