

Rpl27 Cas9-CKO Strategy

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Design Date:

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Project Overview

Project Name

Rpl27

Project type

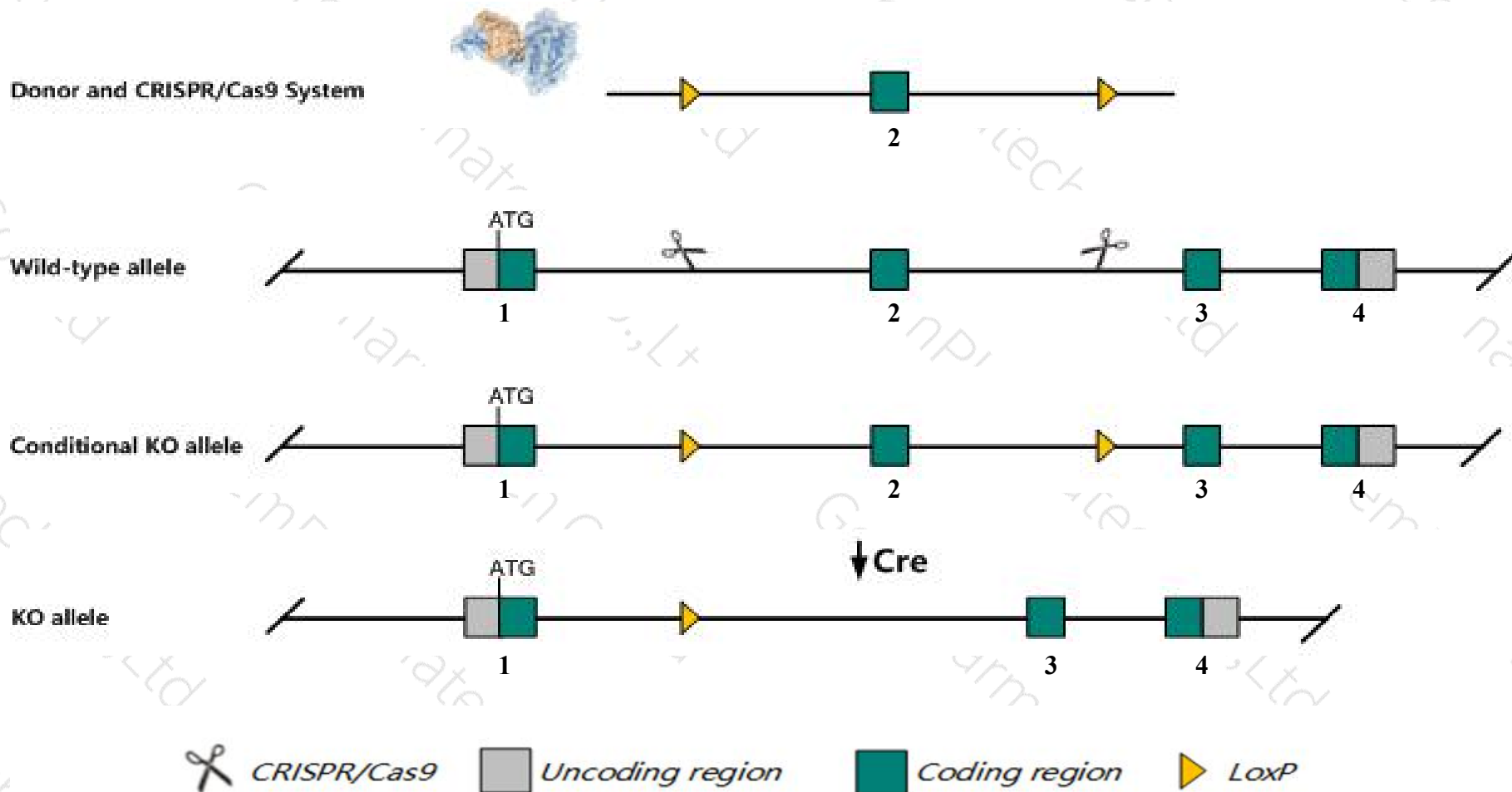
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rpl27* gene. The schematic diagram is as follows:



Technical routes

- The *Rpl27* gene has 5 transcripts. According to the structure of *Rpl27* gene, exon2 of *Rpl27-202* (ENSMUST00000107249.7) transcript is recommended as the knockout region. The region contains 170bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rpl27* 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 *Rpl27* gene is located on the Chr11. 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)

Rpl27 ribosomal protein L27 [Mus musculus (house mouse)]

Gene ID: 19942, updated on 31-Jan-2019

Summary



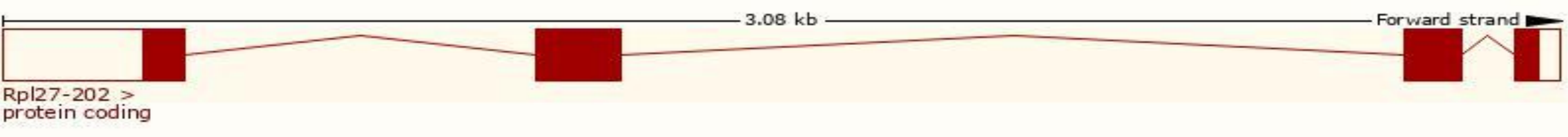
Official Symbol	Rpl27 provided by MGI
Official Full Name	ribosomal protein L27 provided by MGI
Primary source	MGI:MGI:98036
See related	Ensembl:ENSMUSG00000063316
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Ubiquitous expression in liver E14 (RPKM 264.7), liver E14.5 (RPKM 220.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

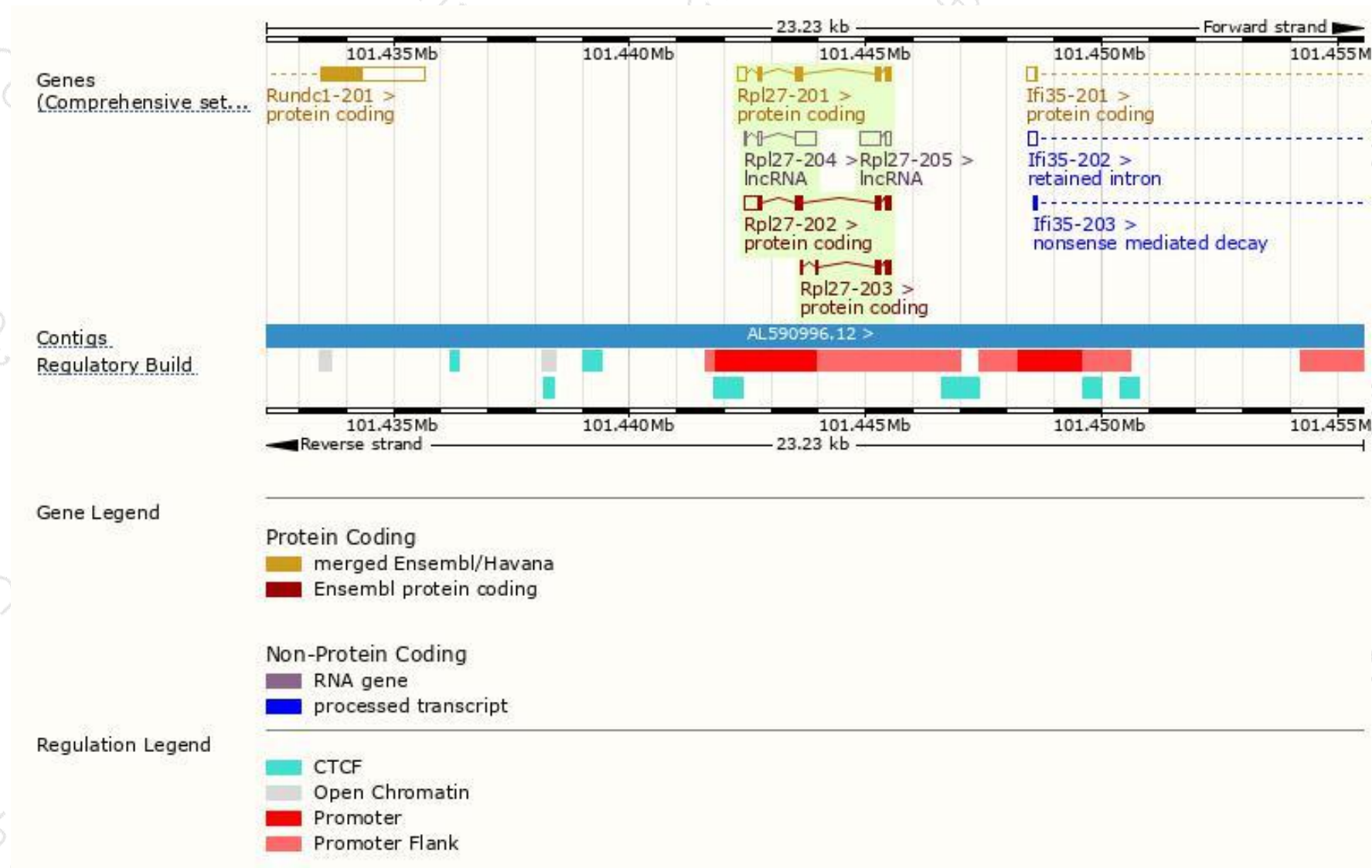
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rpl27-202	ENSMUST00000107249.7	732	136aa	Protein coding	CCDS25470	P61358 Q5BLJ9	TSL:2 GENCODE basic APPRIS P1
Rpl27-201	ENSMUST00000077856.12	614	136aa	Protein coding	CCDS25470	P61358 Q5BLJ9	TSL:1 GENCODE basic APPRIS P1
Rpl27-203	ENSMUST00000127514.1	306	87aa	Protein coding	-	A2A4Q0	CDS 5' incomplete TSL:5
Rpl27-205	ENSMUST00000152162.1	548	No protein	lncRNA	-	-	TSL:2
Rpl27-204	ENSMUST00000139939.1	536	No protein	lncRNA	-	-	TSL:2

The strategy is based on the design of *Rpl27-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain

ENSMUSP00000102...

Low complexity (Seq)

Superfamily

SMART

ProDom

Pfam

PROSITE patterns

PANTHER

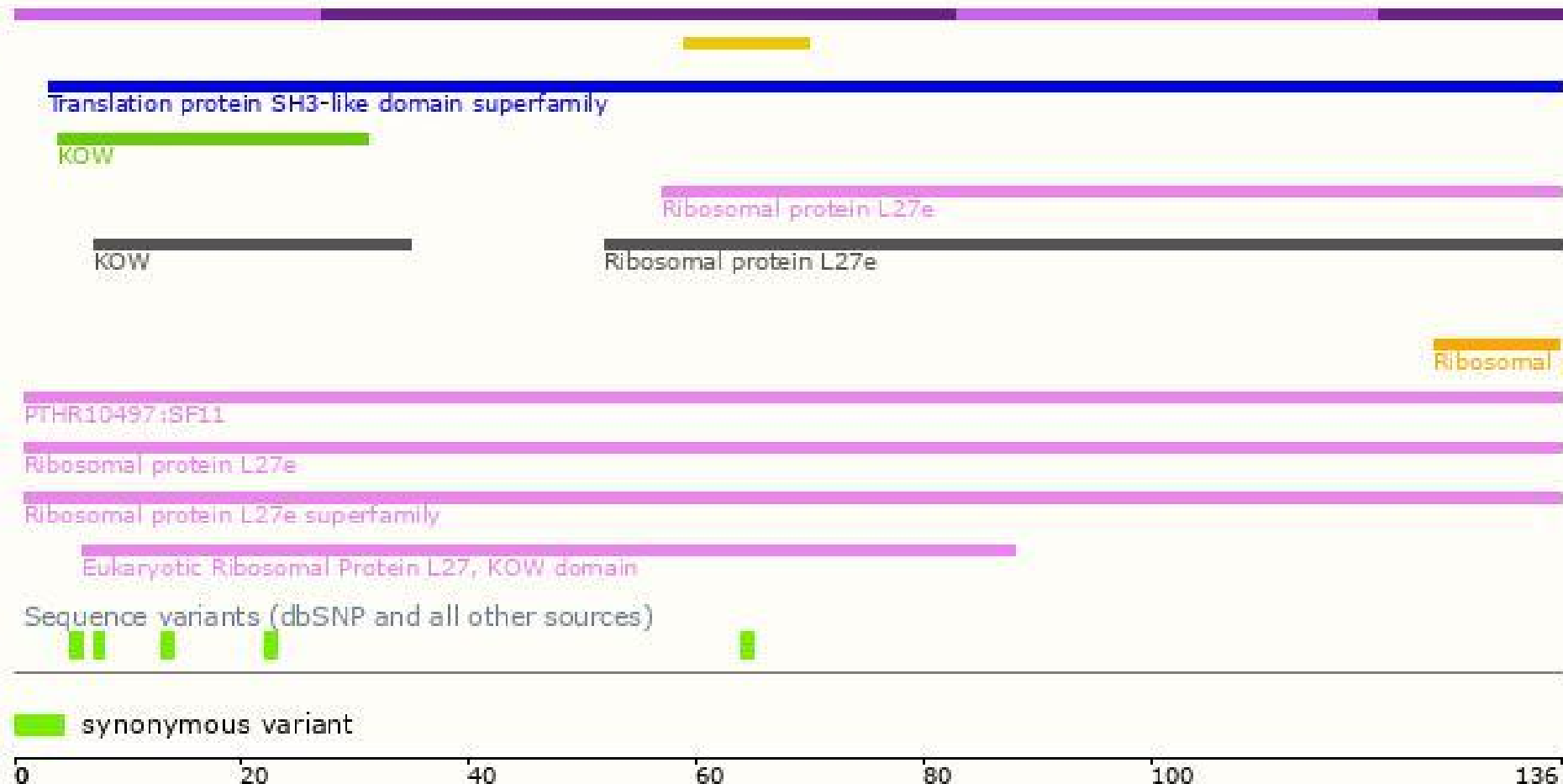
Gene3D

CDD

All sequence SNPs/i....

Variant Legend

Scale bar



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

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