

Lcn12 Cas9-CKO Strategy

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Project Overview

Project Name

Lcn12

Project type

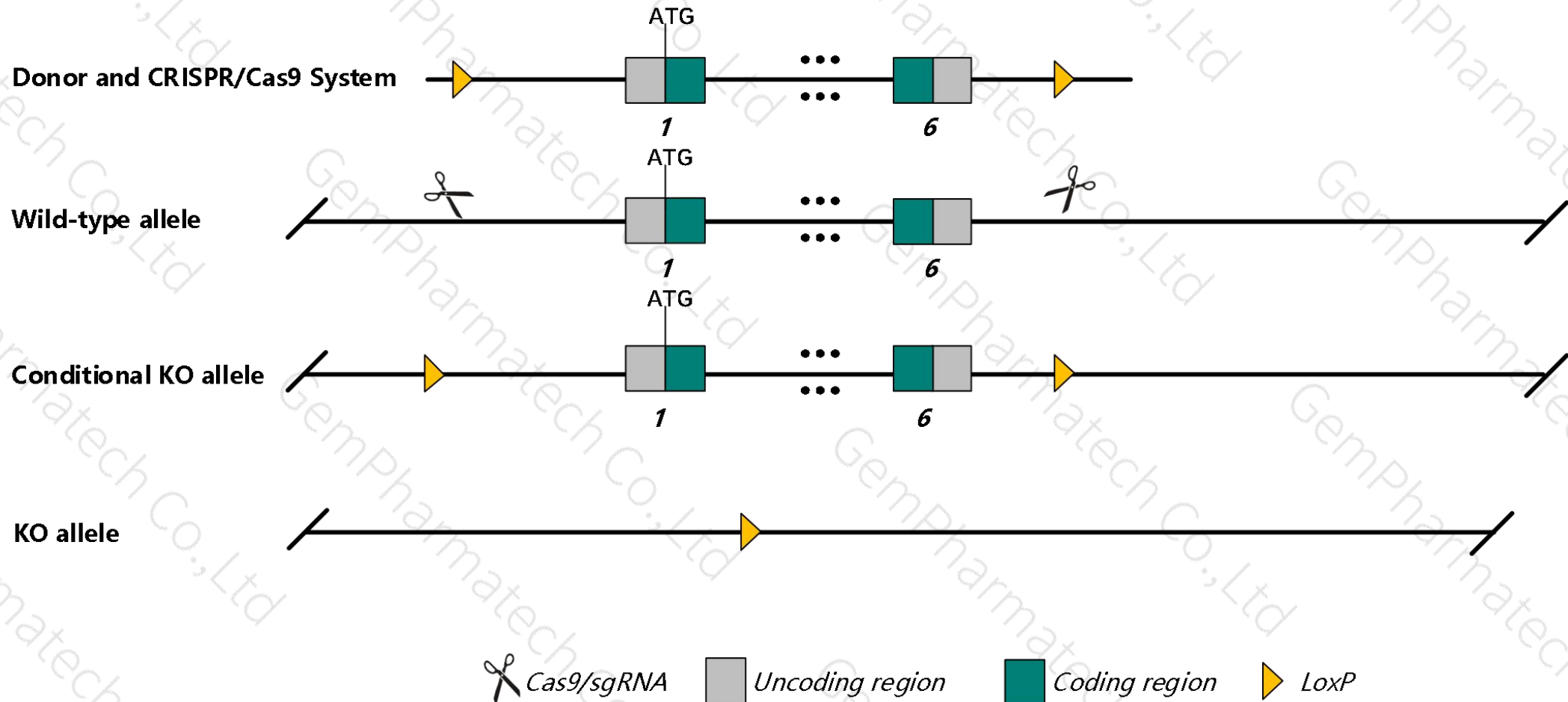
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lcn12* gene. The schematic diagram is as follows:



Technical routes

- The *Lcn12* gene has 2 transcripts. According to the structure of *Lcn12* gene, exon1-exon6 of *Lcn12-201* (ENSMUST00000028312.12) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lcn12* 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 *Lcn12* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Lcn12 lipocalin 12 [Mus musculus (house mouse)]

Gene ID: 77701, updated on 13-Mar-2020

Summary



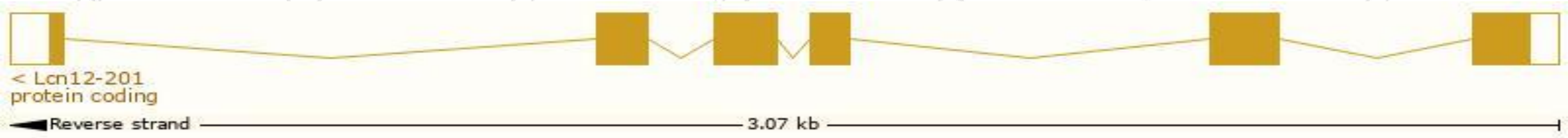
Official Symbol	Lcn12 provided by MGI
Official Full Name	lipocalin 12 provided by MGI
Primary source	MGI:MGI:1924951
See related	Ensembl:ENSMUSG00000026943
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9230102M18Rik
Expression	Restricted expression toward genital fat pad adult (RPKM 71.5) See more
Orthologs	human all

Transcript information (Ensembl)

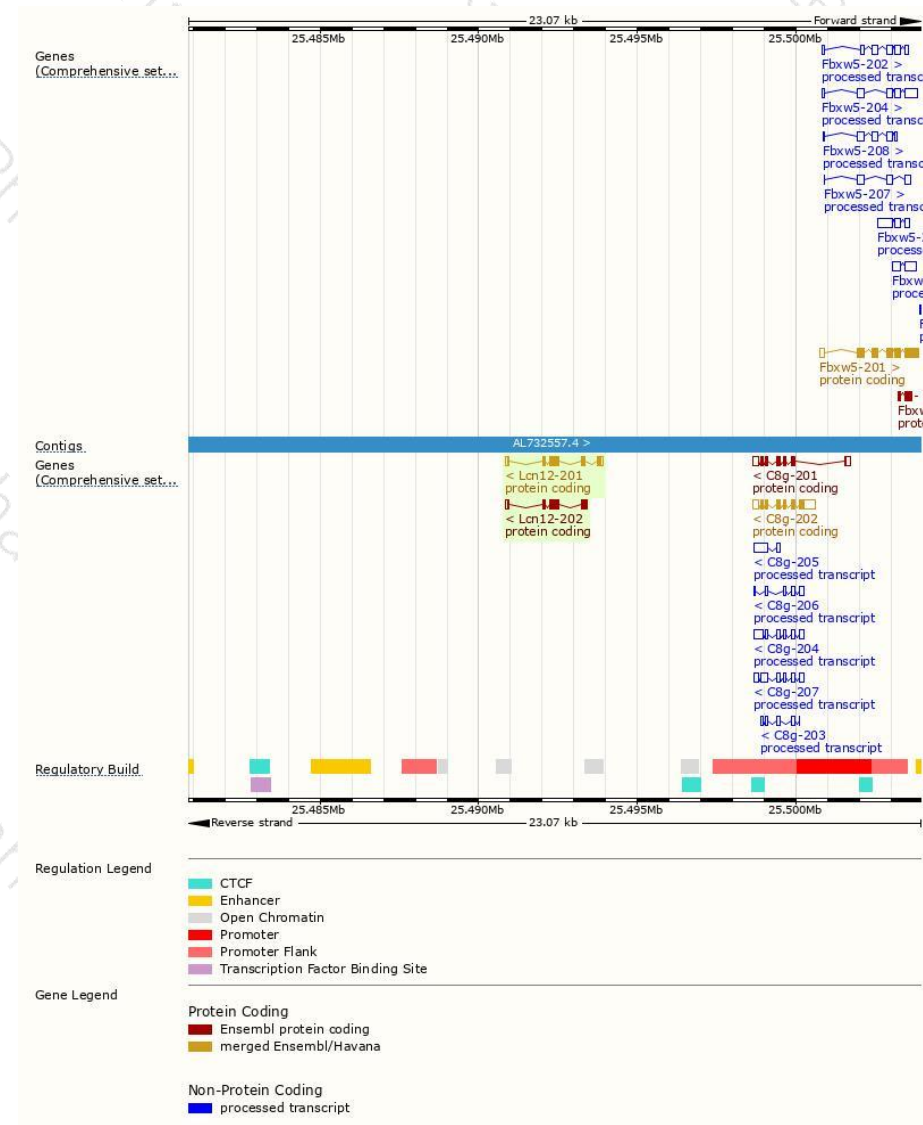
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lcn12-201	ENSMUST00000028312.12	716	193aa	Protein coding	CCDS15776	Q2TA58 Q6JVL5	TSL:1 GENCODE basic APPRIS P2
Lcn12-202	ENSMUST00000114245.1	619	157aa	Protein coding	-	Q9D265	TSL:1 GENCODE basic APPRIS ALT2

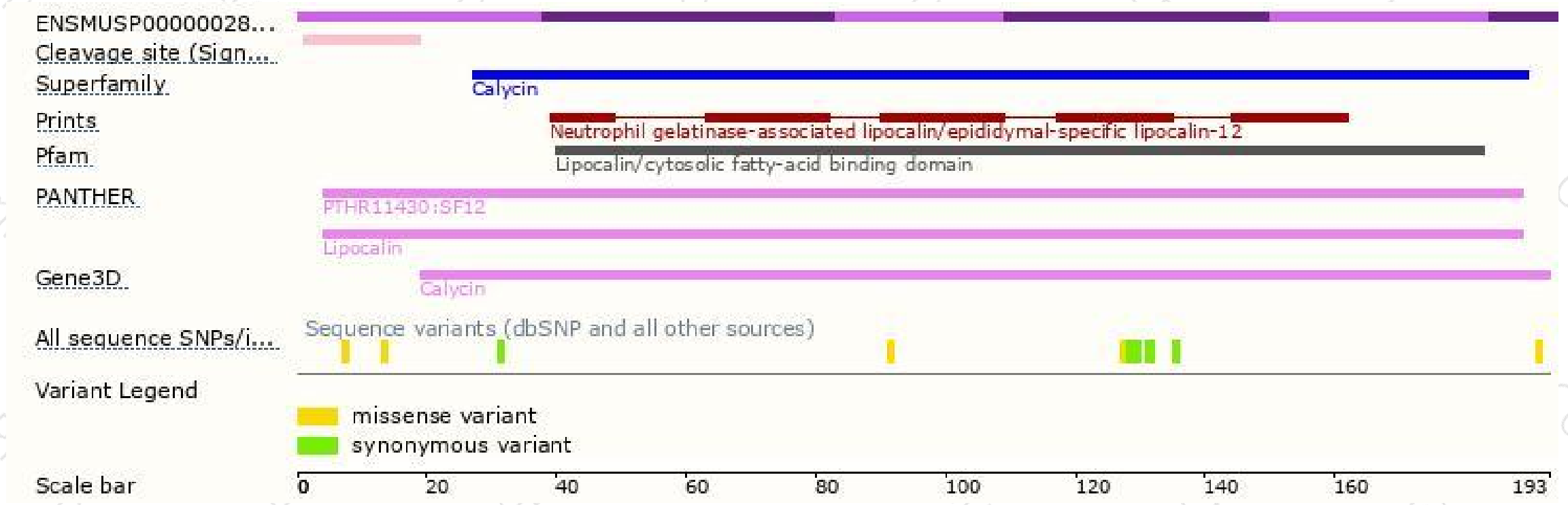
The strategy is based on the design of *Lcn12-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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