

Ppm1h Cas9-KO Strategy

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Project Overview

Project Name

Ppm1h

Project type

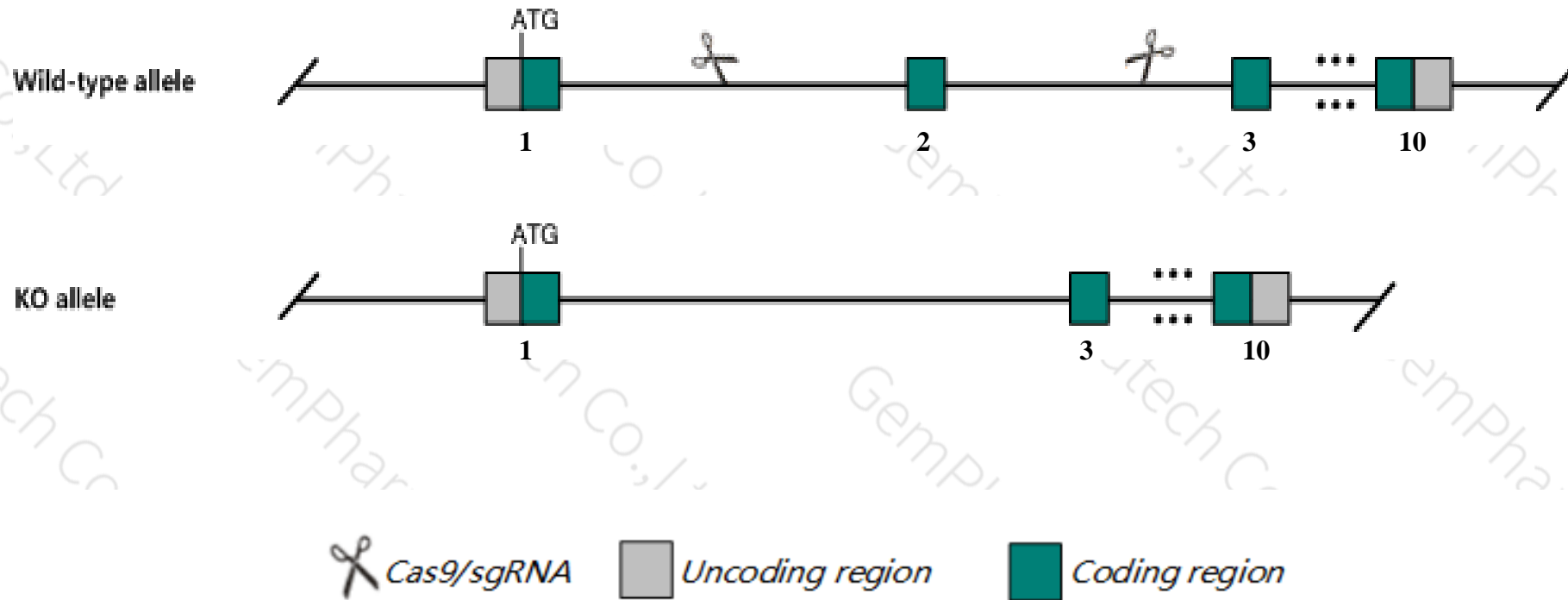
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppm1h* gene. The schematic diagram is as follows:



Technical routes

- The *Ppm1h* gene has 8 transcripts. According to the structure of *Ppm1h* gene, exon2 of *Ppm1h-201*(ENSMUST00000067918.11) transcript is recommended as the knockout region. The region contains 163bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ppm1h* 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.

Notice

- Transcript 208 may not be affected.
- The *Ppm1h* gene is located on the Chr10. 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)

Ppm1h protein phosphatase 1H (PP2C domain containing) [Mus musculus (house mouse)]

Gene ID: 319468, updated on 13-Mar-2020

Summary



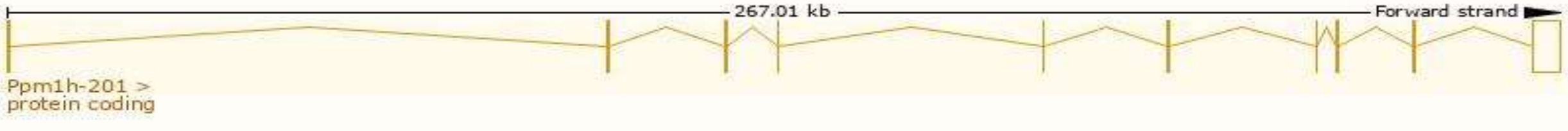
Official Symbol	Ppm1h provided by MGI
Official Full Name	protein phosphatase 1H (PP2C domain containing) provided by MGI
Primary source	MGI:MGI:2442087
See related	Ensembl:ENSMUSG00000034613
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A430075L18Rik, ARHCL1, C030002B11Rik
Expression	Broad expression in thymus adult (RPKM 12.2), kidney adult (RPKM 8.1) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

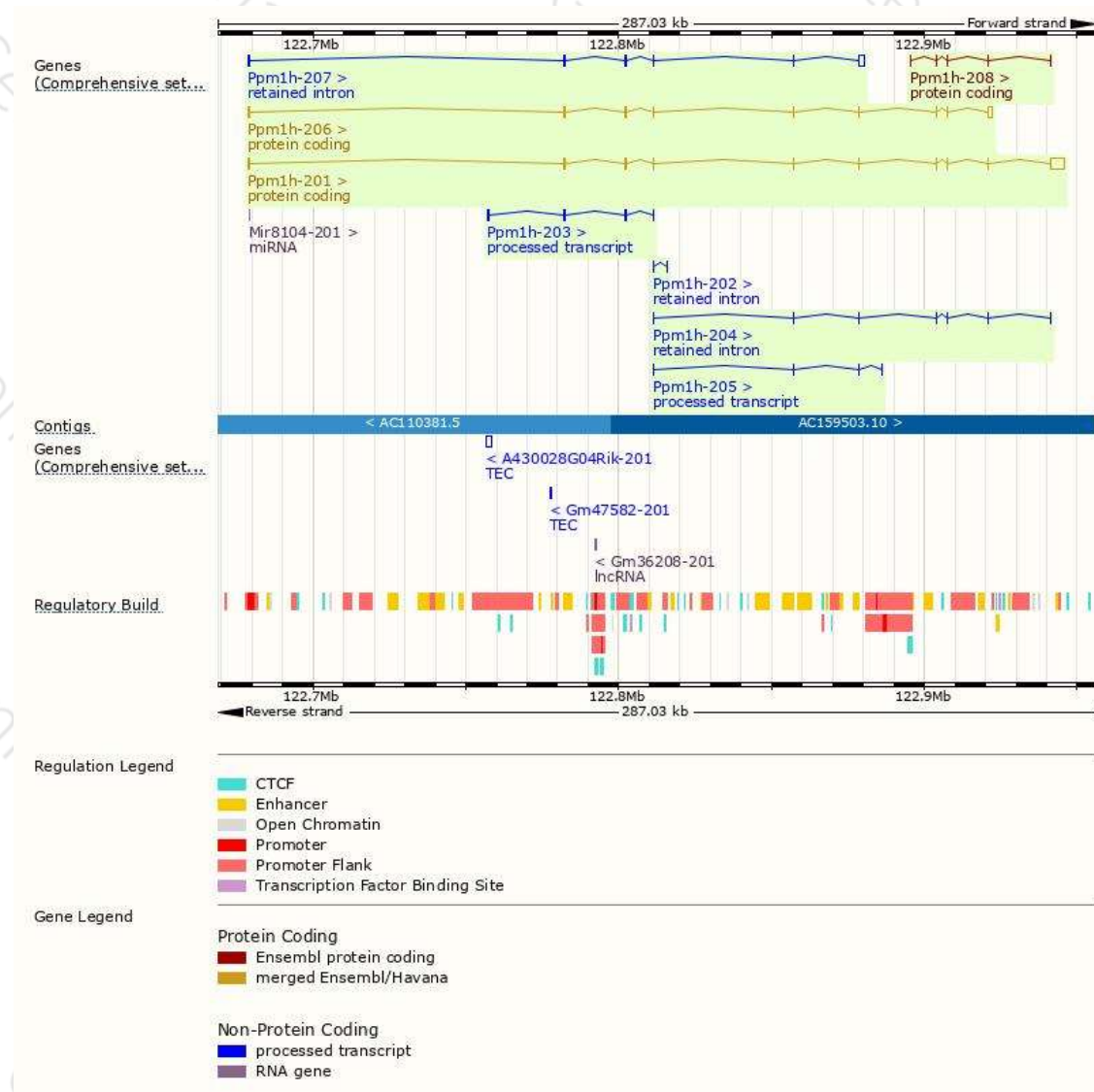
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppm1h-201	ENSMUST00000067918.11	6369	513aa	Protein coding	CCDS48705	Q3UYC0	TSL:1 GENCODE basic APPRIS P1
Ppm1h-206	ENSMUST00000161487.7	2931	469aa	Protein coding	CCDS48706	Q3UYC0	TSL:1 GENCODE basic
Ppm1h-208	ENSMUST00000162969.1	811	132aa	Protein coding	-	E0CYP3	TSL:3 GENCODE basic
Ppm1h-203	ENSMUST00000160315.1	758	No protein	Processed transcript	-	-	TSL:5
Ppm1h-205	ENSMUST00000161371.1	403	No protein	Processed transcript	-	-	TSL:3
Ppm1h-207	ENSMUST00000162853.7	3200	No protein	Retained intron	-	-	TSL:1
Ppm1h-204	ENSMUST00000161065.7	750	No protein	Retained intron	-	-	TSL:2
Ppm1h-202	ENSMUST00000159885.1	542	No protein	Retained intron	-	-	TSL:2

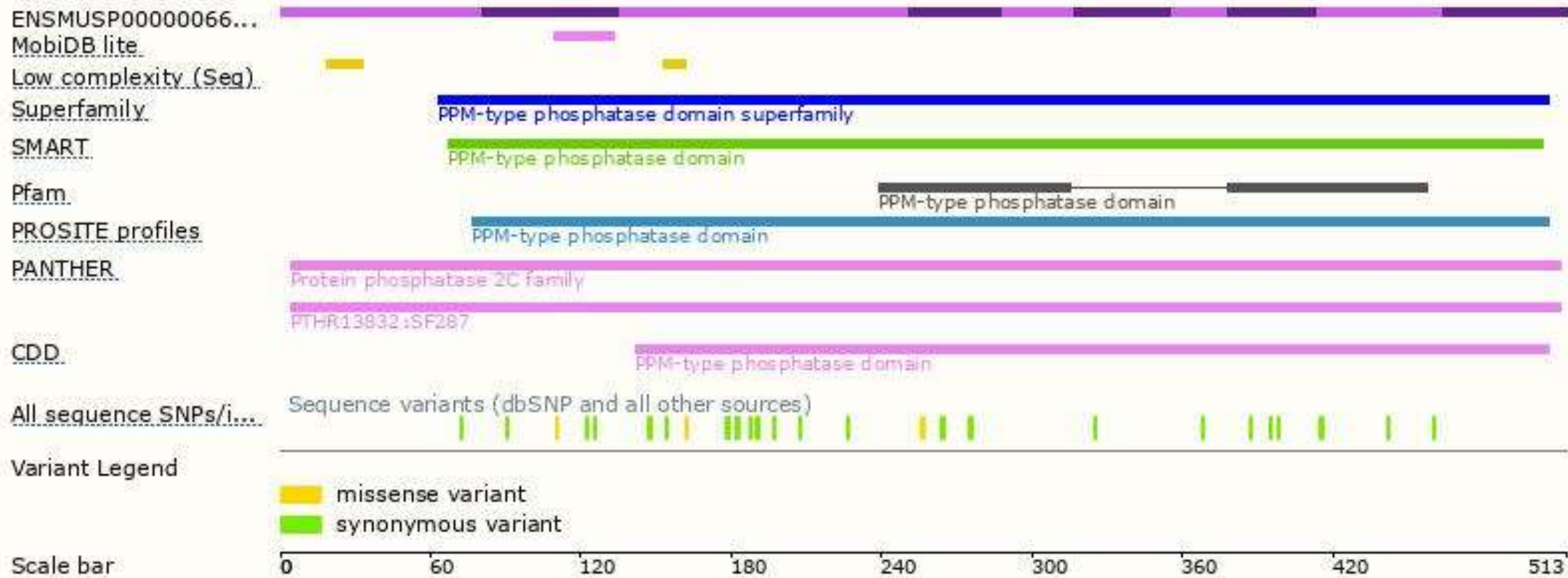
The strategy is based on the design of *Ppm1h-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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