

Larp4b Cas9-KO Strategy

Designer: Xiaojing Li

Reviewer: JiaYu

Design Date: 2020-8-17

Project Overview

Project Name

Larp4b

Project type

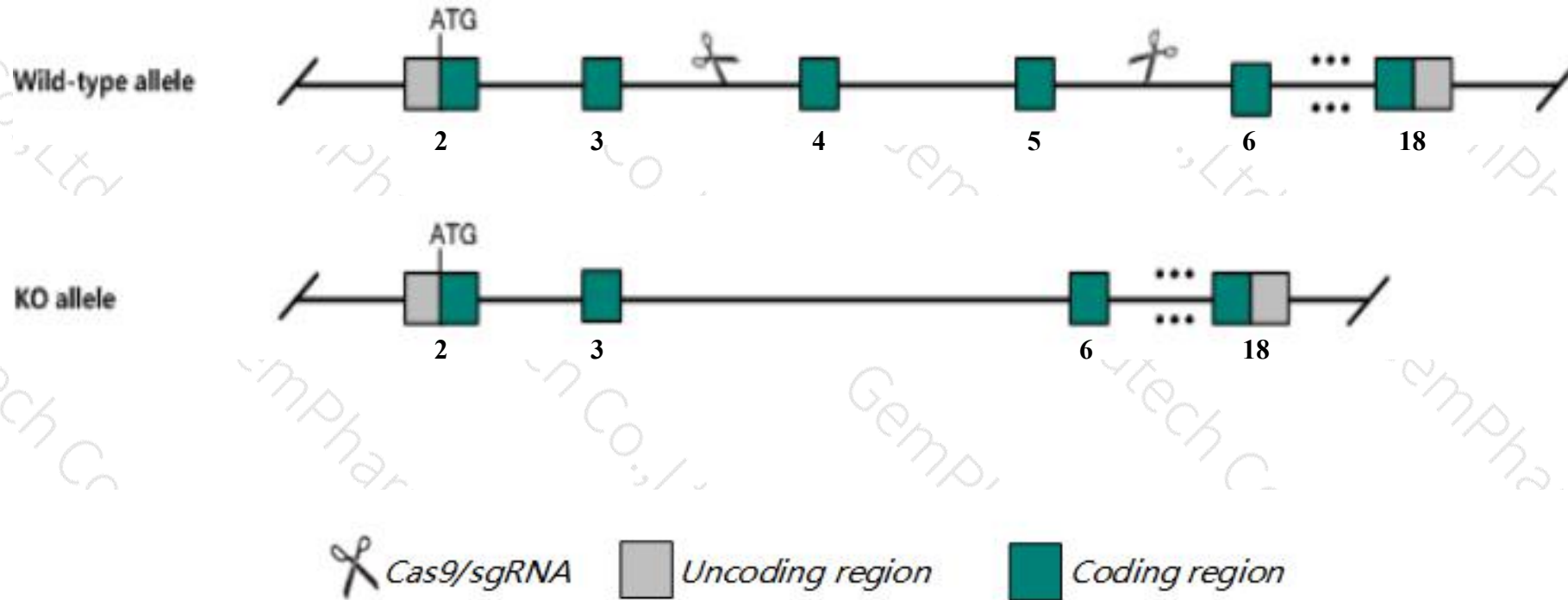
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Larp4b* gene. The schematic diagram is as follows:



- The *Larp4b* gene has 7 transcripts. According to the structure of *Larp4b* gene, exon4-exon5 of *Larp4b*-202(ENSMUST00000188211.7) transcript is recommended as the knockout region. The region contains 295bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Larp4b* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Larp4b* gene is located on the Chr13. 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)

Larp4b La ribonucleoprotein domain family, member 4B [Mus musculus (house mouse)]

Gene ID: 217980, updated on 13-Mar-2020

Summary



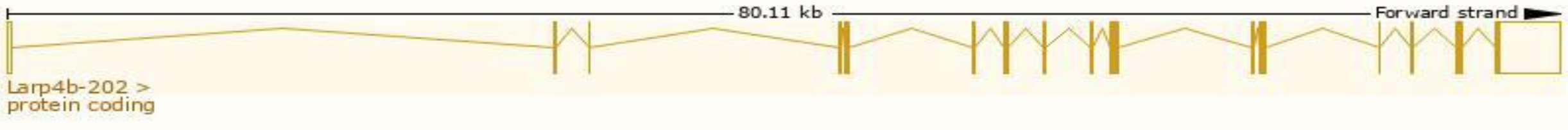
Official Symbol	Larp4b provided by MGI
Official Full Name	La ribonucleoprotein domain family, member 4B provided by MGI
Primary source	MGI:MGI:106330
See related	Ensembl:ENSMUSG00000033499
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A630096F19, AI256361, D13Wsu64e, Larp5
Expression	Ubiquitous expression in placenta adult (RPKM 5.9), liver E14 (RPKM 5.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

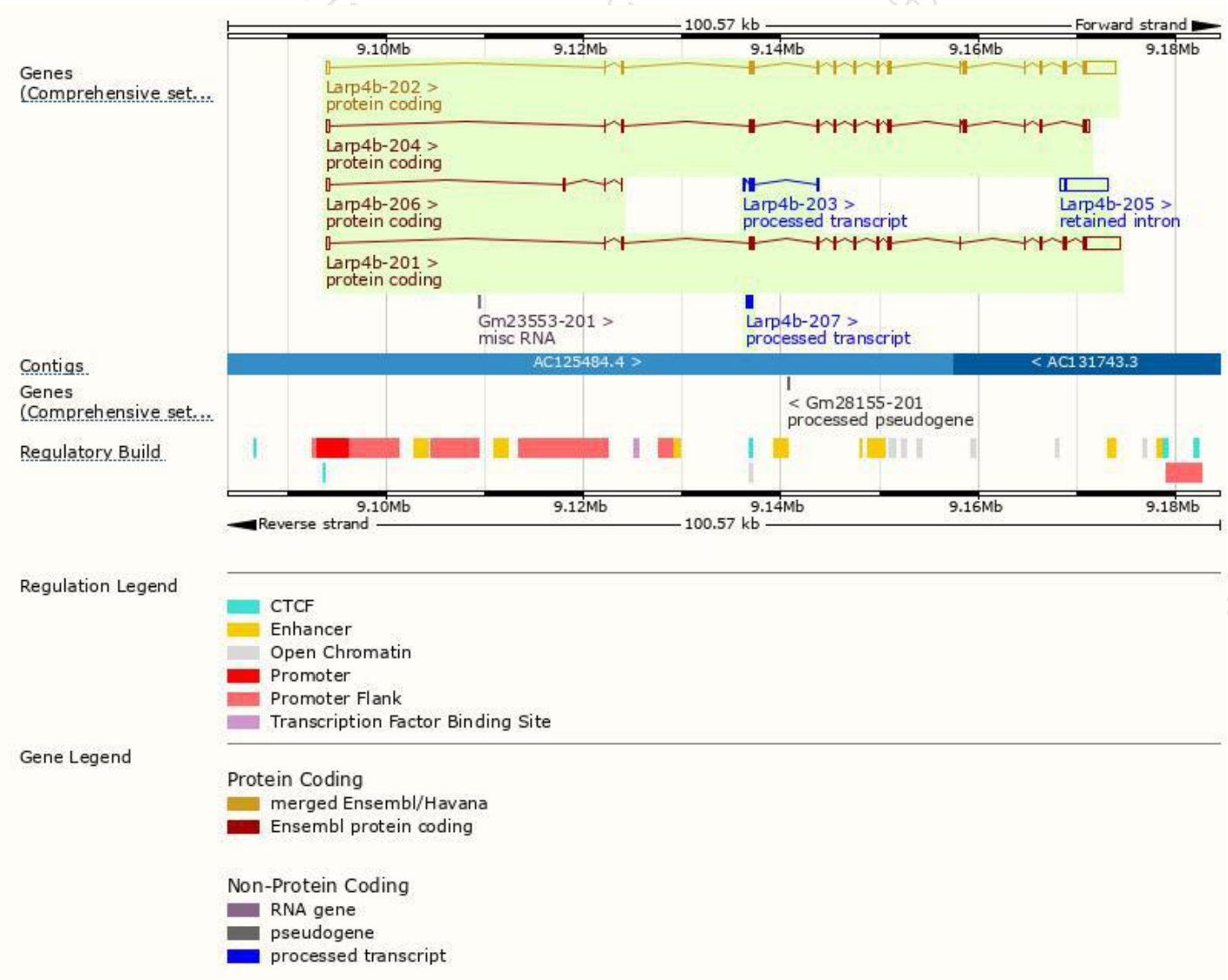
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Larp4b-201	ENSMUST00000091829.3	5720	657aa	Protein coding	CCDS79162	Q6A0A2	TSL:1 GENCODE basic
Larp4b-202	ENSMUST00000188211.7	5610	741aa	Protein coding	CCDS36588	Q6A0A2	TSL:1 GENCODE basic APPRIS P1
Larp4b-204	ENSMUST00000188939.6	2658	663aa	Protein coding	-	Q6A0A2	TSL:1 GENCODE basic
Larp4b-206	ENSMUST00000190041.6	557	36aa	Protein coding	-	A0A087WPU9	CDS 3' incomplete TSL:3
Larp4b-207	ENSMUST00000190331.1	405	No protein	Processed transcript	-	-	TSL:5
Larp4b-203	ENSMUST00000188523.6	385	No protein	Processed transcript	-	-	TSL:5
Larp4b-205	ENSMUST00000189330.1	4666	No protein	Retained intron	-	-	TSL:1

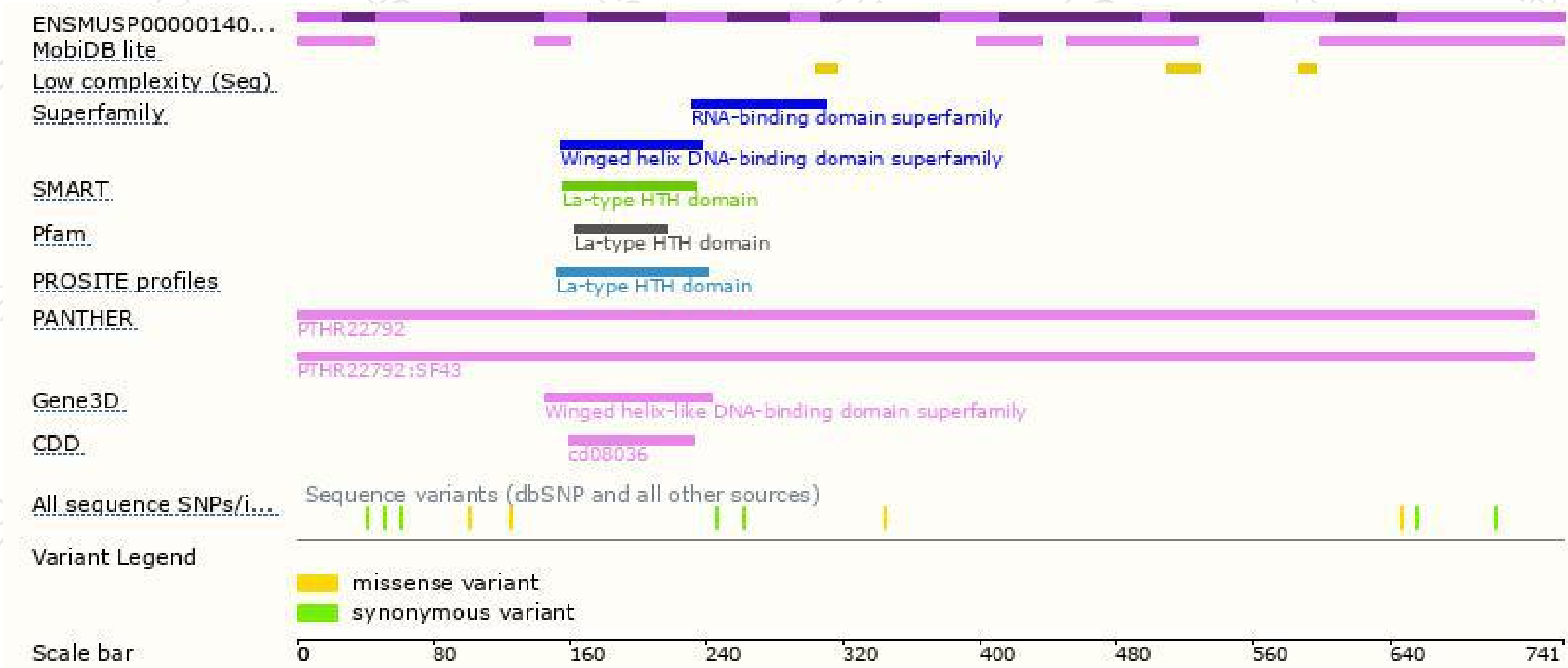
The strategy is based on the design of *Larp4b-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

