

Ptprf Cas9-KO Strategy

Designer:

Yang Zeng

Reviewer:

Ruirui Zhang

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Project Overview

Project Name

Ptprf

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Ptprf* gene has 7 transcripts. According to the structure of *Ptprf* gene, exon4-exon13 of *Ptprf*-201 (ENSMUST00000049074.12) transcript is recommended as the knockout region. The region contains 2222bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ptprf* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Homozygous null females have premature involution of the mammary glands leading to an inability to feed pups. Other characteristics of null mice include defective nerve regeneration and hyperactivity.
- The *Ptprf* gene is located on the Chr4. 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)

Ptprf protein tyrosine phosphatase, receptor type, F [*Mus musculus* (house mouse)]

Gene ID: 19268, updated on 12-Aug-2019

Summary

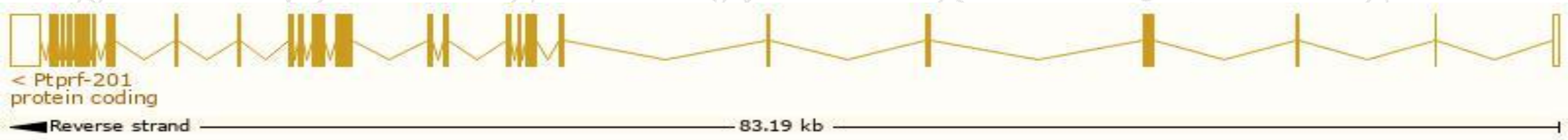
Official Symbol	Ptprf provided by MGI
Official Full Name	protein tyrosine phosphatase, receptor type, F provided by MGI
Primary source	MGI:MGI:102695
See related	Ensembl:ENSMUSG000000033295
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	LAR; LARS; AA591035; RPTP-LAR
Expression	Ubiquitous expression in lung adult (RPKM 85.7), colon adult (RPKM 71.2) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

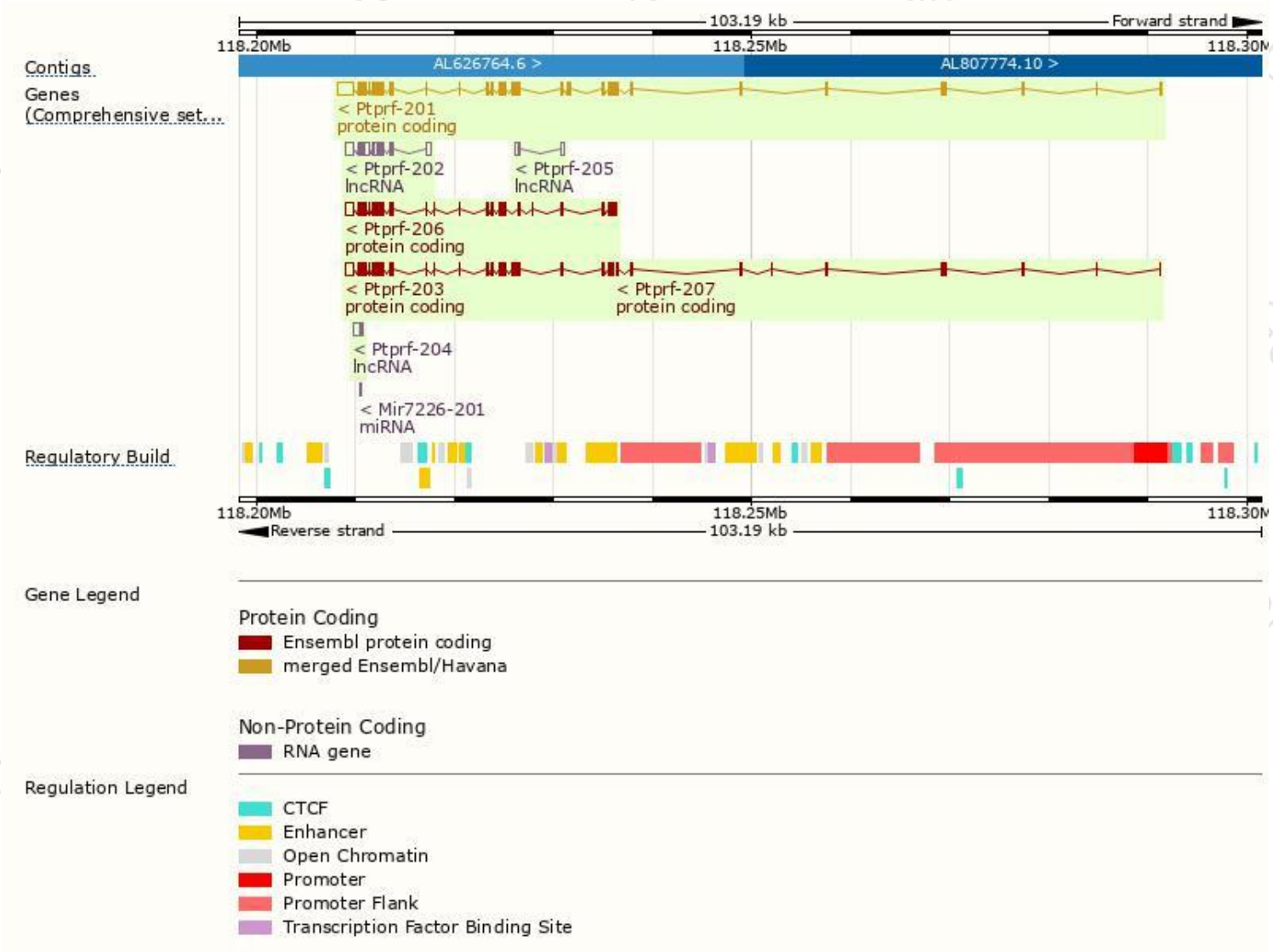
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ptprf-201	ENSMUST00000049074.12	7656	1898aa	Protein coding	CCDS18546	A2A8L5	TSL:5 GENCODE basic APPRIS P1
Ptprf-203	ENSMUST00000124758.1	4808	1332aa	Protein coding	-	F6S1X8	CDS 5' incomplete TSL:5
Ptprf-206	ENSMUST00000150096.7	4690	1291aa	Protein coding	-	F6Y3V0	CDS 5' incomplete TSL:5
Ptprf-207	ENSMUST00000222620.1	1309	363aa	Protein coding	-	A0A1Y7VNR5	CDS 3' incomplete TSL:5
Ptprf-202	ENSMUST00000123484.1	3306	No protein	lncRNA	-	-	TSL:5
Ptprf-204	ENSMUST00000127616.1	770	No protein	lncRNA	-	-	TSL:2
Ptprf-205	ENSMUST00000143348.1	744	No protein	lncRNA	-	-	TSL:2

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



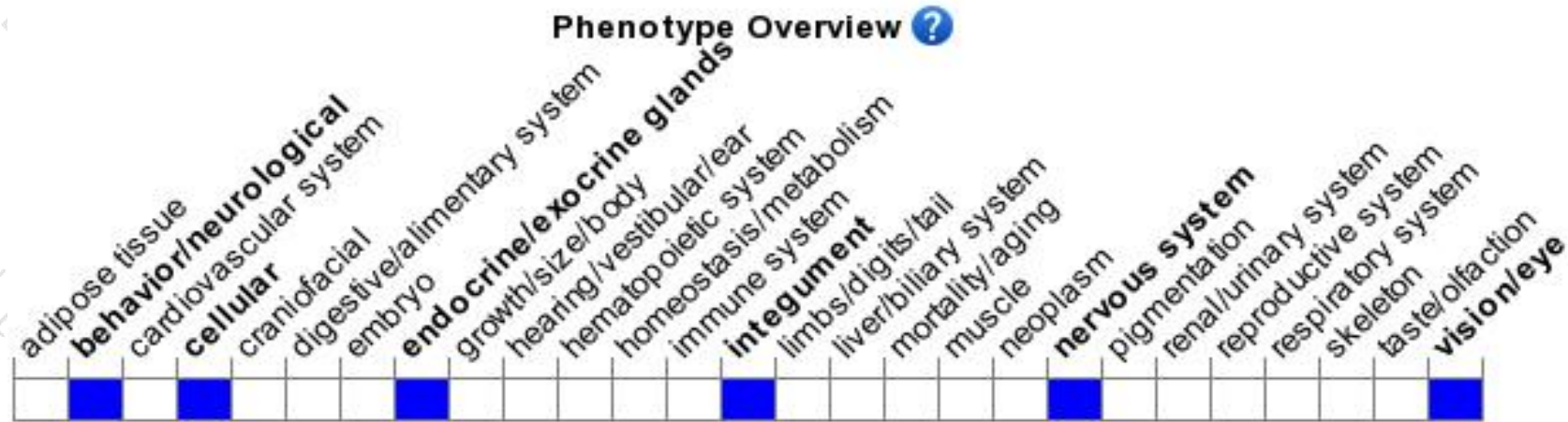
Genomic location distribution



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/>).

According to the existing MGI data, Homozygous null females have premature involution of the mammary glands leading to an inability to feed pups. Other characteristics of null mice include defective nerve regeneration and hyperactivity.

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

Tel: 400-9660890

