

Pcmtd1 Cas9-KO Strategy

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Project Overview

Project Name

Pcmtd1

Project type

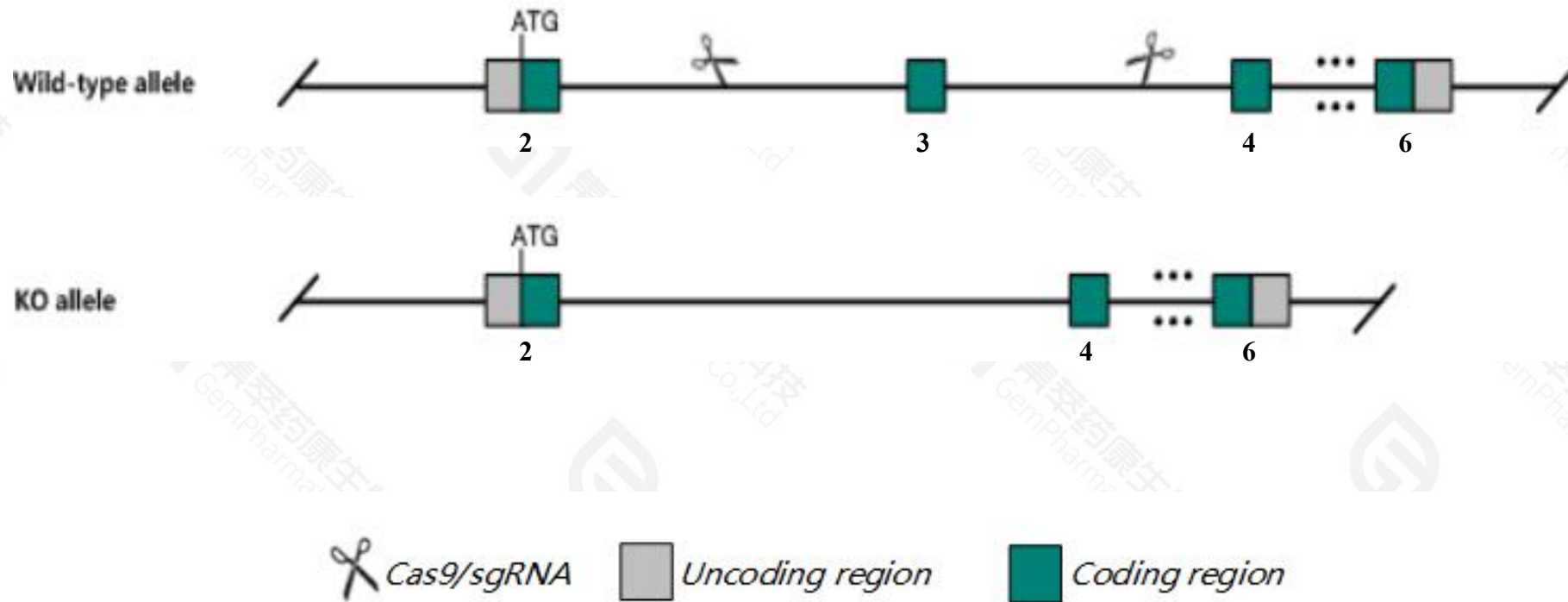
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pcmt1* gene. The schematic diagram is as follows:



- The *Pcmt1* gene has 8 transcripts. According to the structure of *Pcmt1* gene, exon3 of *Pcmt1-201*(ENSMUST00000061280.17) transcript is recommended as the knockout region. The region contains 103bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pcmt1* 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

- *Gm38372* gene will be deleted.
- The *Pcmt1* gene is located on the Chr1. 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.

Pcmdt1 protein-L-isoaspartate (D-aspartate) O-methyltransferase domain containing 1 [Mus musculus (house mouse)]

Gene ID: 319263, updated on 3-Oct-2020

Summary



Official Symbol	Pcmdt1 provided by MGI
Official Full Name	protein-L-isoaspartate (D-aspartate) O-methyltransferase domain containing 1 provided by MGI
Primary source	MGI:MGI:2441773
See related	Ensembl:ENSMUSG00000051285
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	8430411F12Rik, A030012M09Rik
Expression	Broad expression in bladder adult (RPKM 14.1), frontal lobe adult (RPKM 11.9) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

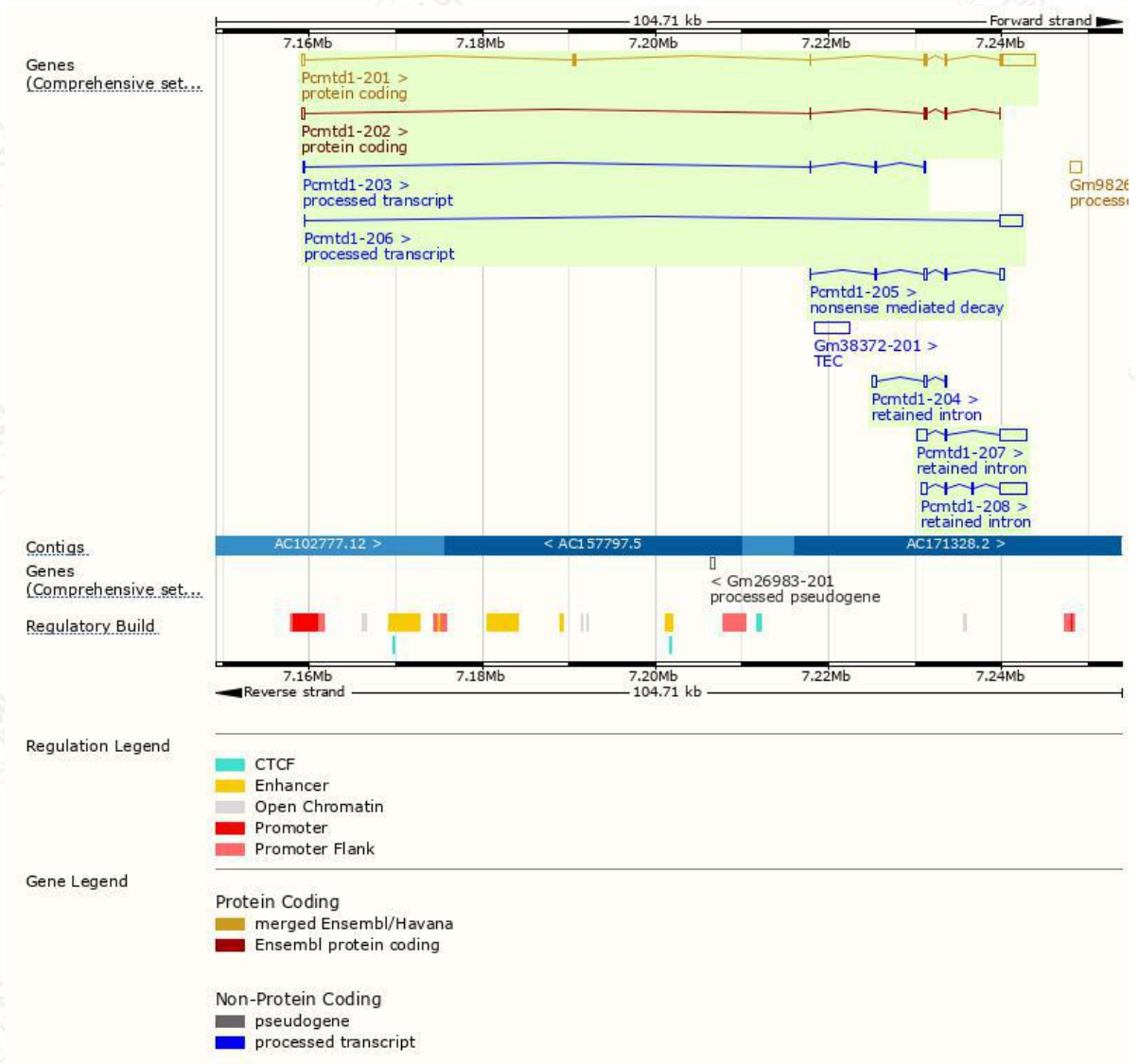
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pcmttd1-201	ENSMUST00000061280.17	5232	357aa	Protein coding	CCDS35508		TSL:1 , GENCODE basic , APPRIS P1 ,
Pcmttd1-202	ENSMUST00000182114.8	770	87aa	Protein coding	-		CDS 3' incomplete , TSL:1 ,
Pcmttd1-205	ENSMUST00000182675.8	1153	52aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:5 ,
Pcmttd1-206	ENSMUST00000182823.2	2659	No protein	Processed transcript	-		TSL:1 ,
Pcmttd1-203	ENSMUST00000182306.2	419	No protein	Processed transcript	-		TSL:5 ,
Pcmttd1-207	ENSMUST00000182892.8	4207	No protein	Retained intron	-		TSL:1 ,
Pcmttd1-208	ENSMUST00000183204.2	3986	No protein	Retained intron	-		TSL:5 ,
Pcmttd1-204	ENSMUST00000182388.8	701	No protein	Retained intron	-		TSL:2 ,

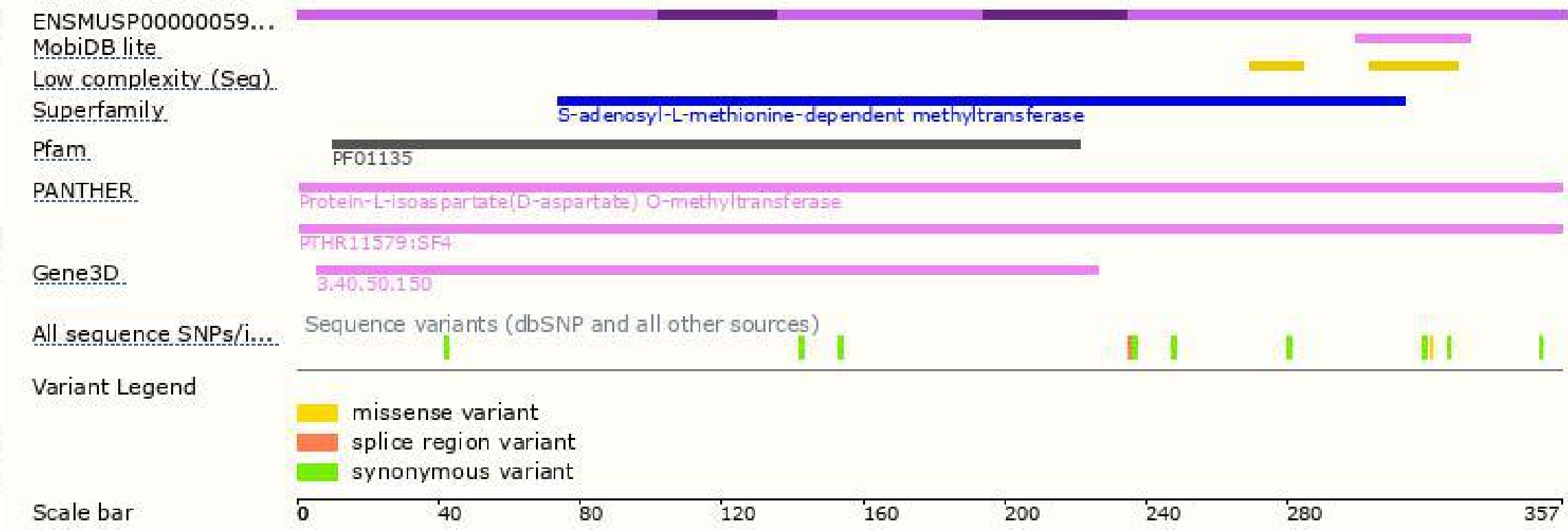
The strategy is based on the design of *Pcmttd1-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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