

***Lcn8* Cas9-KO Strategy**

Designer: Jinling Wang

Reviewer: Yumeng Wang

Design Date:2020-03-12

Project Overview

Project Name

Lcn8

Project type

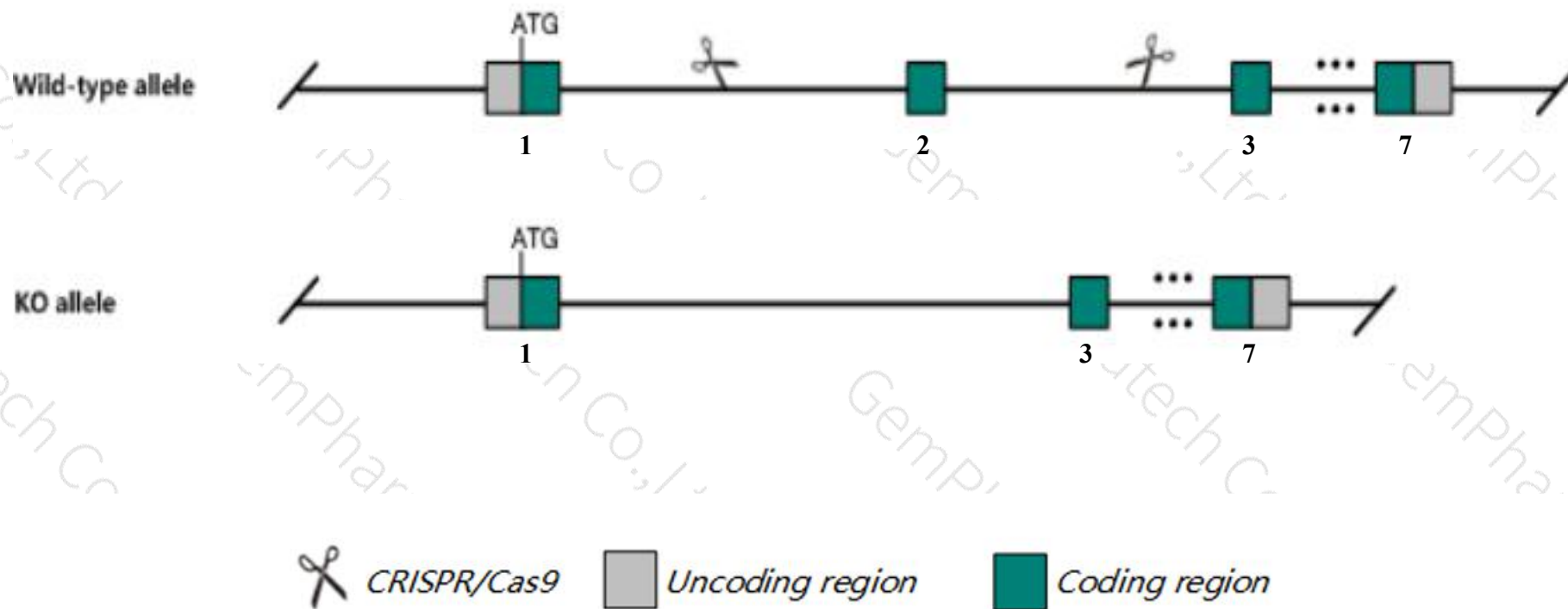
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lcn8* gene. The schematic diagram is as follows:



- The *Lcn8* gene has 1 transcript. According to the structure of *Lcn8* gene, exon2 of *Lcn8-201*(ENSMUST00000038482.6) transcript is recommended as the knockout region. The region contains 131bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lcn8* 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 Intron2 is only 453bp, loxp insertion may affect mRNA splicing.
- The KO region contains functional region of the *Lcn5* gene. Knockout the region may affect the function of *Lcn5* gene.
- The *Lcn8* 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)

Lcn8 lipocalin 8 [Mus musculus (house mouse)]

Gene ID: 78076, updated on 13-Mar-2020

Summary



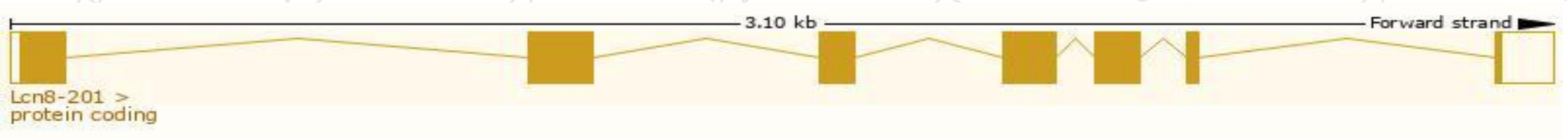
Official Symbol	Lcn8 provided by MGI
Official Full Name	lipocalin 8 provided by MGI
Primary source	MGI:MGI:2135945
See related	Ensembl:ENSMUSG00000036449
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9230106L18Rik, EP17, Lcn5, mEP17
Expression	Restricted expression toward genital fat pad adult (RPKM 2151.2) See more
Orthologs	human all

Transcript information (Ensembl)

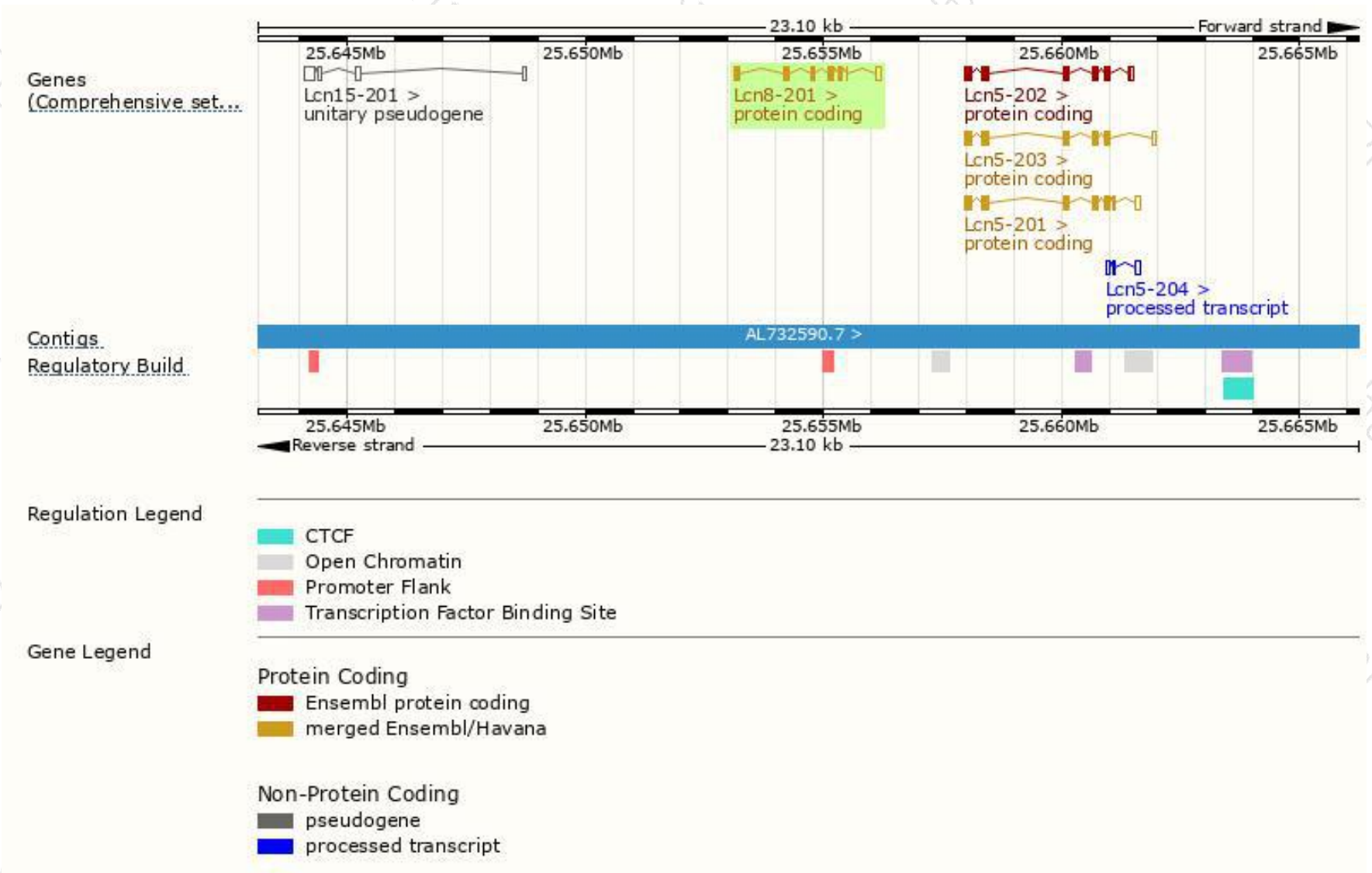
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lcn8-201	ENSMUST00000038482.6	651	175aa	Protein coding	CCDS15786	Q924P3	TSL:1 GENCODE basic APPRIS P1

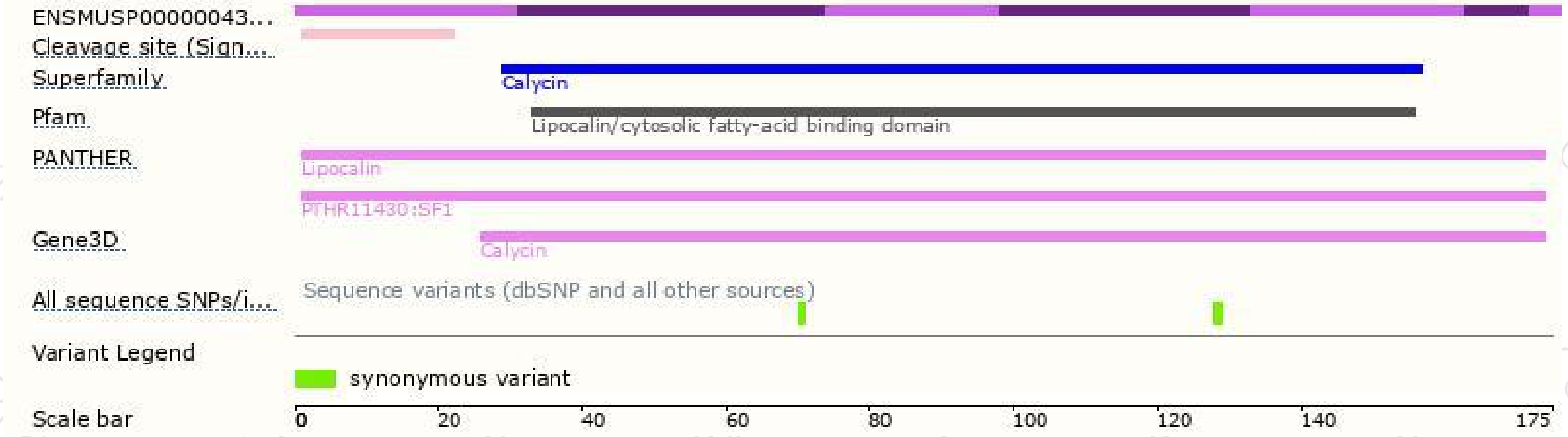
The strategy is based on the design of *Lcn8-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

