

Ppp2r1b Cas9-KO Strategy

Designer: Shuang Zhang

Reviewer: Yun Li

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Project Overview

Project Name

Ppp2r1b

Project type

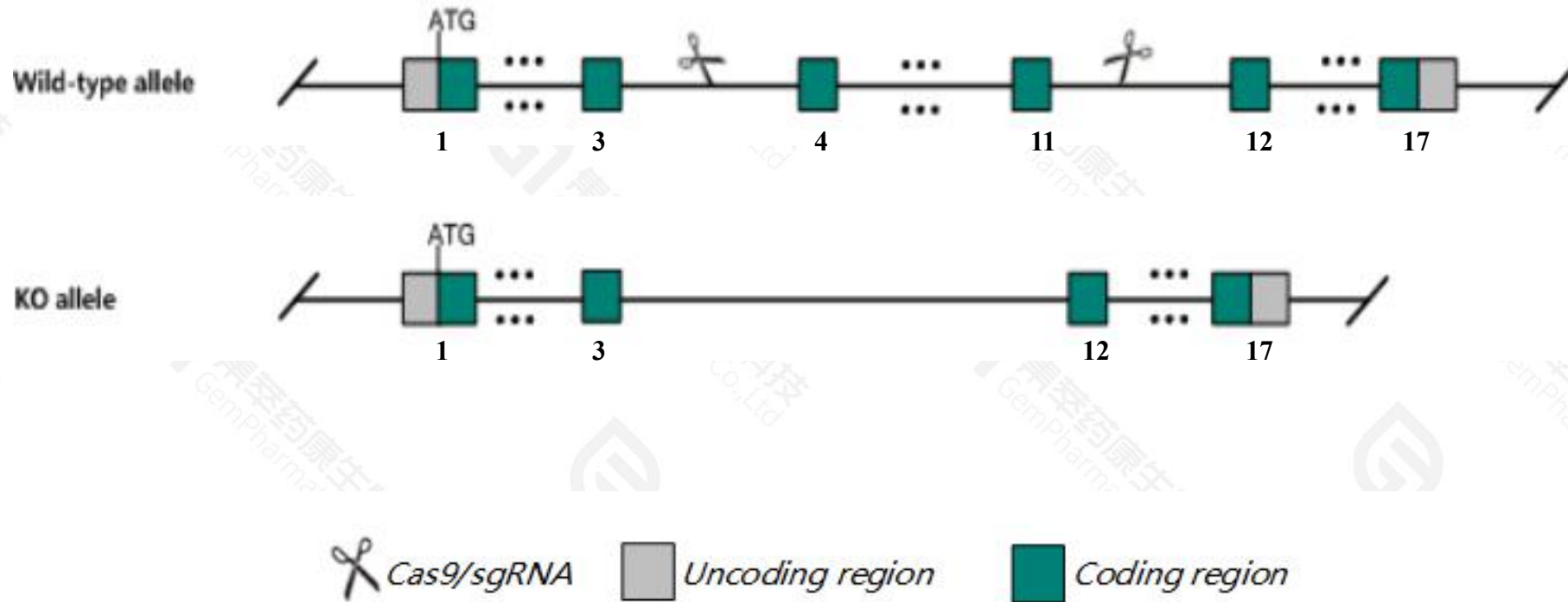
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppp2r1b* gene. The schematic diagram is as follows:



- The *Ppp2r1b* gene has 12 transcripts. According to the structure of *Ppp2r1b* gene, exon4-exon11 of *Ppp2r1b-204*(ENSMUST00000174628.8) transcript is recommended as the knockout region. The region contains 1093bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ppp2r1b* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Ppp2r1b* gene is located on the Chr9. 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.

Ppp2r1b protein phosphatase 2, regulatory subunit A, beta [Mus musculus (house mouse)]

Gene ID: 73699, updated on 25-Sep-2020

Summary



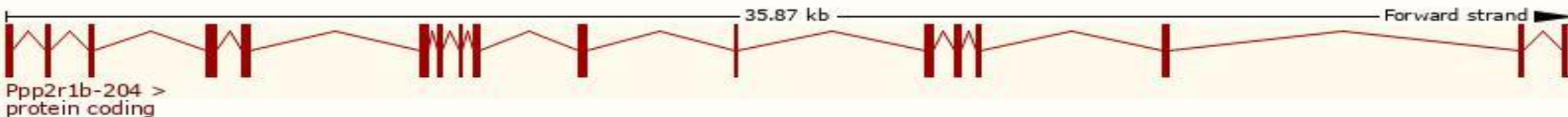
Official Symbol	Ppp2r1b provided by MGI
Official Full Name	protein phosphatase 2, regulatory subunit A, beta provided by MGI
Primary source	MGI:MGI:1920949
See related	Ensembl:ENSMUSG00000032058
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410091N08Rik, AI790395
Expression	Ubiquitous expression in subcutaneous fat pad adult (RPKM 19.8), genital fat pad adult (RPKM 16.5) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

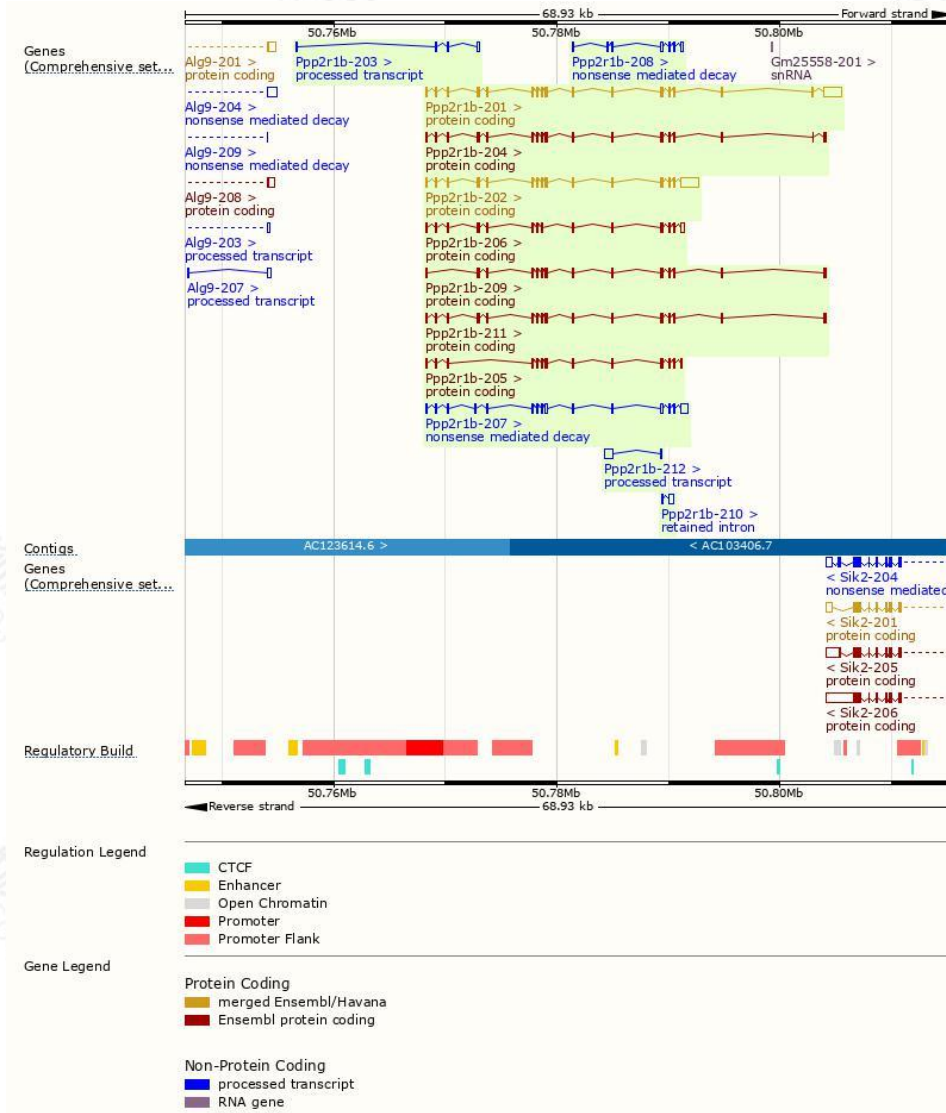
The gene has 12 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppp2r1b-201	ENSMUST00000034560.14	3647	658aa	Protein coding	CCDS40625		TSL:1, GENCODE basic, APPRIS P4,
Ppp2r1b-202	ENSMUST00000114437.9	3430	601aa	Protein coding	CCDS40626		TSL:1, GENCODE basic, APPRIS ALT2,
Ppp2r1b-204	ENSMUST00000174628.8	2195	694aa	Protein coding	CCDS72232		TSL:1, GENCODE basic, APPRIS ALT2,
Ppp2r1b-211	ENSMUST00000176798.8	2074	667aa	Protein coding	-		TSL:5, GENCODE basic,
Ppp2r1b-206	ENSMUST00000175645.8	1931	556aa	Protein coding	-		TSL:5, GENCODE basic,
Ppp2r1b-209	ENSMUST00000176349.8	1890	603aa	Protein coding	-		TSL:5, GENCODE basic,
Ppp2r1b-205	ENSMUST00000175640.8	1523	474aa	Protein coding	-		TSL:5, GENCODE basic,
Ppp2r1b-207	ENSMUST00000175926.8	2303	135aa	Nonsense mediated decay	-		TSL:5,
Ppp2r1b-208	ENSMUST00000176055.2	907	93aa	Nonsense mediated decay	-		CDS 5' incomplete, TSL:5,
Ppp2r1b-212	ENSMUST00000177454.2	721	No protein	Processed transcript	-		TSL:3,
Ppp2r1b-203	ENSMUST00000174555.2	529	No protein	Processed transcript	-		TSL:2,
Ppp2r1b-210	ENSMUST00000176414.2	547	No protein	Retained intron	-		TSL:3,

The strategy is based on the design of *Ppp2r1b-204* transcript, the transcription is shown below:



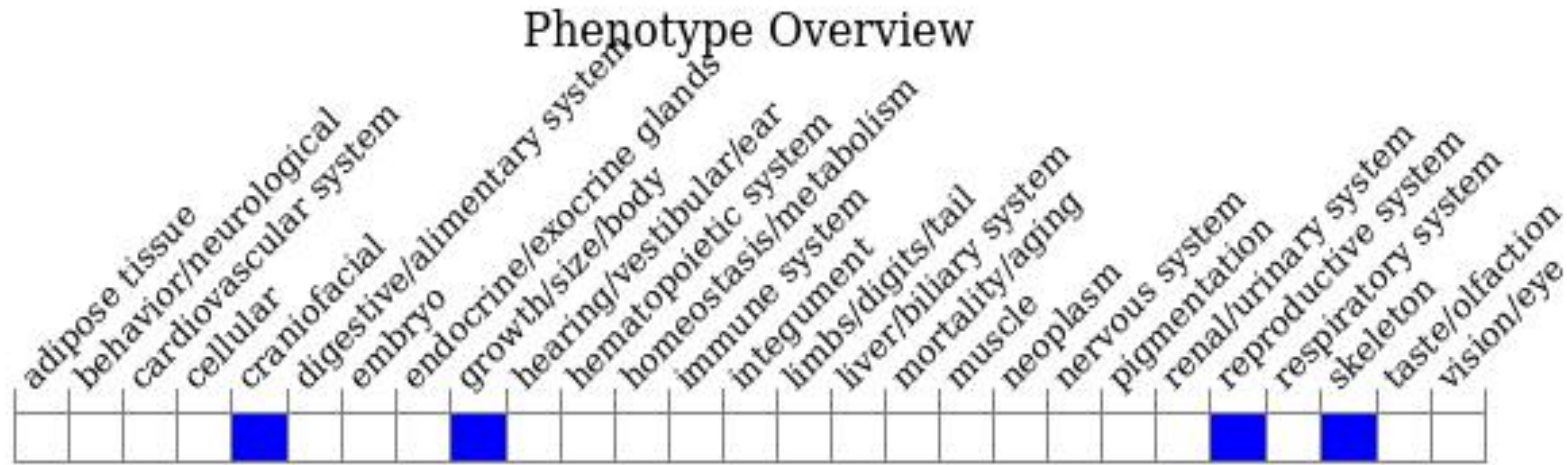
Genomic location distribution



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.

Tel: 025-5864 1534

