

Rpl3 Cas9-KO Strategy

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Project Overview

Project Name

Rpl3

Project type

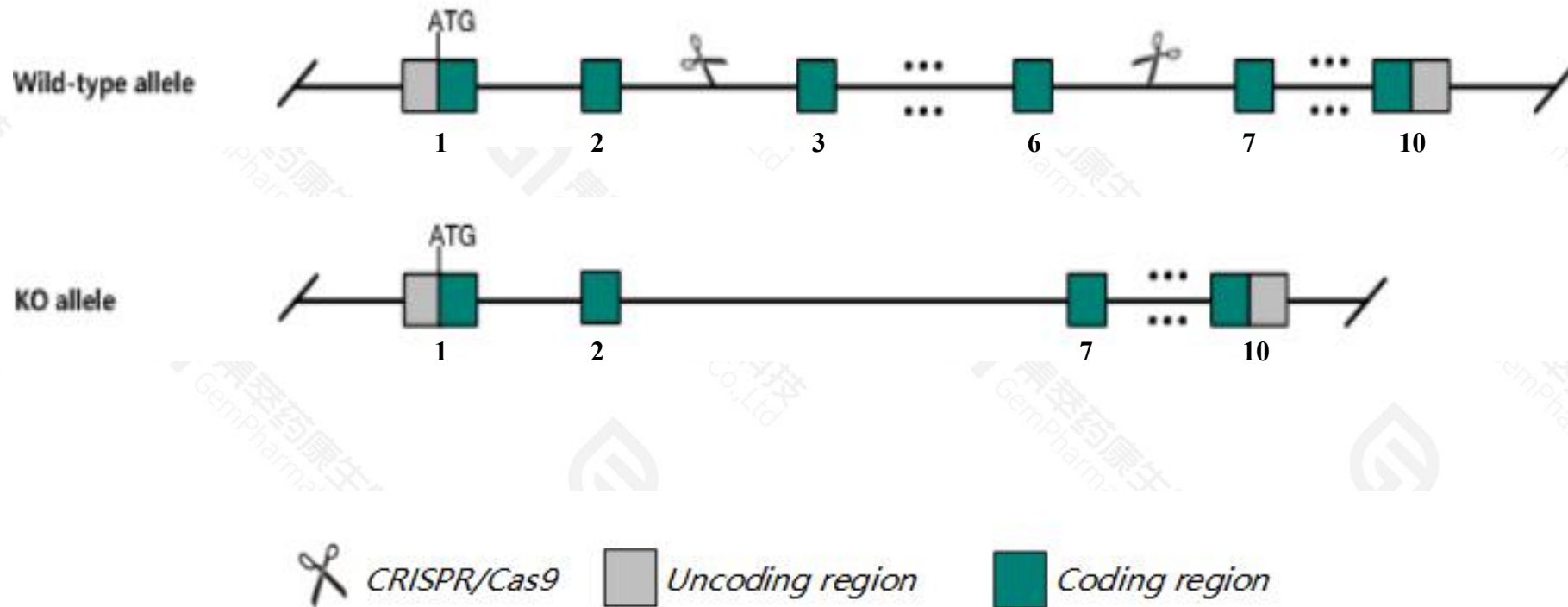
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rpl3* gene. The schematic diagram is as follows:



- The *Rpl3* gene has 7 transcripts. According to the structure of *Rpl3* gene, exon3-exon6 of *Rpl3-201*(ENSMUST00000081650.15) transcript is recommended as the knockout region. The region contains 653bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rpl3* 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 KO region overlaps with *SNORD83A* gene. Knockout the region may affect the function of *SNORD83A* gene.
- The KO region is close to *SNORD83b* gene. Knockout the region may affect the function of *SNORD83b* gene.
- The *Rpl3* gene is located on the Chr15. 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)

Rpl3 ribosomal protein L3 [*Mus musculus* (house mouse)]

Gene ID: 27367, updated on 23-Jun-2021

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Summary



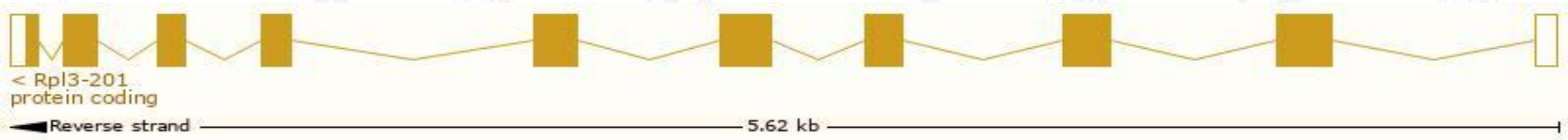
Official Symbol	Rpl3 provided by MGI
Official Full Name	ribosomal protein L3 provided by MGI
Primary source	MGI:MGI:1351605
See related	Ensembl:ENSMUSG00000060036
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	F2; J1
Expression	Ubiquitous expression in CNS E11.5 (RPKM 486.3), liver E14 (RPKM 380.2) and 28 other tissues See more
Orthologs	human all
NEW	Try the new Gene table Try the new Transcript table

Transcript information (Ensembl)

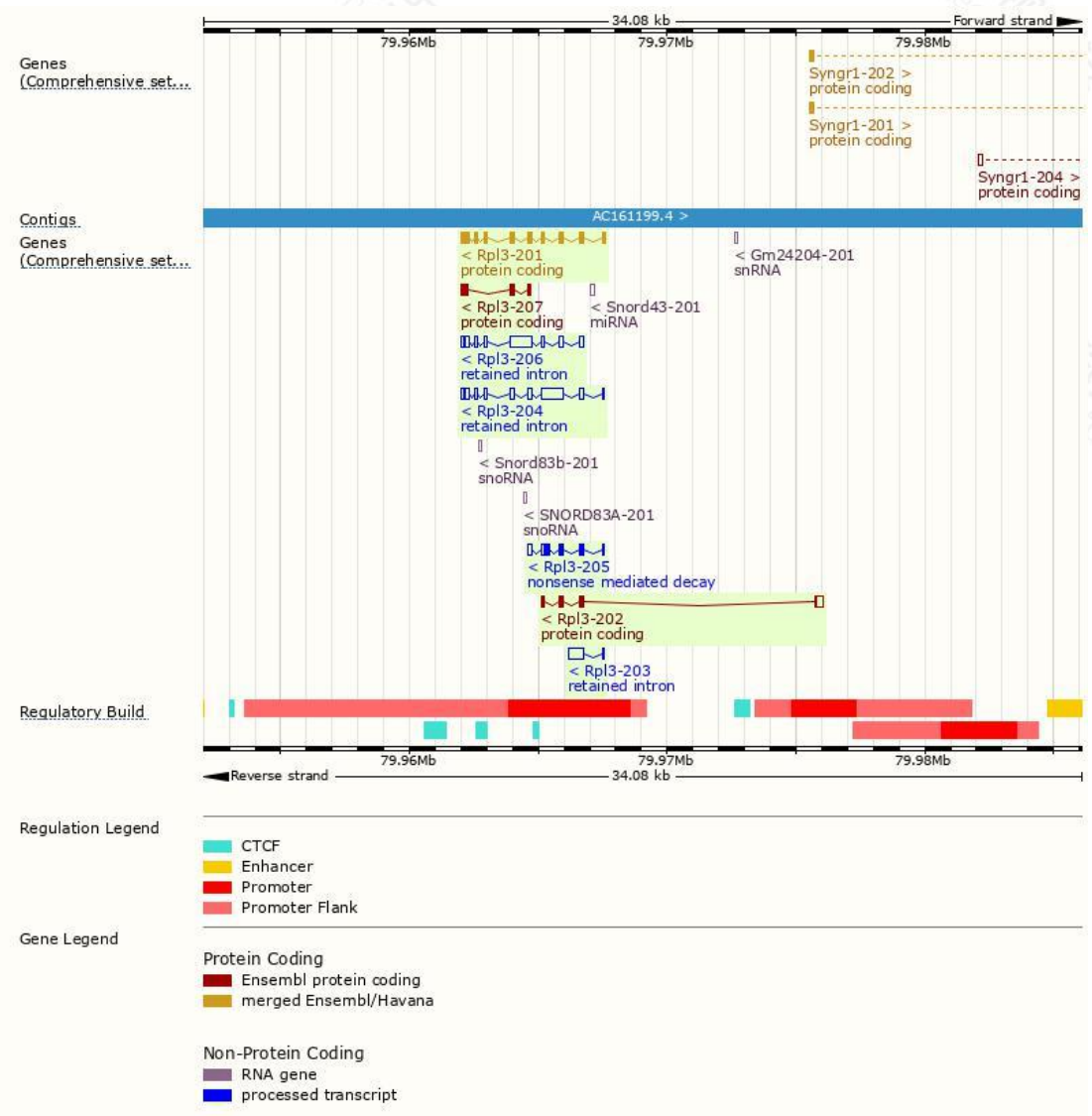
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rpl3-201	ENSMUST00000081650.15	1351	403aa	Protein coding	CCDS37144		TSL:1 , GENCODE basic , APPRIS P1 ,
Rpl3-202	ENSMUST00000185306.3	816	188aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Rpl3-207	ENSMUST00000230985.2	460	134aa	Protein coding	-		CDS 5' incomplete ,
Rpl3-205	ENSMUST00000187832.7	824	180aa	Nonsense mediated decay	-		TSL:5 ,
Rpl3-204	ENSMUST00000187578.2	1877	No protein	Retained intron	-		TSL:5 ,
Rpl3-206	ENSMUST00000188025.7	1781	No protein	Retained intron	-		TSL:5 ,
Rpl3-203	ENSMUST00000185928.2	614	No protein	Retained intron	-		TSL:2 ,

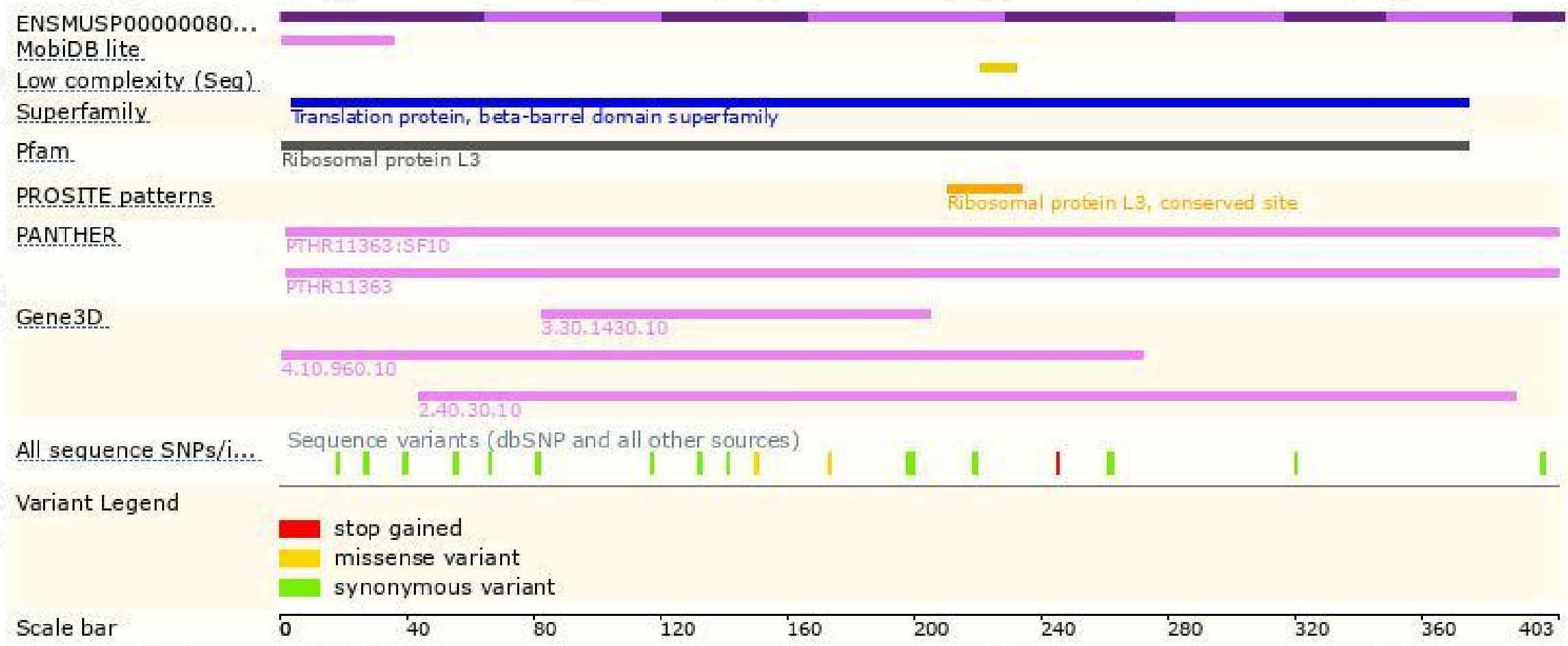
The strategy is based on the design of *Rpl3-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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