

Lypd4 Cas9-CKO Strategy

Designer:

Yanhua Shen

Reviewer:

Xueting Zhang

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Project Overview

Project Name

Lypd4

Project type

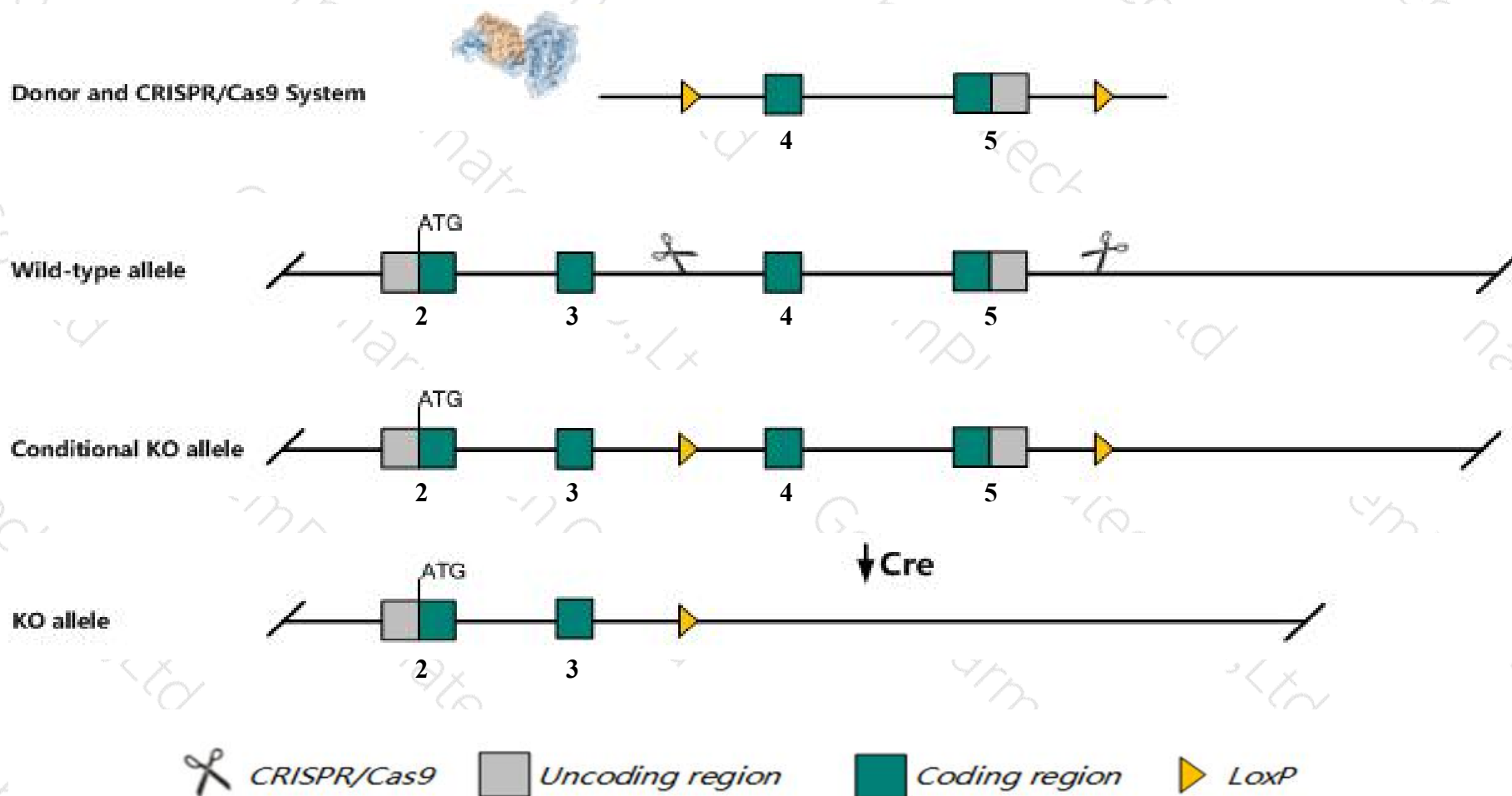
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lypd4* gene. The schematic diagram is as follows:



Technical routes

- The *Lypd4* gene has 2 transcripts. According to the structure of *Lypd4* gene, exon4-exon5 of *Lypd4-201* (ENSMUST00000079306.10) transcript is recommended as the knockout region. The region contains most of coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lypd4* 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.

- The flox region is about 1.7kb from the C-terminus of *Gm9844*, which may affect the regulation of these gene.
- The *Lypd4* gene is located on the Chr7. 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)

Lypd4 Ly6/Plaur domain containing 4 [*Mus musculus* (house mouse)]

Gene ID: 232973, updated on 12-Aug-2019

Summary

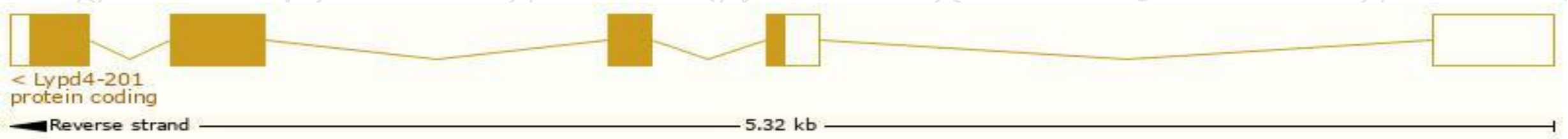
Official Symbol	Lypd4 provided by MGI
Official Full Name	Ly6/Plaur domain containing 4 provided by MGI
Primary source	MGI:MGI:2687054
See related	Ensembl:ENSMUSG00000062732
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4933400F01Rik
Expression	Restricted expression toward testis adult (RPKM 398.2) See more
Orthologs	human all

Transcript information (Ensembl)

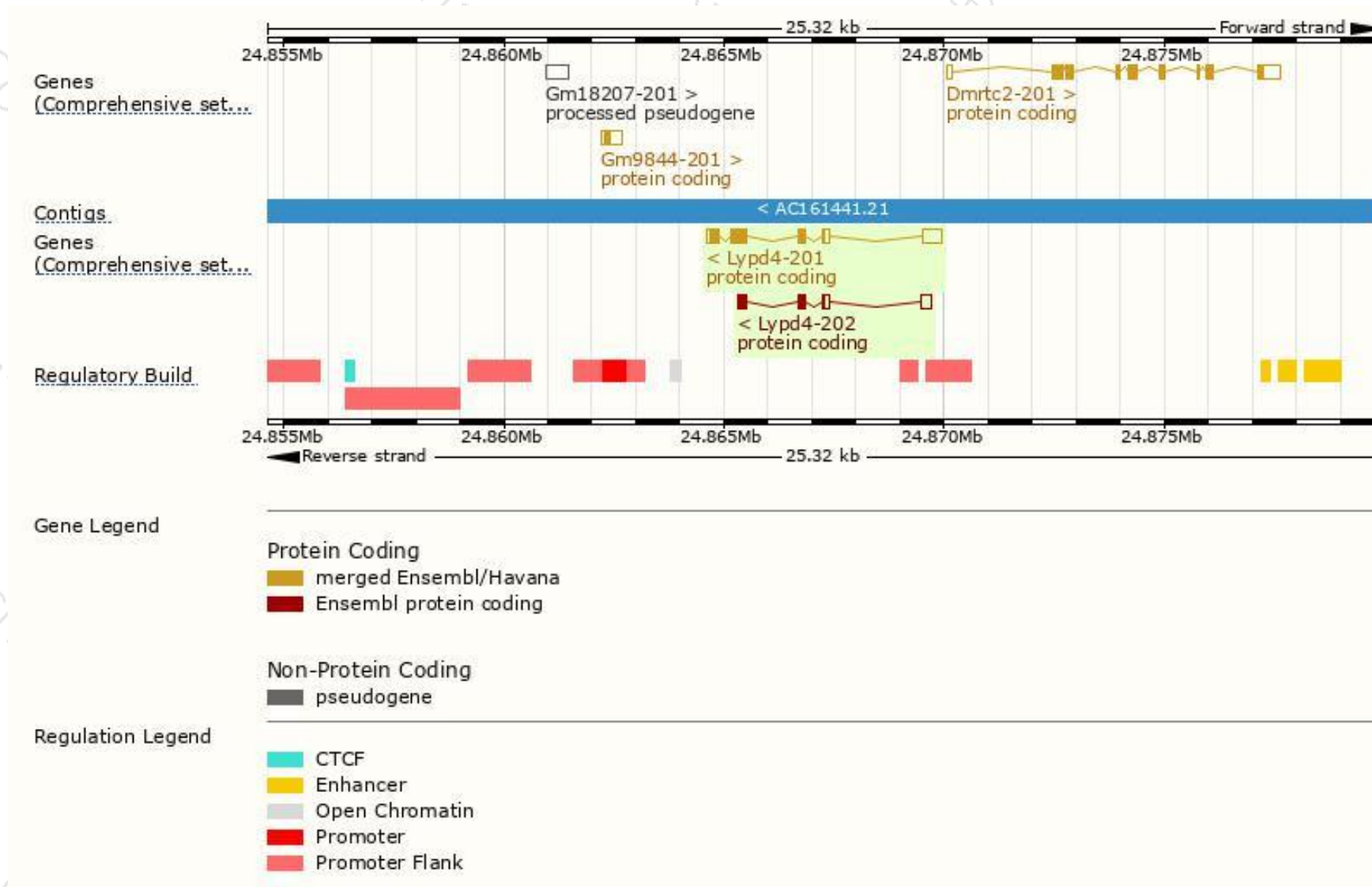
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lypd4-201	ENSMUST00000079306.10	1345	246aa	Protein coding	CCDS20964	Q8BVP6	TSL:1 GENCODE basic APPRIS P1
Lypd4-202	ENSMUST00000122995.1	751	129aa	Protein coding	-	D3Z162	CDS 3' incomplete TSL:5

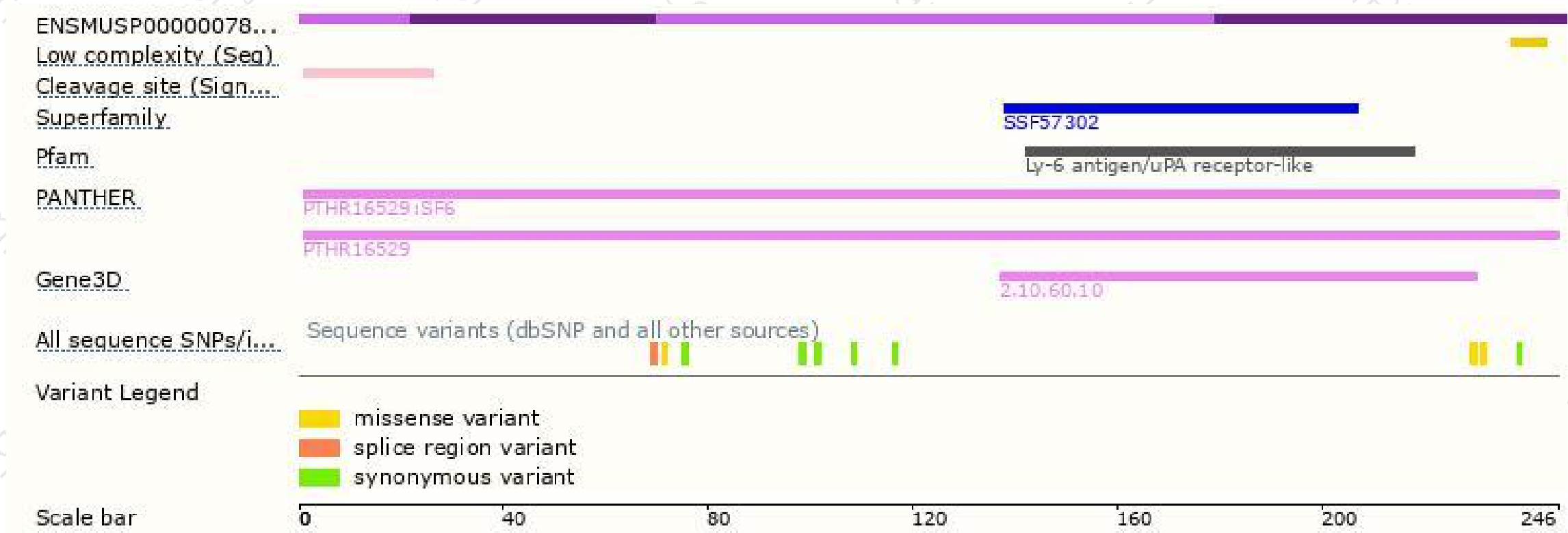
The strategy is based on the design of *Lypd4-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

