

Las1l Cas9-CKO Strategy

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Project Overview

Project Name

Las1l

Project type

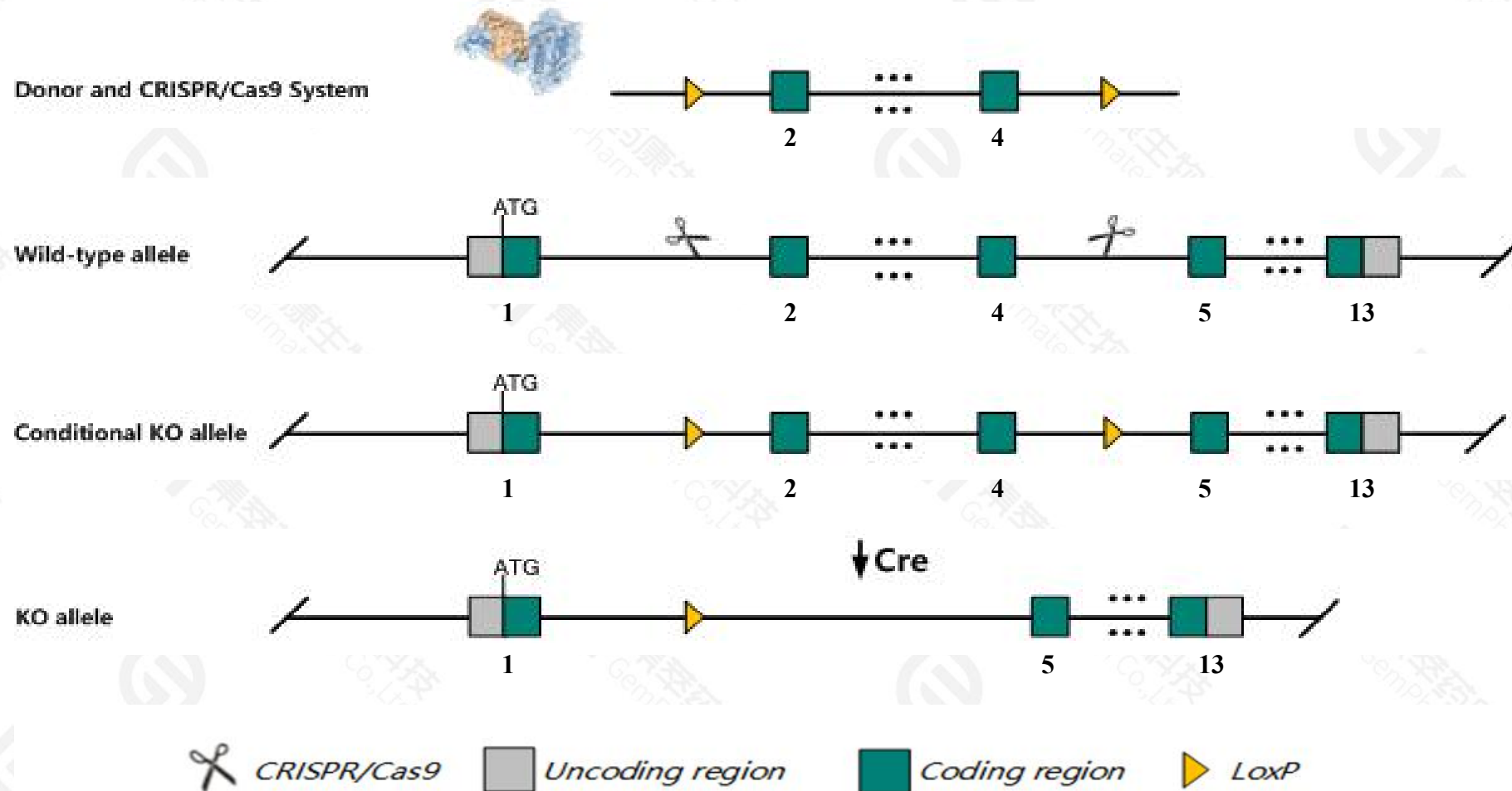
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Las1l* gene. The schematic diagram is as follows:



- The *Las1l* gene has 7 transcripts. According to the structure of *Las1l* gene, exon2-exon4 of *Las1l-201*(ENSMUST00000079987.12) transcript is recommended as the knockout region. The region contains 278bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Las1l* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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 *Las1l* gene is located on the ChrX. 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)

Las1l LAS1-like (S. cerevisiae) [Mus musculus (house mouse)]

Gene ID: 76130, updated on 13-Mar-2020

Summary



Official Symbol Las1l provided by [MGI](#)

Official Full Name LAS1-like (S. cerevisiae) provided by [MGI](#)

Primary source [MGI:MGI:1923380](#)

See related [Ensembl:ENSMUSG00000057421](#)

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 1810030A06Rik, 5830482G23Rik

Expression Ubiquitous expression in placenta adult (RPKM 15.5), CNS E14 (RPKM 8.8) and 28 other tissues [See more](#)

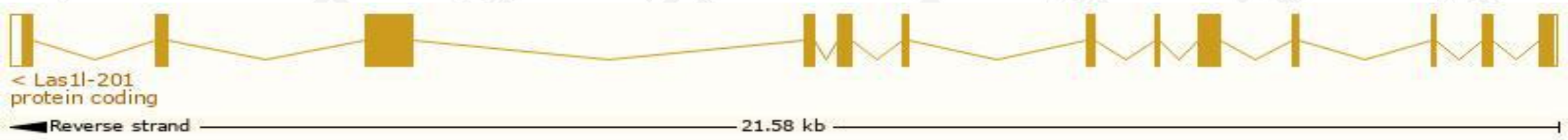
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

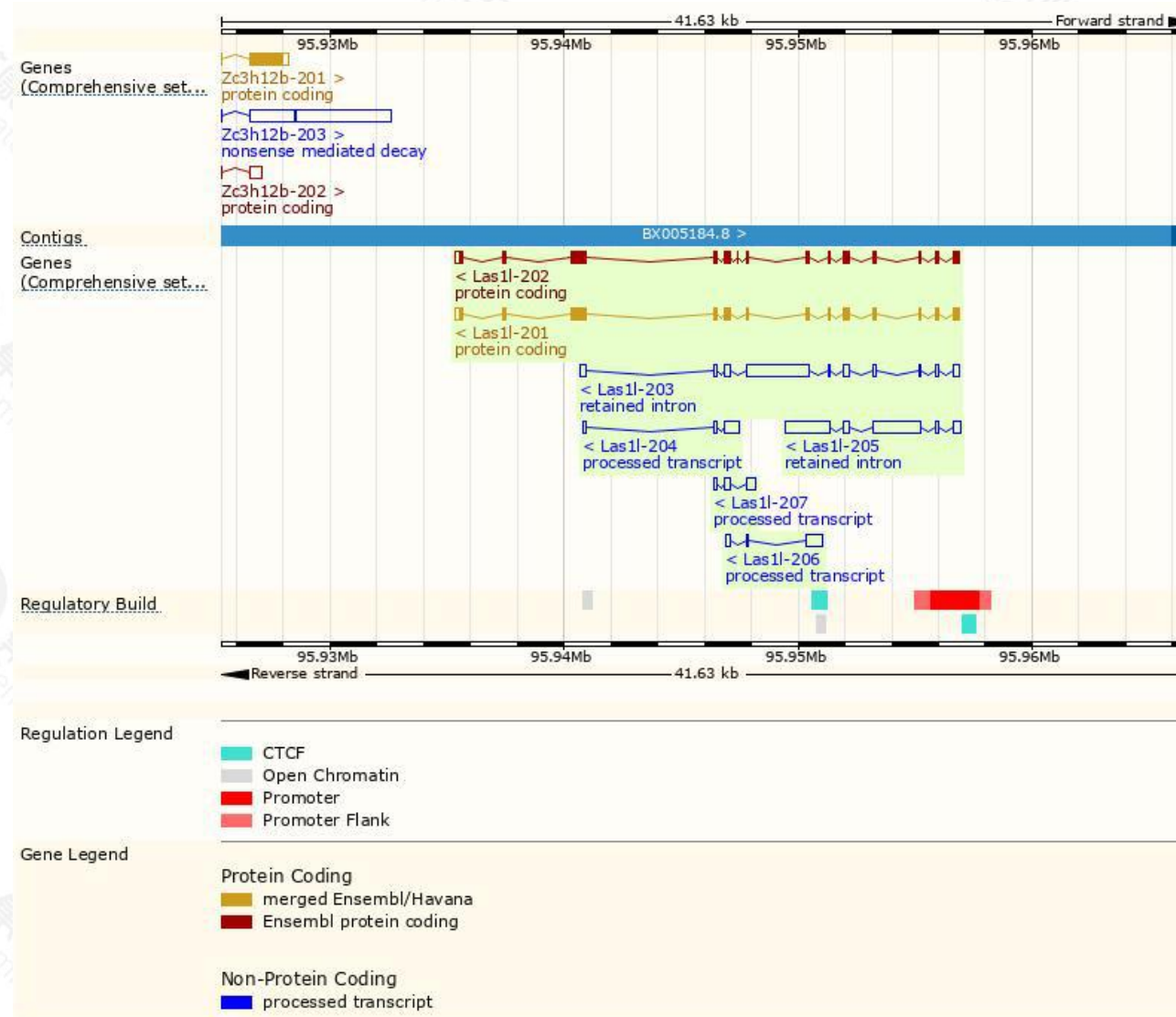
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Las1l-201	ENSMUST00000079987.12	2530	759aa	Protein coding	CCDS30287	A2BE28	TSL:1 GENCODE basic APPRIS P2
Las1l-202	ENSMUST00000113864.2	2581	776aa	Protein coding	-	A2BE28	TSL:5 GENCODE basic APPRIS ALT2
Las1l-206	ENSMUST00000147994.1	945	No protein	Processed transcript	-	-	TSL:5
Las1l-204	ENSMUST00000137659.1	862	No protein	Processed transcript	-	-	TSL:2
Las1l-207	ENSMUST00000152181.1	778	No protein	Processed transcript	-	-	TSL:2
Las1l-205	ENSMUST00000139717.1	4625	No protein	Retained intron	-	-	TSL:2
Las1l-203	ENSMUST00000126605.7	4126	No protein	Retained intron	-	-	TSL:1

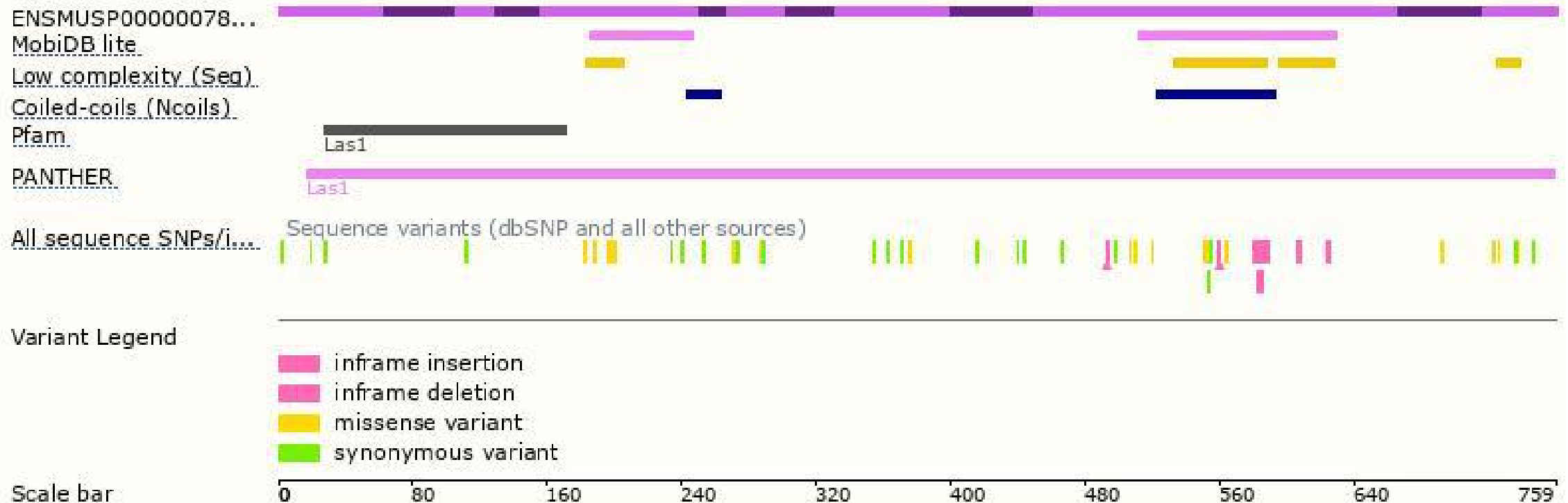
The strategy is based on the design of *Las1l-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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