

Mpp7 Cas9-KO Strategy

Designer: Lingyan Wu

Reviewer: Miaomiao Cui

Design Date: 2021-4-2

Project Overview

Project Name

Mpp7

Project type

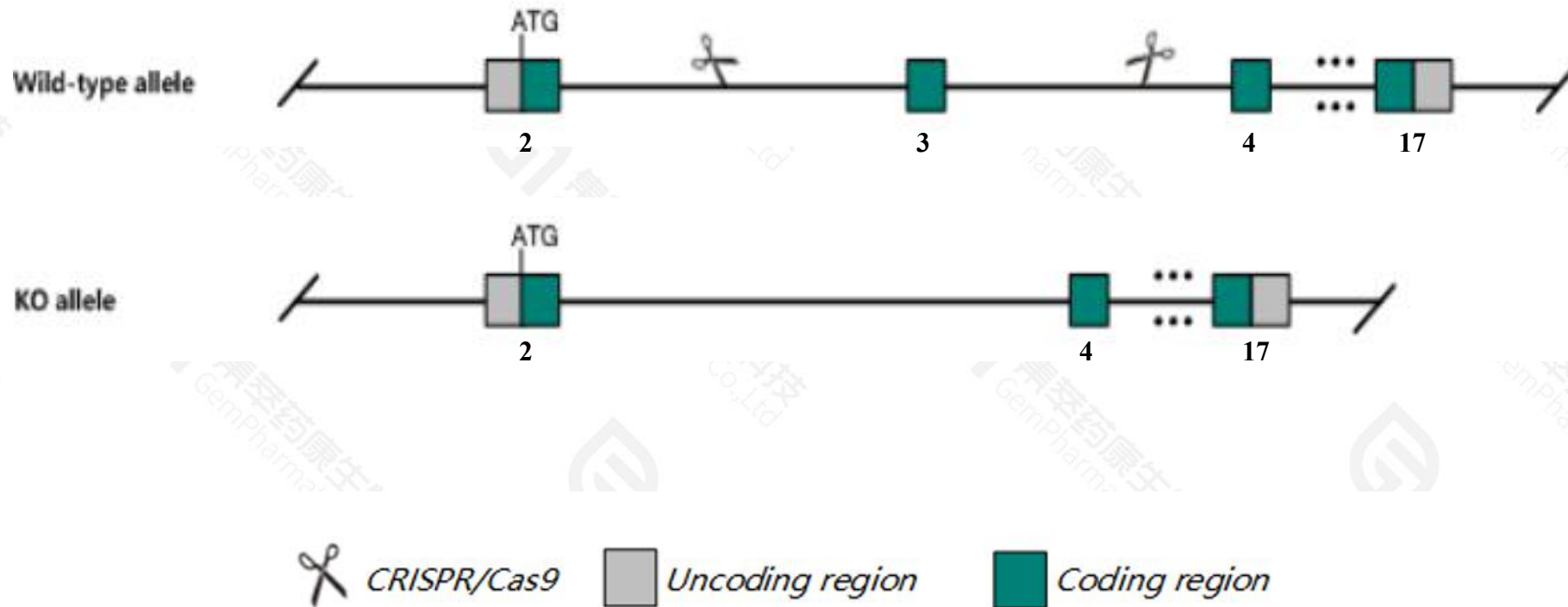
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Mpp7* gene. The schematic diagram is as follows:



- The *Mpp7* gene has 14 transcripts. According to the structure of *Mpp7* gene, exon3 of *Mpp7*-201(ENSMUST00000115869.4) transcript is recommended as the knockout region. The region contains 119bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Mpp7* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Mpp7* gene is located on the Chr18. 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.

Mpp7 membrane protein, palmitoylated 7 (MAGUK p55 subfamily member 7) [Mus musculus (house mouse)]

Gene ID: 75739, updated on 14-Jan-2021

Summary



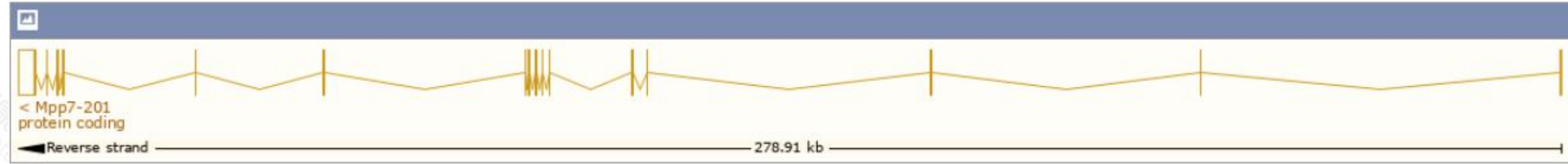
Official Symbol	Mpp7 provided by MGI
Official Full Name	membrane protein, palmitoylated 7 (MAGUK p55 subfamily member 7) provided by MGI
Primary source	MGI:MGI:1922989
See related	Ensembl:ENSMUSG00000057440
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110068J02Rik, 2810038M04Rik, 5430426E14Rik, AI415104, Gm955
Expression	Broad expression in bladder adult (RPKM 2.7), cerebellum adult (RPKM 1.8) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

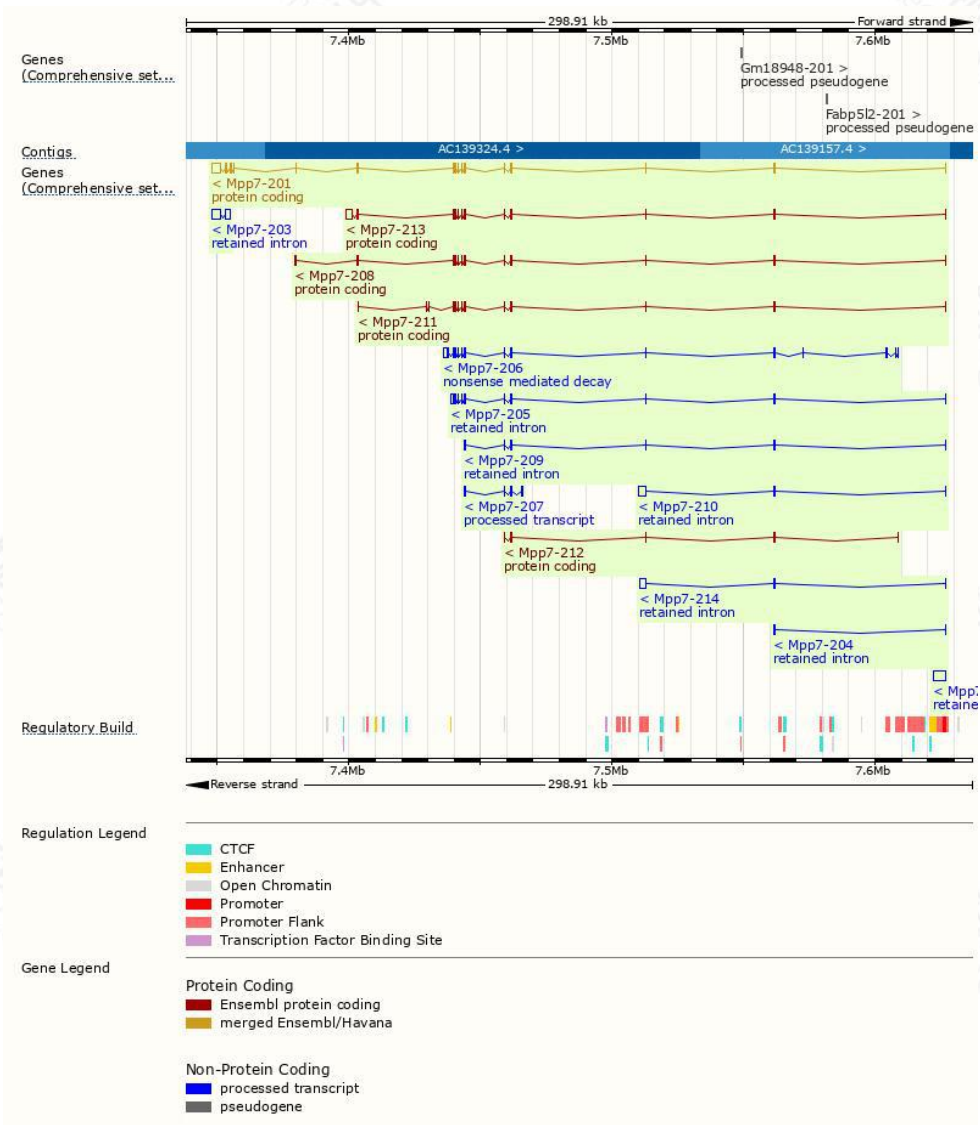
The gene has 14 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Mpp7-201	ENSMUST00000115869.4	4981	576aa	Protein coding	CCDS50217		TSL:5 , GENCODE basic , APPRIS P1 ,
Mpp7-213	ENSMUST00000235093.2	3786	392aa	Protein coding	-		GENCODE basic ,
Mpp7-208	ENSMUST00000234571.2	1784	427aa	Protein coding	-		GENCODE basic ,
Mpp7-211	ENSMUST00000234812.2	1258	354aa	Protein coding	-		CDS 3' incomplete ,
Mpp7-212	ENSMUST00000234874.2	480	104aa	Protein coding	-		CDS 3' incomplete ,
Mpp7-206	ENSMUST00000234510.2	3001	321aa	Nonsense mediated decay	-		
Mpp7-207	ENSMUST00000234522.2	609	No protein	Processed transcript	-		
Mpp7-203	ENSMUST00000234210.2	4694	No protein	Retained intron	-		
Mpp7-202	ENSMUST00000233992.2	4567	No protein	Retained intron	-		
Mpp7-210	ENSMUST00000234639.2	3294	No protein	Retained intron	-		
Mpp7-214	ENSMUST00000235095.2	2873	No protein	Retained intron	-		
Mpp7-205	ENSMUST00000234444.2	1891	No protein	Retained intron	-		
Mpp7-209	ENSMUST00000234599.2	849	No protein	Retained intron	-		
Mpp7-204	ENSMUST00000234366.2	675	No protein	Retained intron	-		

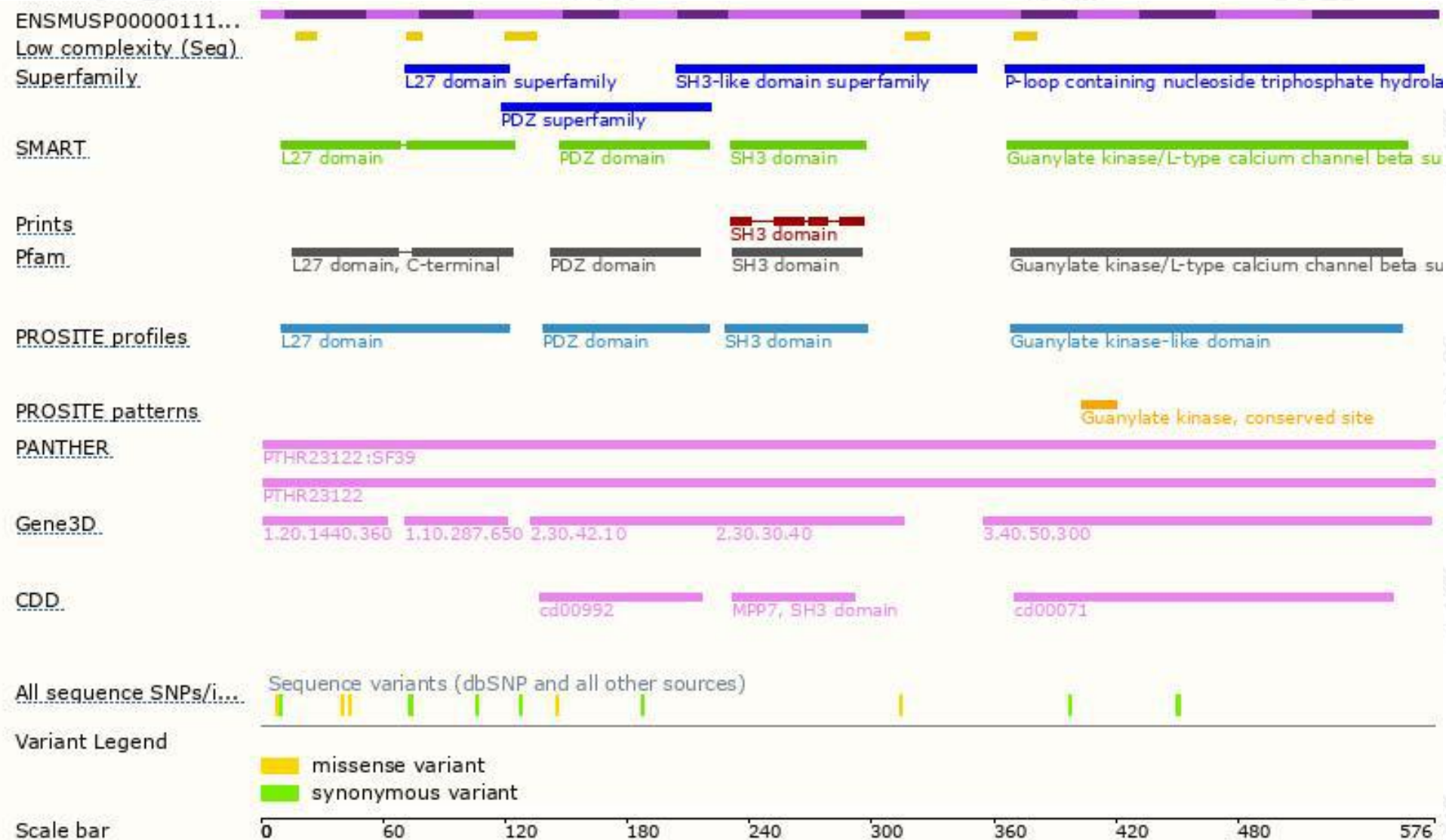
The strategy is based on the design of *Mpp7-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.
Tel: 400-9660890

