Rpl6 Cas9-CKO Strategy

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Project Overview

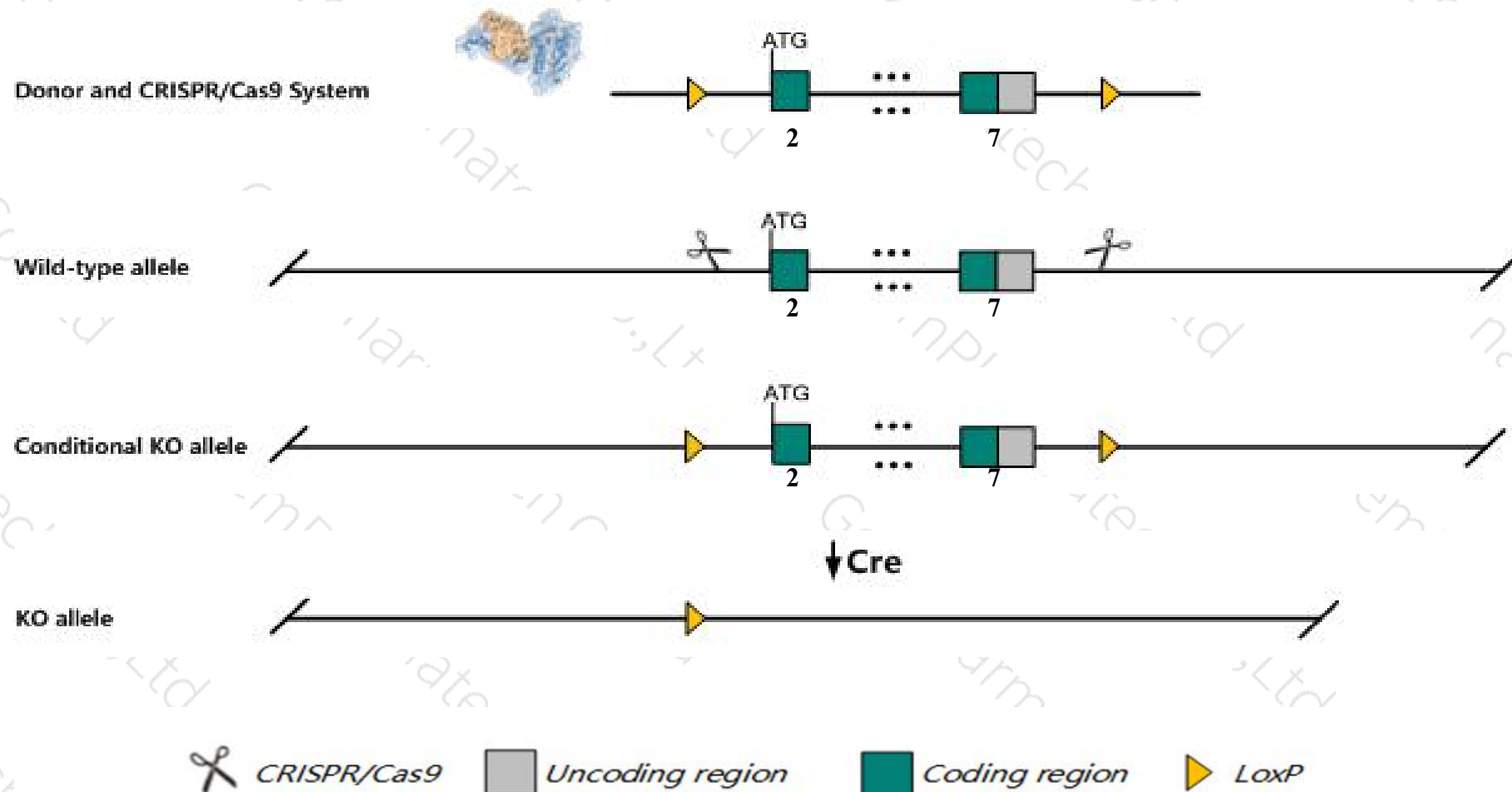|	
Project Name	*Rpl6*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rpl6* gene. The schematic diagram is as follows:

Technical routes

➤ The *Rpl6* gene has 8 transcripts. According to the structure of *Rpl6* gene, exon2-exon7 of *Rpl6-201* (ENSMUST00000031617.12) 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 *Rpl6* 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 *Rpl6* gene is located on the Chr5. 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）

Rpl6 ribosomal protein L6 [Mus musculus (house mouse)]
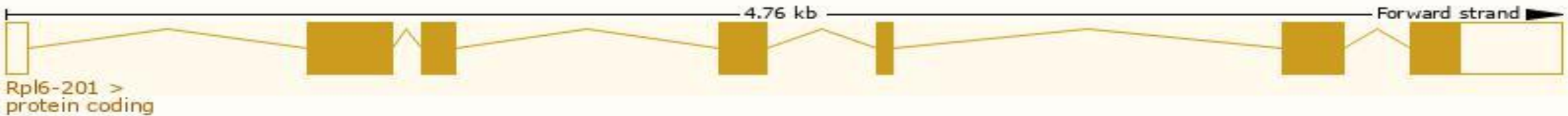
Gene ID: 19988, updated on 3-Feb-2019

▲ Summary

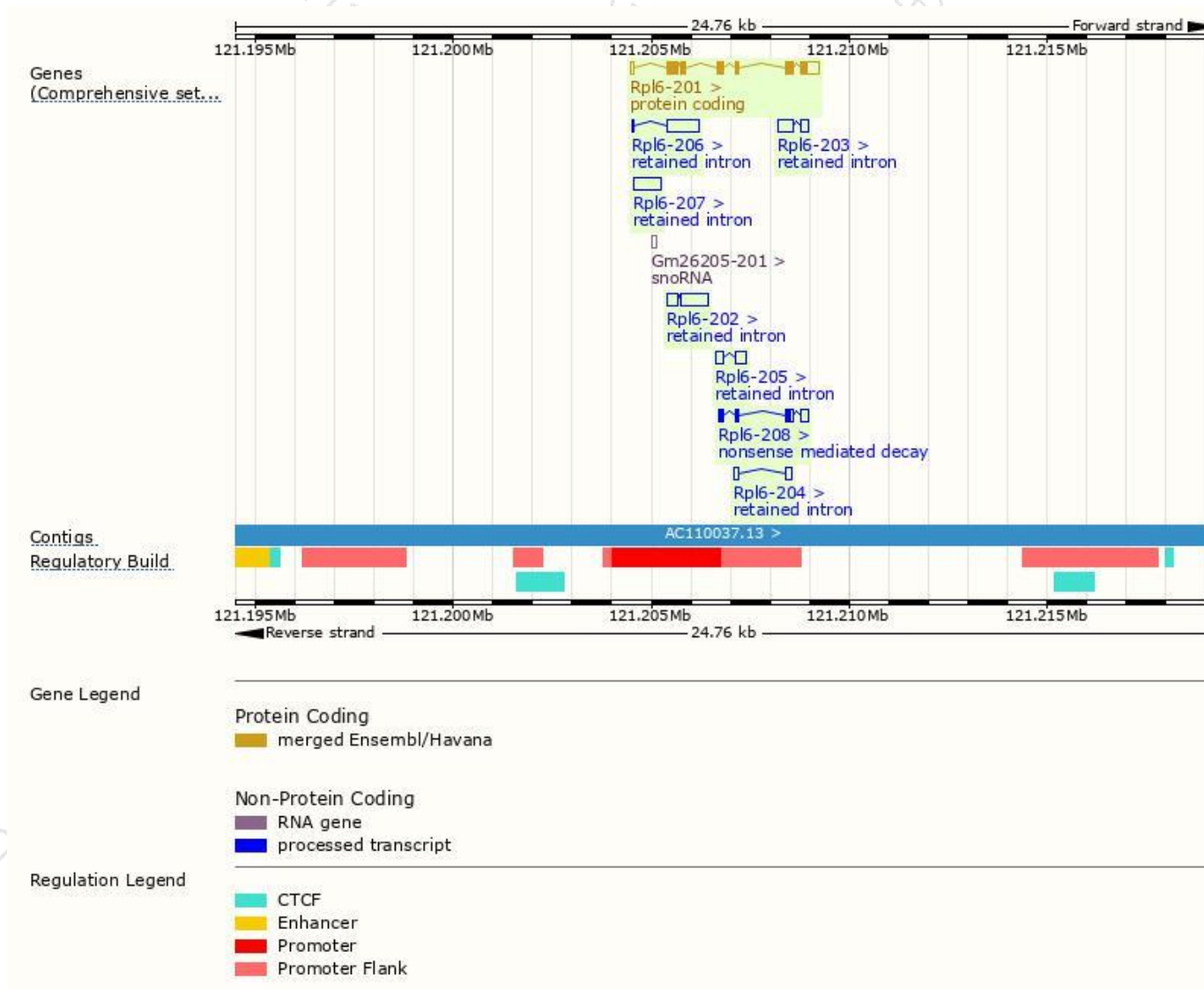|	
Official Symbol	Rpl6 provided by MGI
Official Full Name	ribosomal protein L6 provided by MGI
Primary source	MGI:MGI:108057
See related	Ensembl:ENSMUSG00000029614
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Taxreb107
Expression	Ubiquitous expression in liver E14 (RPKM 369.7), CNS E11.5 (RPKM 369.7) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rpl6-201	ENSMUST00000031617.12	1270	296aa	Protein coding	CCDS19632	P47911 Q3UCH0	TSL:1 GENCODE basic APPRIS P1
Rpl6-208	ENSMUST0000201155.1	486	74aa	Nonsense mediated decay	-	A0A0J9YU32	CDS 5' incomplete TSL:5
Rpl6-202	ENSMUST00000124330.1	947	No protein	Retained intron	-	-	TSL:2
Rpl6-206	ENSMUST00000146579.1	829	No protein	Retained intron	-	-	TSL:3
Rpl6-207	ENSMUST00000197044.1	714	No protein	Retained intron	-	-	TSL:NA
Rpl6-203	ENSMUST00000138621.1	565	No protein	Retained intron	-	-	TSL:2
Rpl6-205	ENSMUST00000140515.1	411	No protein	Retained intron	-	-	TSL:2
Rpl6-204	ENSMUST00000139177.1	284	No protein	Retained intron	-	-	TSL:3

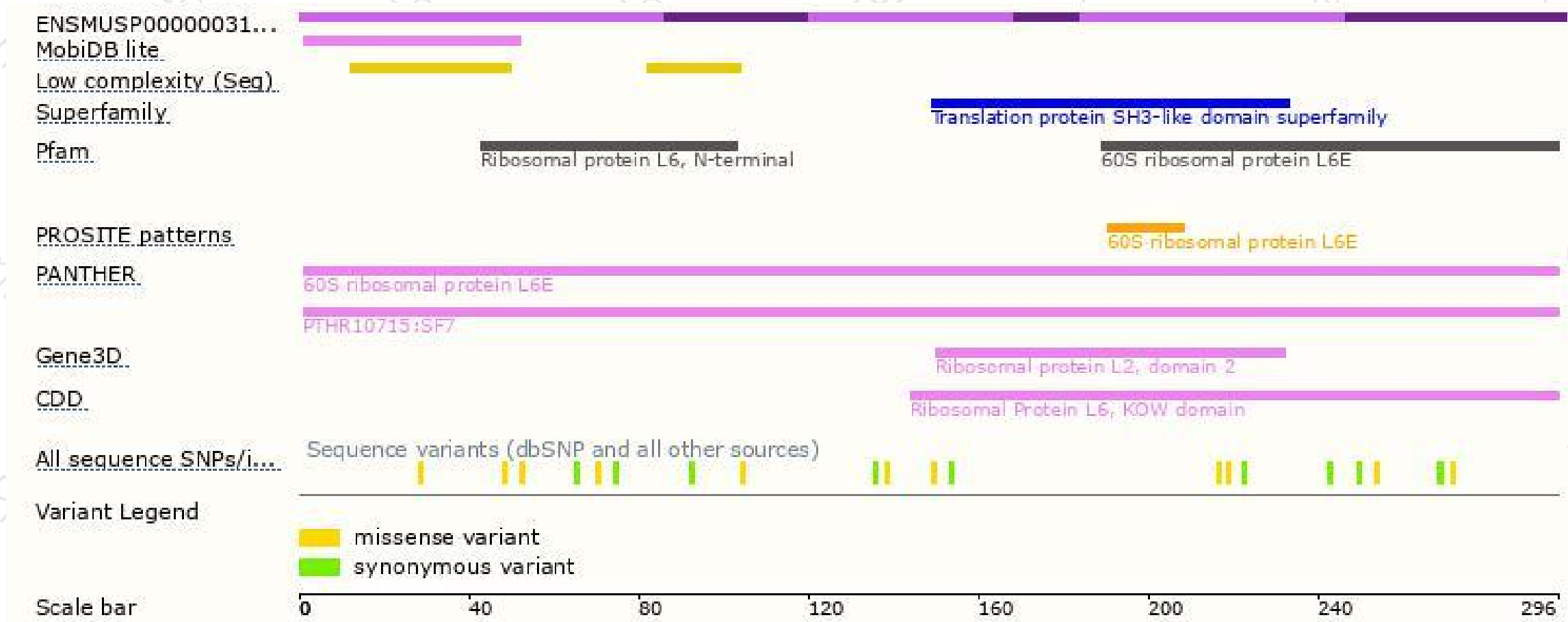The strategy is based on the design of *Rpl6-201* transcript,The transcription is shown below

Genomic location distribution

Protein domain

ENSMUSP00000031...		
MobiDB lite		
Low complexity (Seg)		
Superfamily		Translation protein SH3-like domain superfamily
Pfam	Ribosomal protein L6, N-terminal	60S ribosomal protein L6E
PROSITE patterns		60S ribosomal protein L6E
PANTHER	60S ribosomal protein L6E	
	PTHR10715:SF7	
Gene3D		Ribosomal protein L2, domain 2
CDD		Ribosomal Protein L6, KOW domain
All sequence SNPs/i...	Sequence variants (dbSNP and all other sources)	
Variant Legend	missense variant	
	synonymous variant	
Scale bar	0 40 80 120 160 200 240 296	

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