Rpl8 Cas9-KO Strategy

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Project Overview

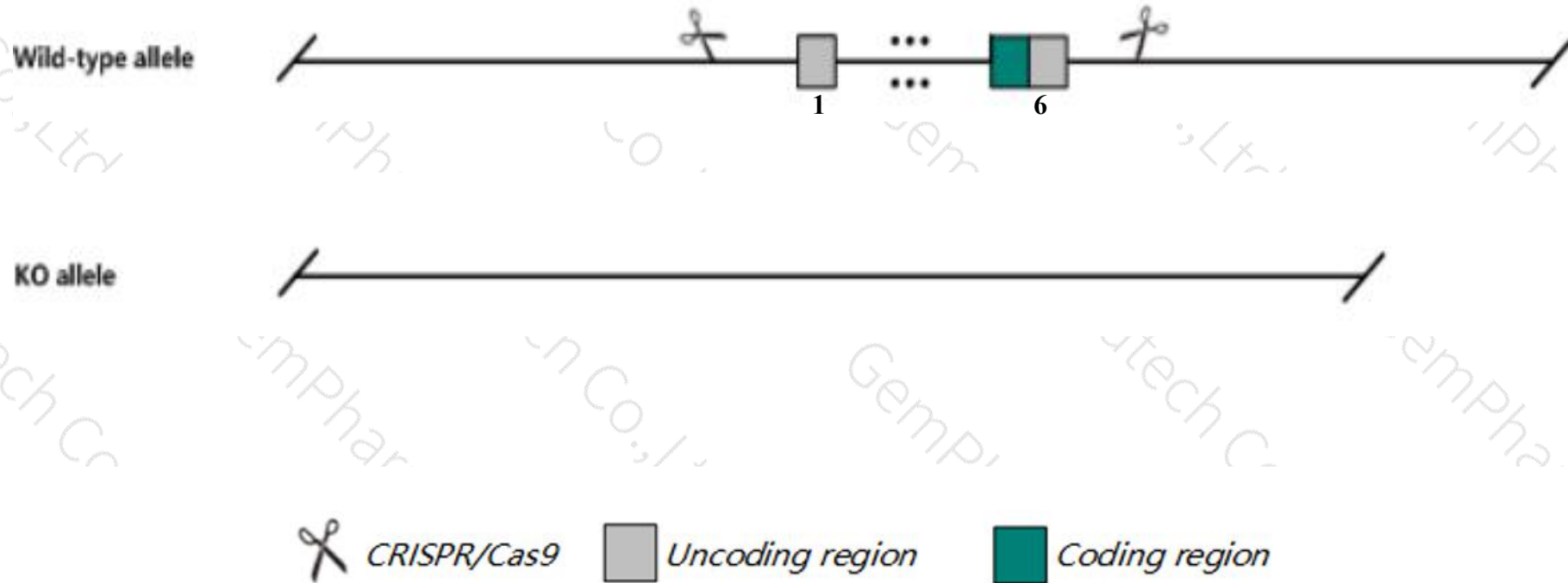|	
Project Name	*Rpl8*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rpl8* gene. The schematic diagram is as follows:

Technical routes

➢ The *Rpl8* gene has 3 transcripts. According to the structure of *Rpl8* gene, exon1-exon6 of *Rpl8-201*(ENSMUST00000004072.9) 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 *Rpl8* 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.

Notice

➢ The *Rpl8* 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）

Rpl8 ribosomal protein L8 [Mus musculus (house mouse)]

Gene ID: 26961, updated on 13-Mar-2020

▲ Summary

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Official Symbol	Rpl8 provided by MGI
Official Full Name	ribosomal protein L8 provided by MGI
Primary source	MGI:MGI:1350927
See related	Ensembl:ENSMUSG00000003970
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 E14.5 (RPKM 798.8), liver E14 (RPKM 773.8) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rpl8-202	ENSMUST00000229183.1	1020	257aa	Protein coding	CCDS27595	P62918	GENCODE basic APPRIS P1
Rpl8-201	ENSMUST00000004072.9	851	257aa	Protein coding	CCDS27595	P62918	TSL:1 GENCODE basic APPRIS P1
Rpl8-203	ENSMUST00000229591.1	824	No protein	Retained intron	-	-	

The strategy is based on the design of *Rpl8-201* transcript,the transcription is shown below:
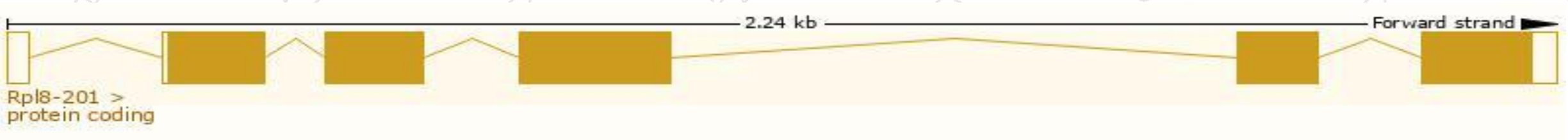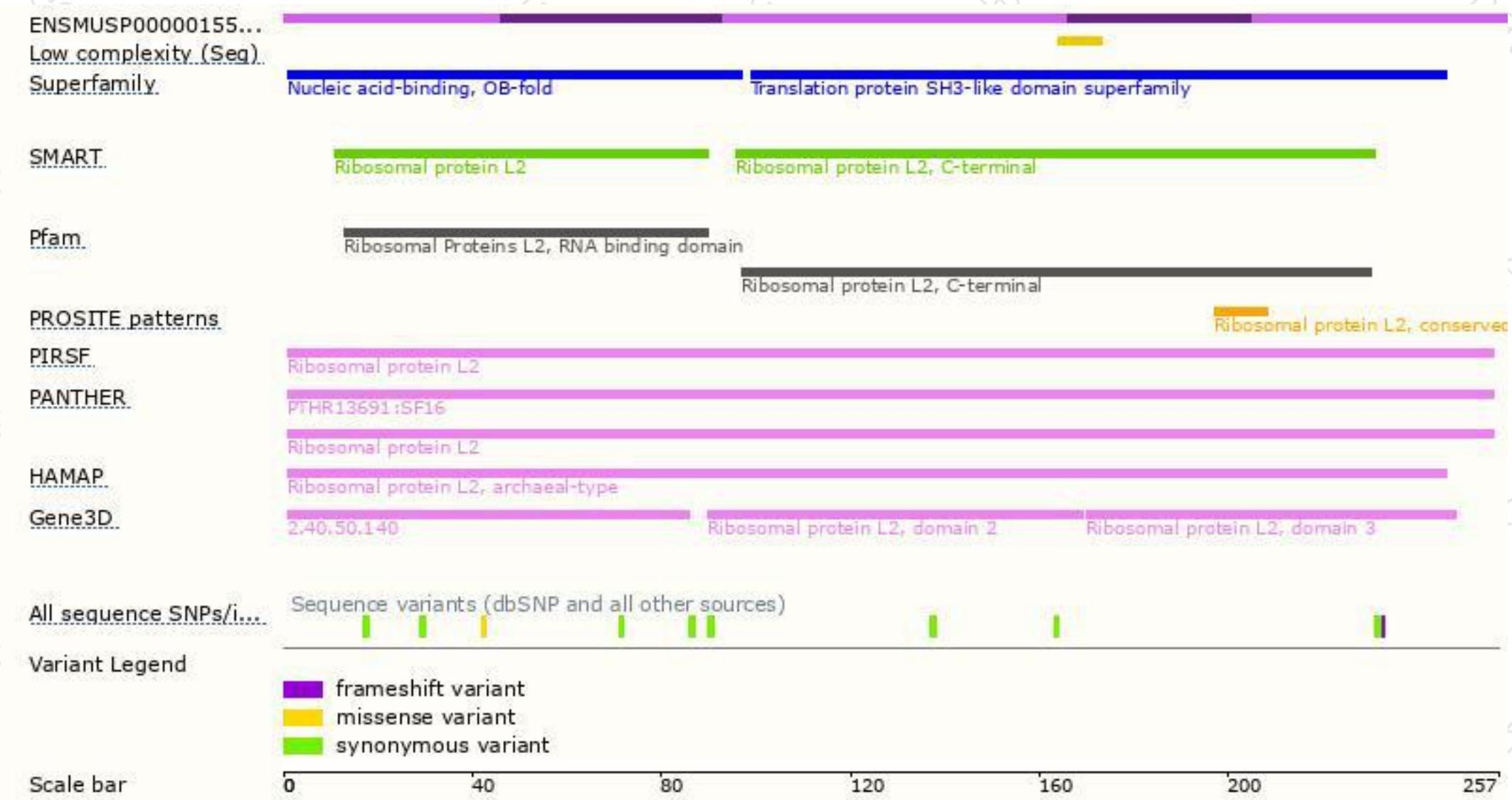
Genomic location distribution
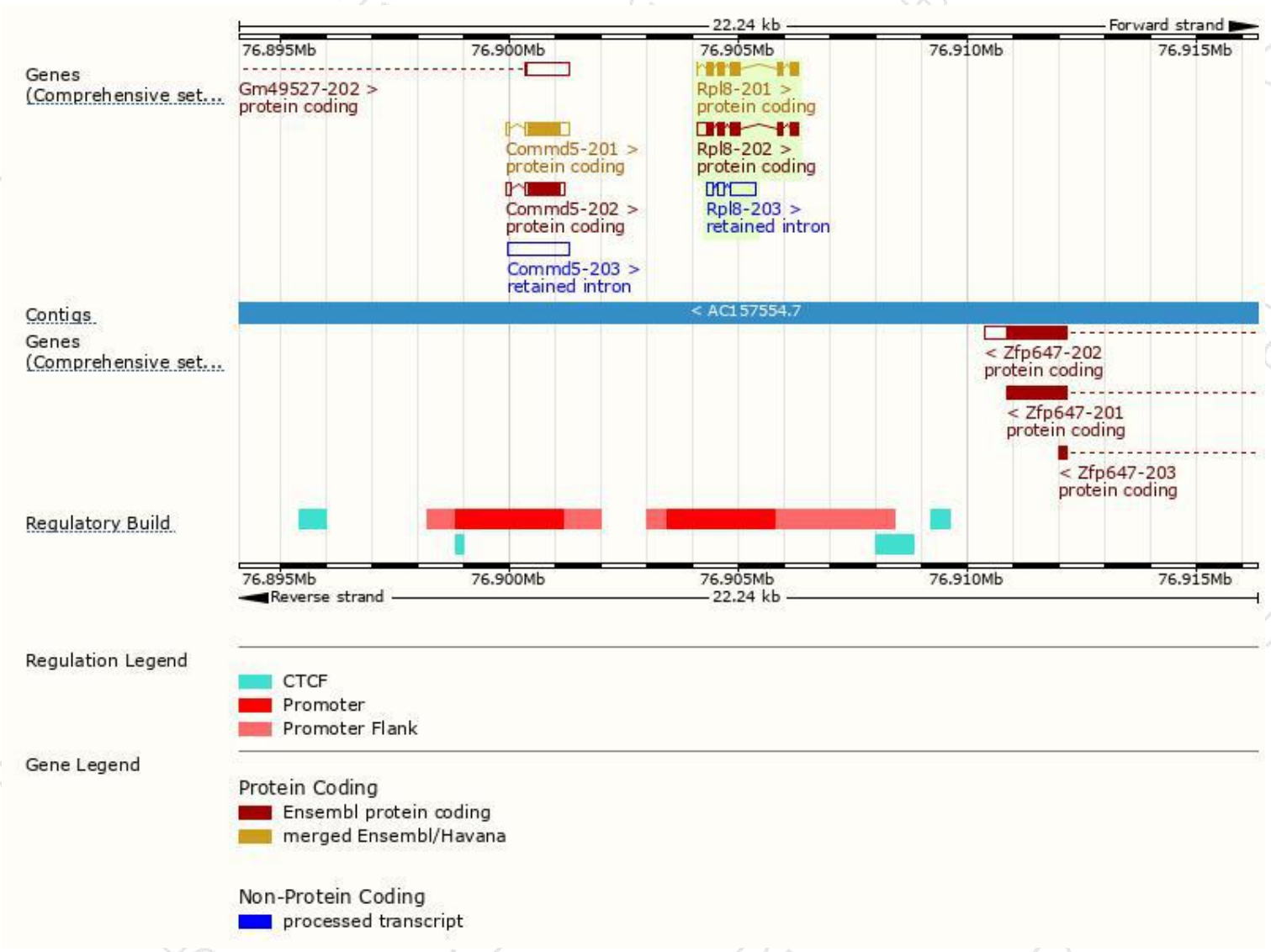
Protein domain

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