

Ppp2r2d Cas9-CKO Strategy

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Project Overview

Project Name

Ppp2r2d

Project type

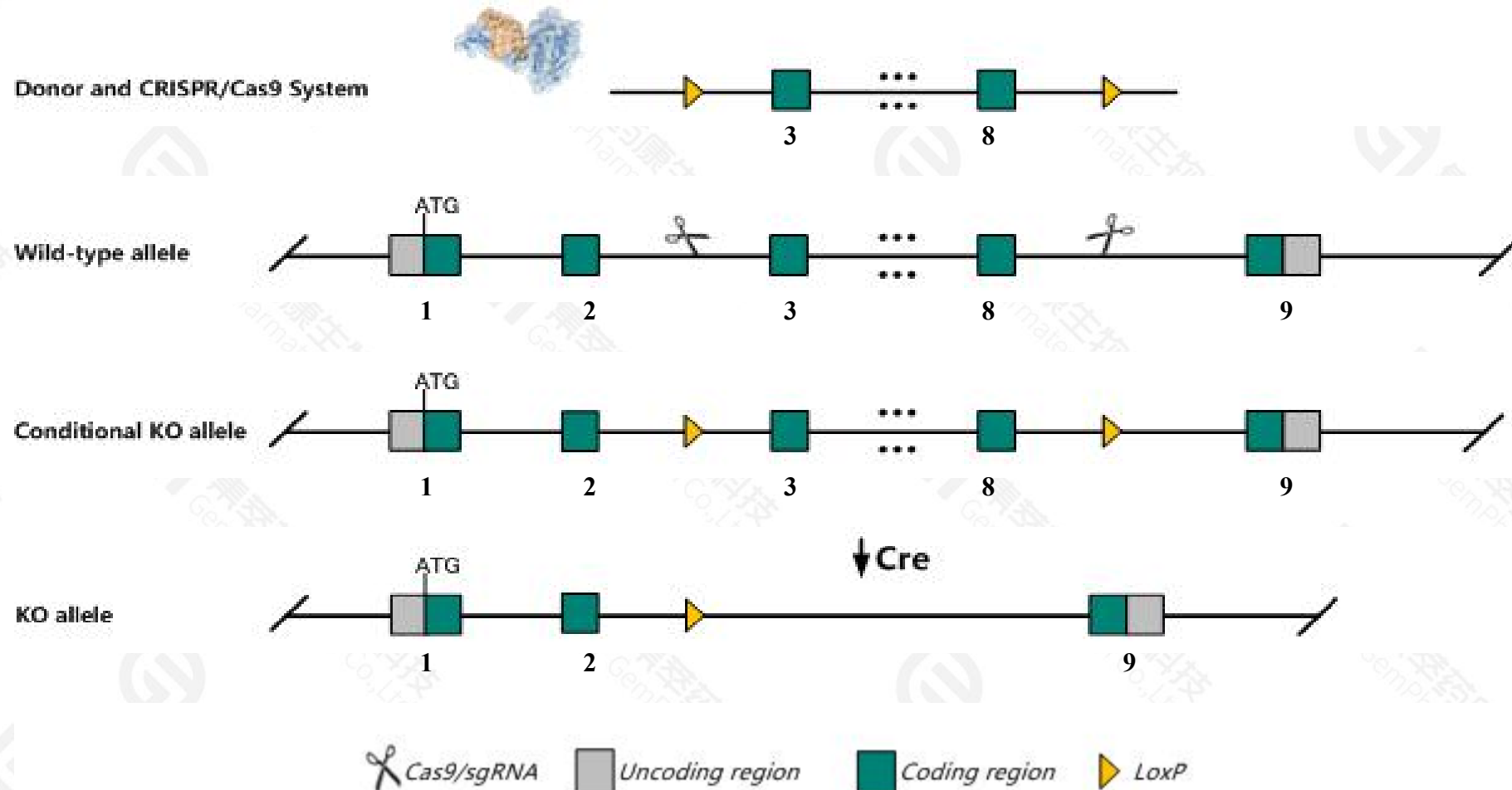
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppp2r2d* gene. The schematic diagram is as follows:



- The *Ppp2r2d* gene has 9 transcripts. According to the structure of *Ppp2r2d* gene, exon3-exon8 of *Ppp2r2d*-201(ENSMUST00000041097.12) transcript is recommended as the knockout region. The region contains 982bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ppp2r2d* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- The *Ppp2r2d* gene is located on the Chr7. 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)

Ppp2r2d protein phosphatase 2, regulatory subunit B, delta [Mus musculus (house mouse)]

Gene ID: 52432, updated on 13-Mar-2020

Summary



Official Symbol Ppp2r2d provided by [MGI](#)

Official Full Name protein phosphatase 2, regulatory subunit B, delta provided by [MGI](#)

Primary source [MGI:MGI:1289252](#)

See related [Ensembl:ENSMUSG00000041769](#)

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 1300017E19Rik, D7Ert753, D7Ert753e, MDS02, MDS026

Expression Ubiquitous expression in testis adult (RPKM 18.0), whole brain E14.5 (RPKM 10.6) and 28 other tissues [See more](#)

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

Transcript information (Ensembl)

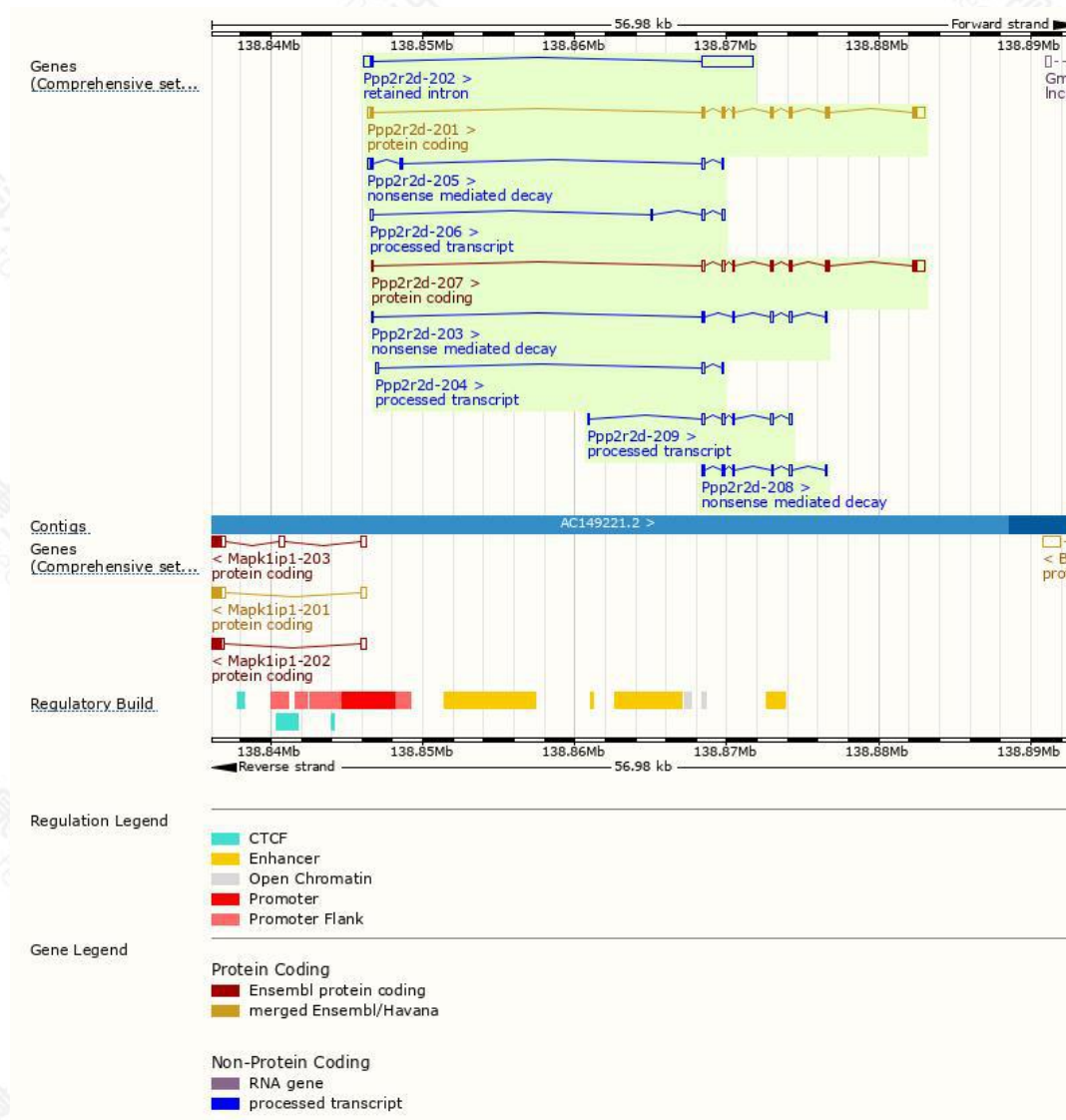
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppp2r2d-201	ENSMUST00000041097.12	2081	453aa	Protein coding	CCDS21950	Q925E7	TSL:1 GENCODE basic APPRIS P1
Ppp2r2d-207	ENSMUST00000155672.7	1938	288aa	Protein coding	CCDS85447	F6RV17	TSL:1 GENCODE basic
Ppp2r2d-203	ENSMUST00000136824.7	752	69aa	Nonsense mediated decay	-	G3UWQ1	CDS 5' incomplete TSL:5
Ppp2r2d-208	ENSMUST00000172764.1	700	128aa	Nonsense mediated decay	-	G3UXS9	CDS 5' incomplete TSL:5
Ppp2r2d-205	ENSMUST00000148453.7	623	71aa	Nonsense mediated decay	-	D6RCH9	TSL:3
Ppp2r2d-209	ENSMUST00000174090.1	779	No protein	Processed transcript	-	-	TSL:3
Ppp2r2d-206	ENSMUST00000152104.7	451	No protein	Processed transcript	-	-	TSL:3
Ppp2r2d-204	ENSMUST00000140047.7	435	No protein	Processed transcript	-	-	TSL:3
Ppp2r2d-202	ENSMUST00000128157.1	3823	No protein	Retained intron	-	-	TSL:1

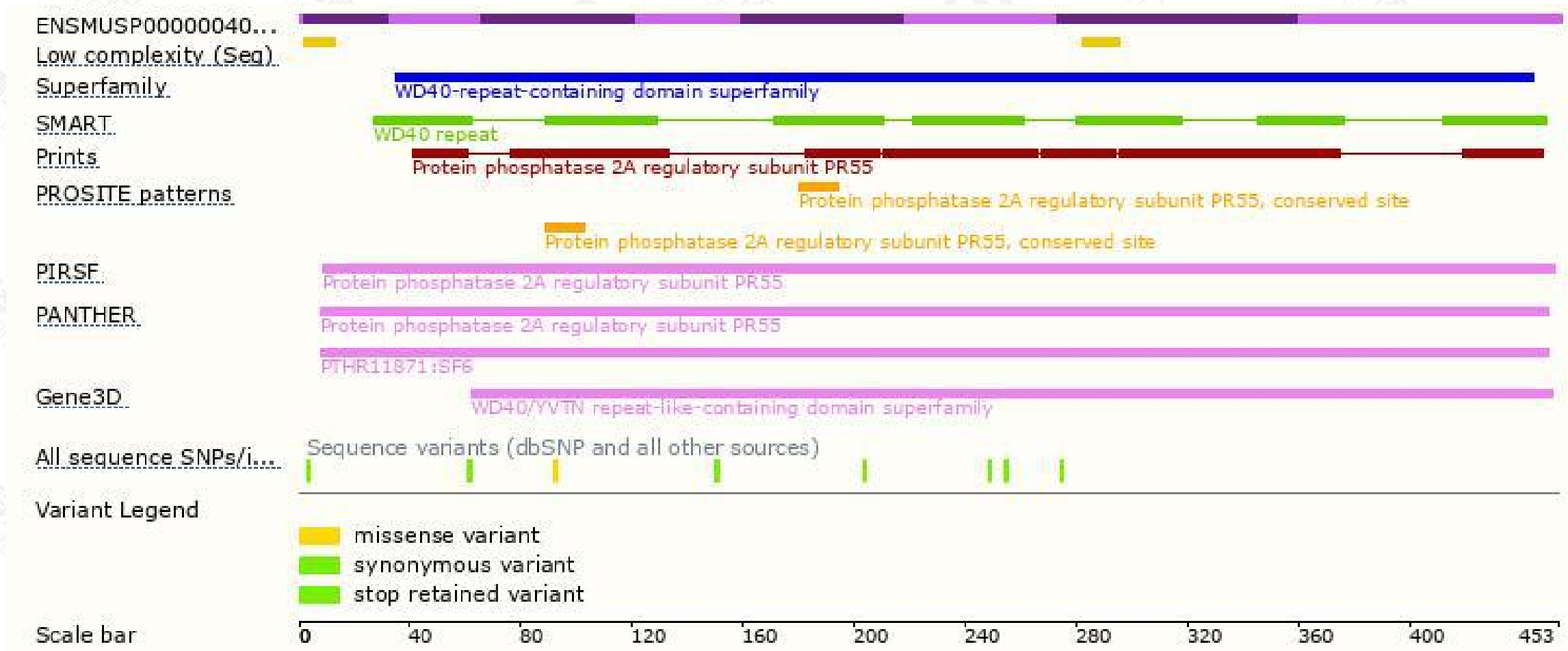
The strategy is based on the design of *Ppp2r2d-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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