

Mpp6 Cas9-CKO Strategy

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Project Overview

Project Name

Mpp6

Project type

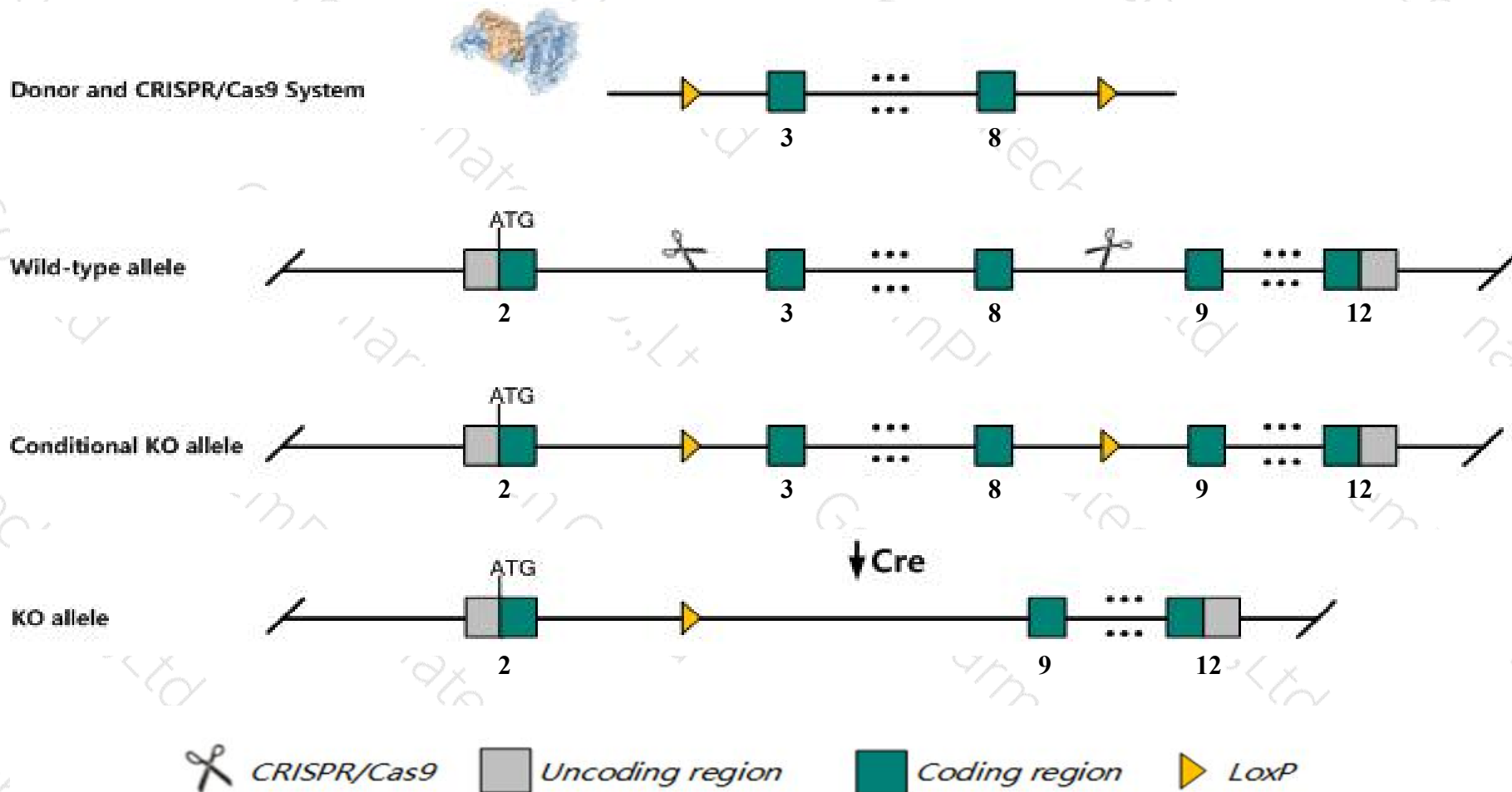
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Mpp6* gene. The schematic diagram is as follows:



Technical routes

- The *Mpp6* gene has 9 transcripts. According to the structure of *Mpp6* gene, exon3-exon8 of *Mpp6*-209 (ENSMUST00000204545.2) transcript is recommended as the knockout region. The region contains 832bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Mpp6* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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.

Notice

- The *Mpp6* gene is located on the Chr6. 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)

Mpp6 membrane protein, palmitoylated 6 (MAGUK p55 subfamily member 6) [Mus musculus (house mouse)]

Gene ID: 56524, updated on 3-Feb-2019

Summary



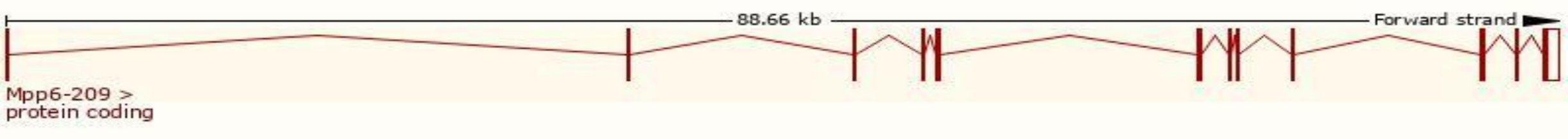
Official Symbol	Mpp6 provided by MGI
Official Full Name	membrane protein, palmitoylated 6 (MAGUK p55 subfamily member 6) provided by MGI
Primary source	MGI:MGI:1927340
See related	Ensembl:ENSMUSG00000038388
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	P55t, Pals2
Expression	Broad expression in testis adult (RPKM 14.9), CNS E11.5 (RPKM 12.6) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

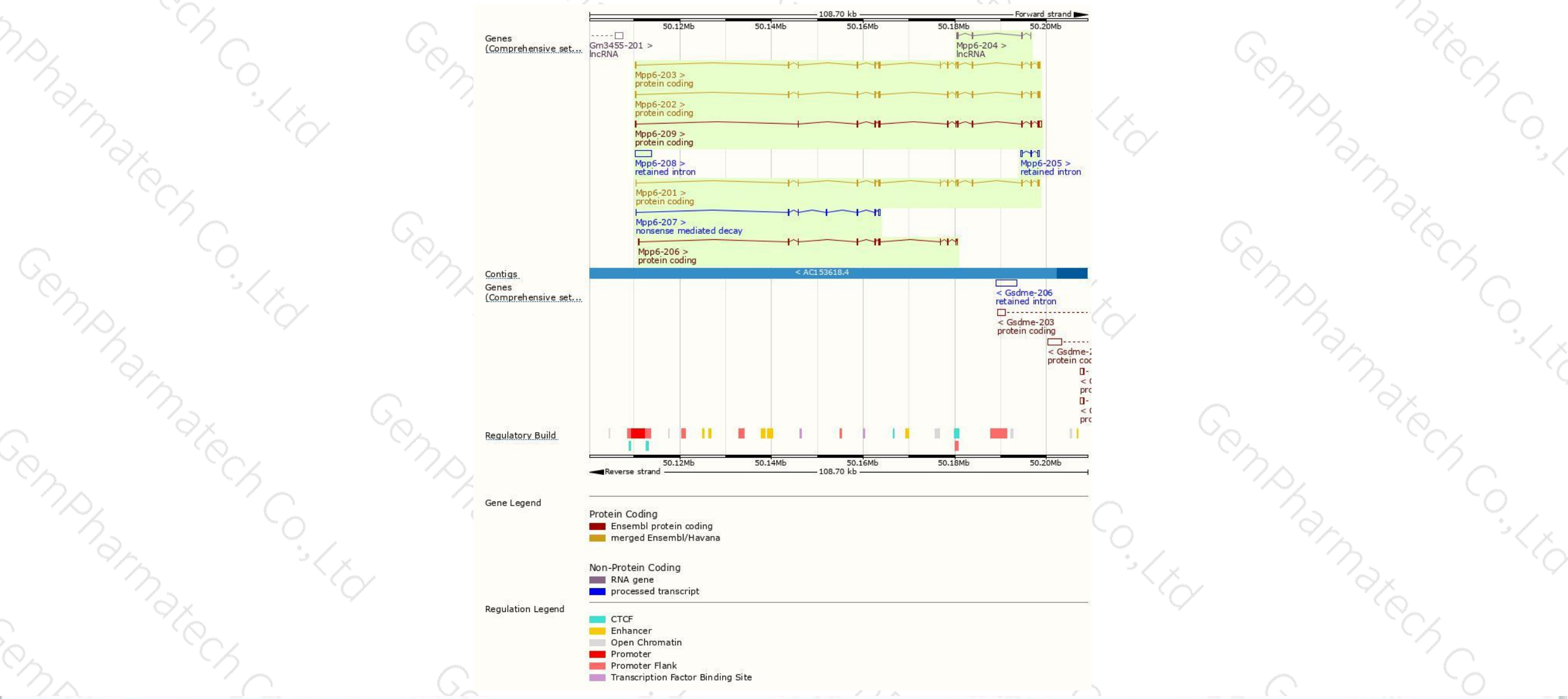
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Mpp6-209	ENSMUST00000204545.2	2418	539aa	Protein coding	CCDS20128	B9EHZ5 Q9JLB0	TSL:5 GENCODE basic APPRIS P3
Mpp6-203	ENSMUST00000166318.7	2222	553aa	Protein coding	CCDS51770	Q3UN60 Q9JLB0	TSL:1 GENCODE basic APPRIS ALT1
Mpp6-202	ENSMUST00000036236.14	2161	539aa	Protein coding	CCDS20128	B9EHZ5 Q9JLB0	TSL:1 GENCODE basic APPRIS P3
Mpp6-201	ENSMUST00000036225.14	1896	553aa	Protein coding	CCDS51770	Q3UN60 Q9JLB0	TSL:1 GENCODE basic APPRIS ALT1
Mpp6-206	ENSMUST00000167628.1	1281	315aa	Protein coding	-	E9PWC5	CDS 3' incomplete TSL:1
Mpp6-207	ENSMUST00000171601.7	845	48aa	Nonsense mediated decay	-	E9Q2R8	TSL:3
Mpp6-204	ENSMUST00000167063.1	637	No protein	Processed transcript	-	-	TSL:5
Mpp6-208	ENSMUST00000203415.1	3523	No protein	Retained intron	-	-	TSL:NA
Mpp6-205	ENSMUST00000167319.1	616	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Mpp6-209* 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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