

Prpf18 Cas9-KO Strategy

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Reviewer

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Design Date:

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Project Overview

Project Name

Prpf18

Project type

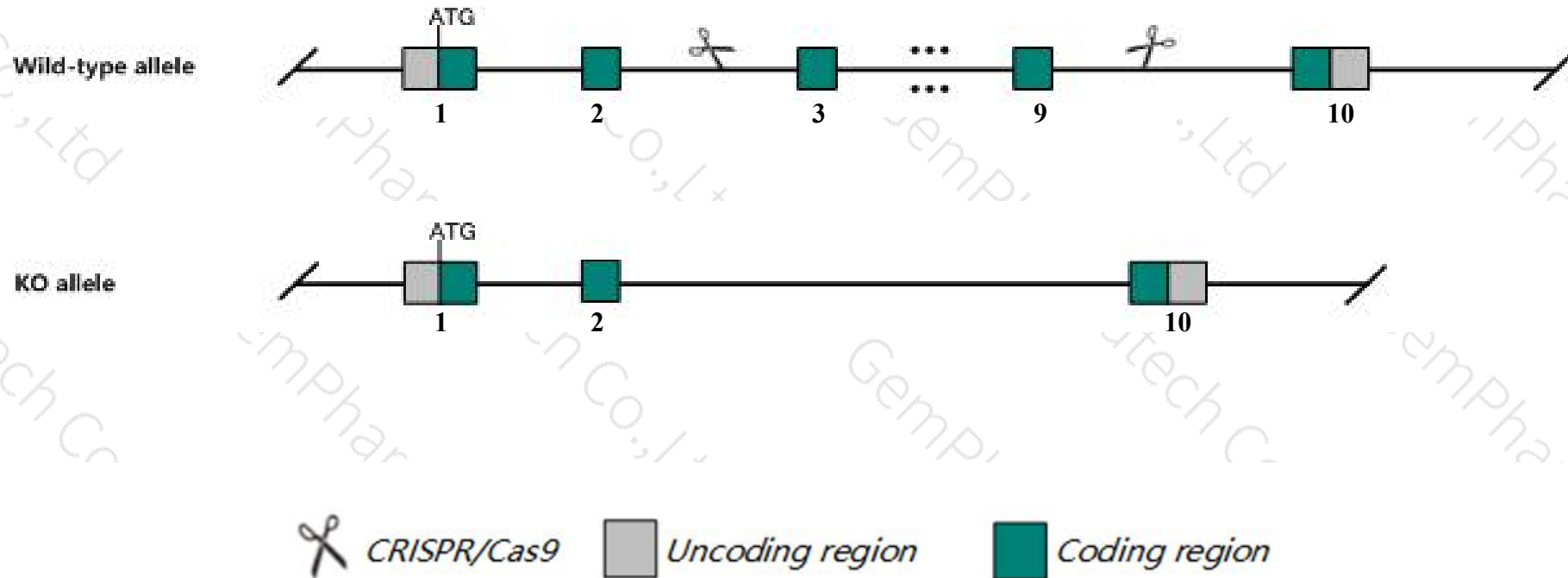
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prpf18* gene. The schematic diagram is as follows:



- The *Prpf18* gene has 6 transcripts. According to the structure of *Prpf18* gene, exon3-exon9 of *Prpf18-201* (ENSMUST00000035721.13) transcript is recommended as the knockout region. The region contains most 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 *Prpf18* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Prpf18* gene is located on the Chr2. 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.
- The KO region deletes most of the coding sequence, but does not result in frameshift.
- 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)

Prpf18 pre-mRNA processing factor 18 [*Mus musculus* (house mouse)]

Gene ID: 67229, updated on 12-Aug-2019

Summary

Official Symbol Prpf18 provided by [MGI](#)

Official Full Name pre-mRNA processing factor 18 provided by [MGI](#)

Primary source [MGI:MGI:1914479](#)

See related [Ensembl:ENSMUSG00000039449](#)

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 2810441A10Rik

Expression Ubiquitous expression in liver E14 (RPKM 11.8), placenta adult (RPKM 11.0) and 28 other tissues [See more](#)

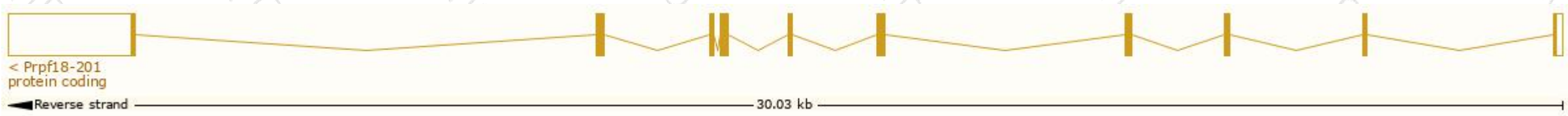
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

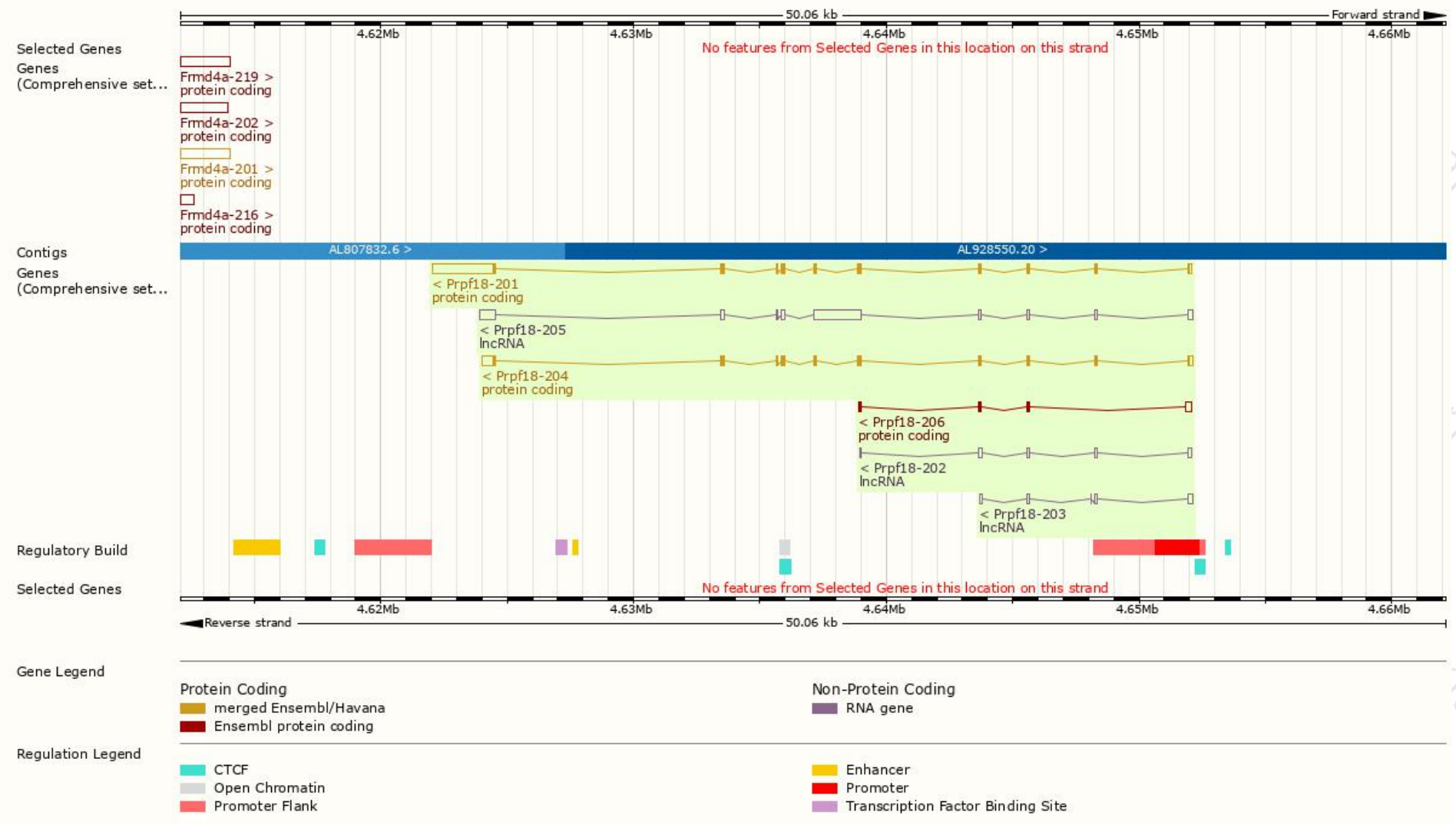
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Prpf18-201	ENSMUST00000035721.13	3522	342aa	Protein coding	CCDS15657	Q8BM39	TSL:1 GENCODE basic APPRIS P1
Prpf18-204	ENSMUST00000152362.6	1579	342aa	Protein coding	CCDS15657	Q8BM39	TSL:1 GENCODE basic APPRIS P1
Prpf18-206	ENSMUST00000192470.1	553	73aa	Protein coding	-	A0A0A6YW97	CDS 3' incomplete TSL:5
Prpf18-205	ENSMUST00000153881.7	3295	No protein	Processed transcript	-	-	TSL:1
Prpf18-202	ENSMUST00000140818.7	551	No protein	Processed transcript	-	-	TSL:3
Prpf18-203	ENSMUST00000144650.1	496	No protein	Processed transcript	-	-	TSL:3

The strategy is based on the design of *Prpf18-201* transcript, the transcription is shown below



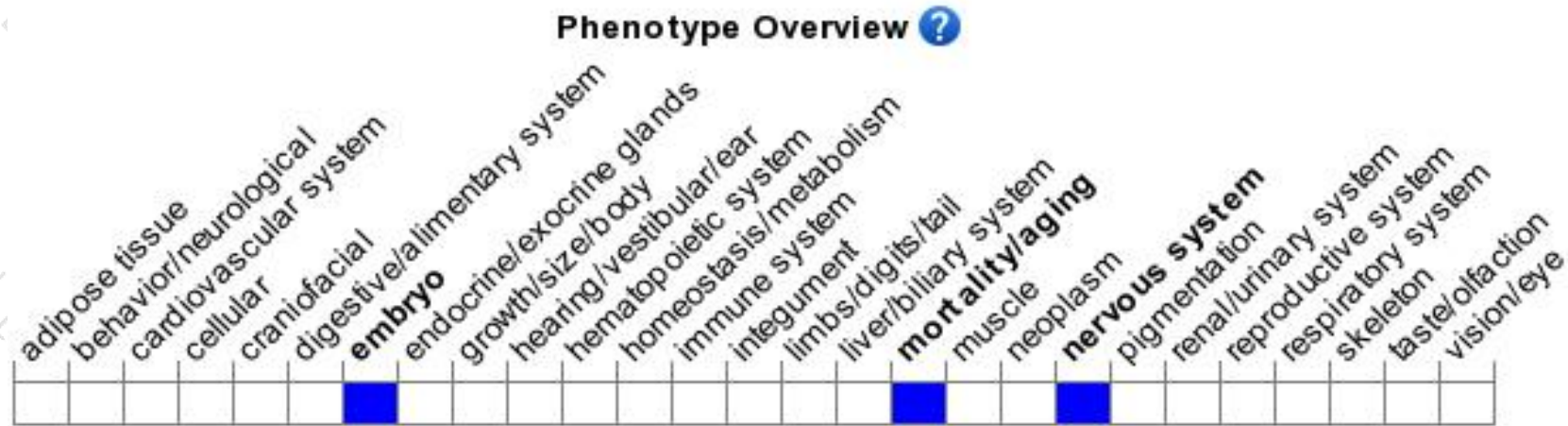
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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