

***Frmd8* Cas9-KO Strategy**

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Project Overview

Project Name

Frmd8

Project type

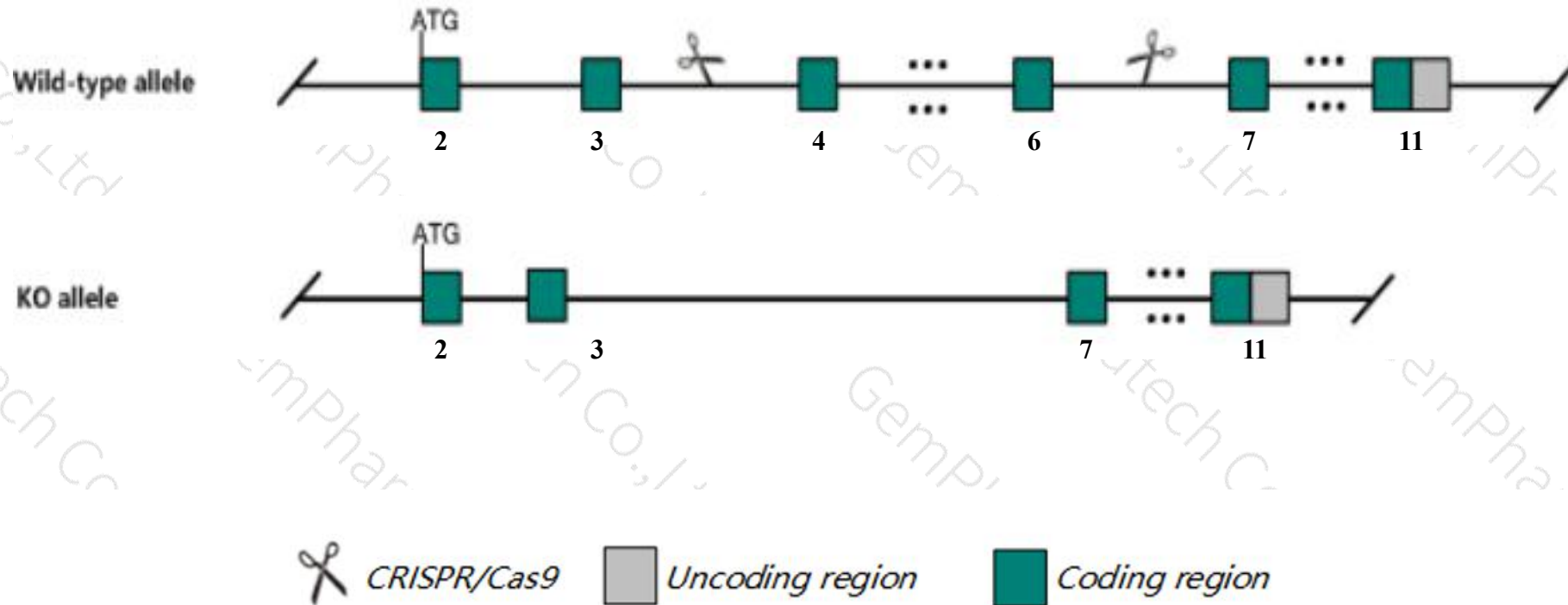
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Frmd8* gene. The schematic diagram is as follows:



- The *Frmd8* gene has 4 transcripts. According to the structure of *Frmd8* gene, exon4-exon6 of *Frmd8*-201(ENSMUST00000025728.12) transcript is recommended as the knockout region. The region contains 328bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Frmd8* 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.

- According to the existing MGI data, mice homozygous for a knock-out allele are viable and fertile.
- The *Frmd8* gene is located on the Chr19. 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)

Frmd8 FERM domain containing 8 [Mus musculus (house mouse)]

Gene ID: 67457, updated on 13-Mar-2020

Summary



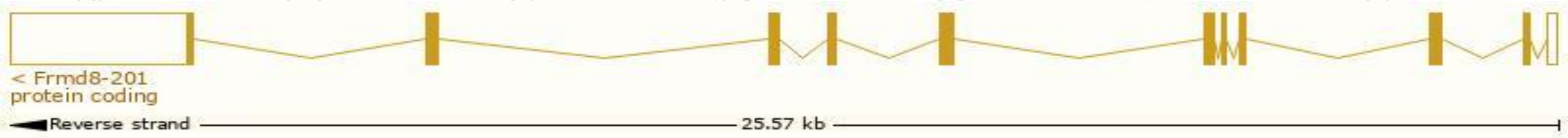
Official Symbol	Frmd8 provided by MGI
Official Full Name	FERM domain containing 8 provided by MGI
Primary source	MGI:MGI:1914707
See related	Ensembl:ENSMUSG00000024816
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1200004M23Rik, 2310035N23Rik, 4931429L16Rik, AU018809, iTAP
Expression	Ubiquitous expression in thymus adult (RPKM 47.8), small intestine adult (RPKM 26.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

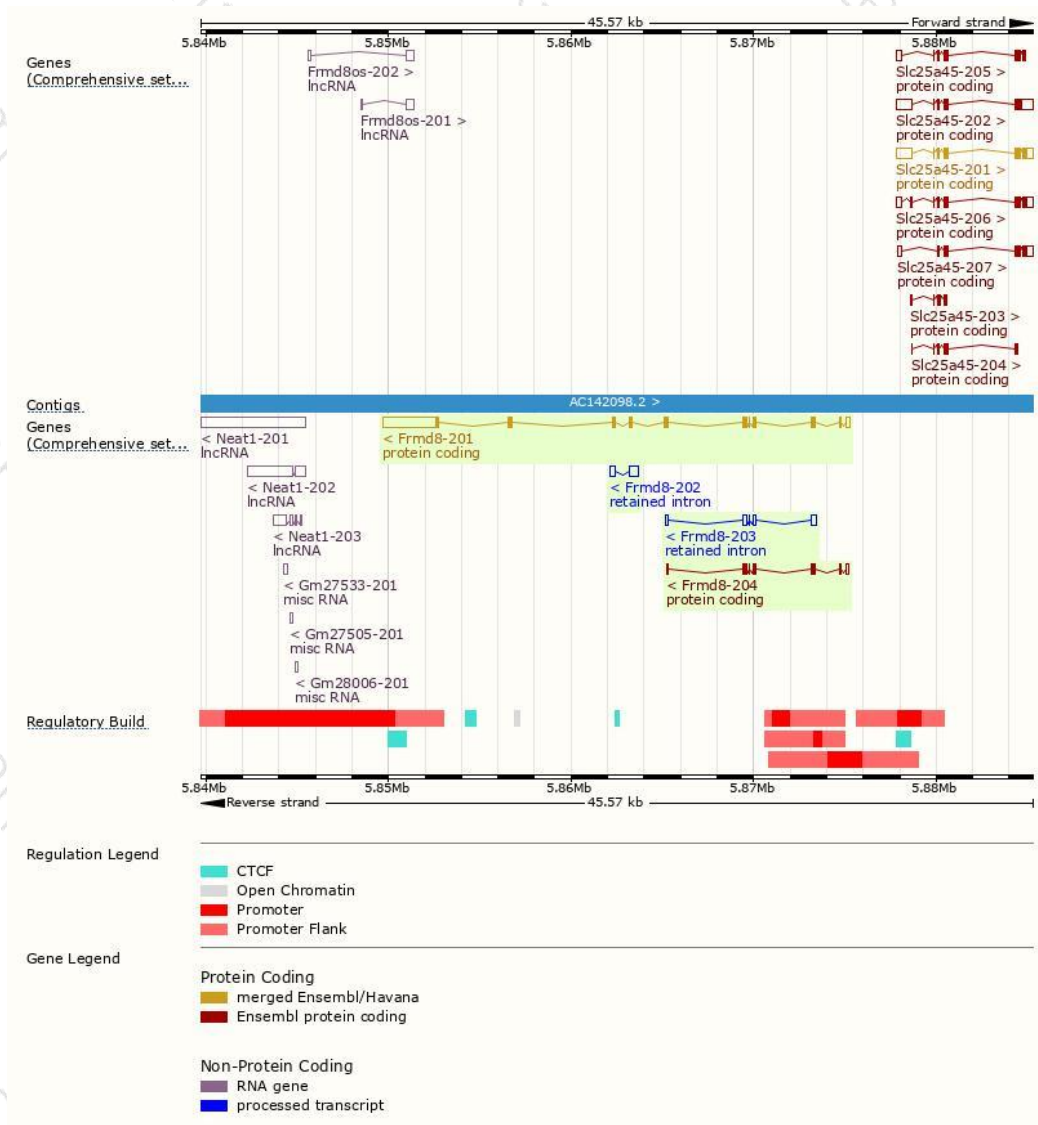
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Frmd8-201	ENSMUST00000025728.12	4504	466aa	Protein coding	CCDS29481	Q3UFK8	TSL:1 GENCODE basic APPRIS P1
Frmd8-204	ENSMUST00000155227.1	768	201aa	Protein coding	-	D3Z5B2	CDS 3' incomplete TSL:5
Frmd8-202	ENSMUST00000133729.1	738	No protein	Retained intron	-	-	TSL:2
Frmd8-203	ENSMUST00000145026.1	700	No protein	Retained intron	-	-	TSL:3

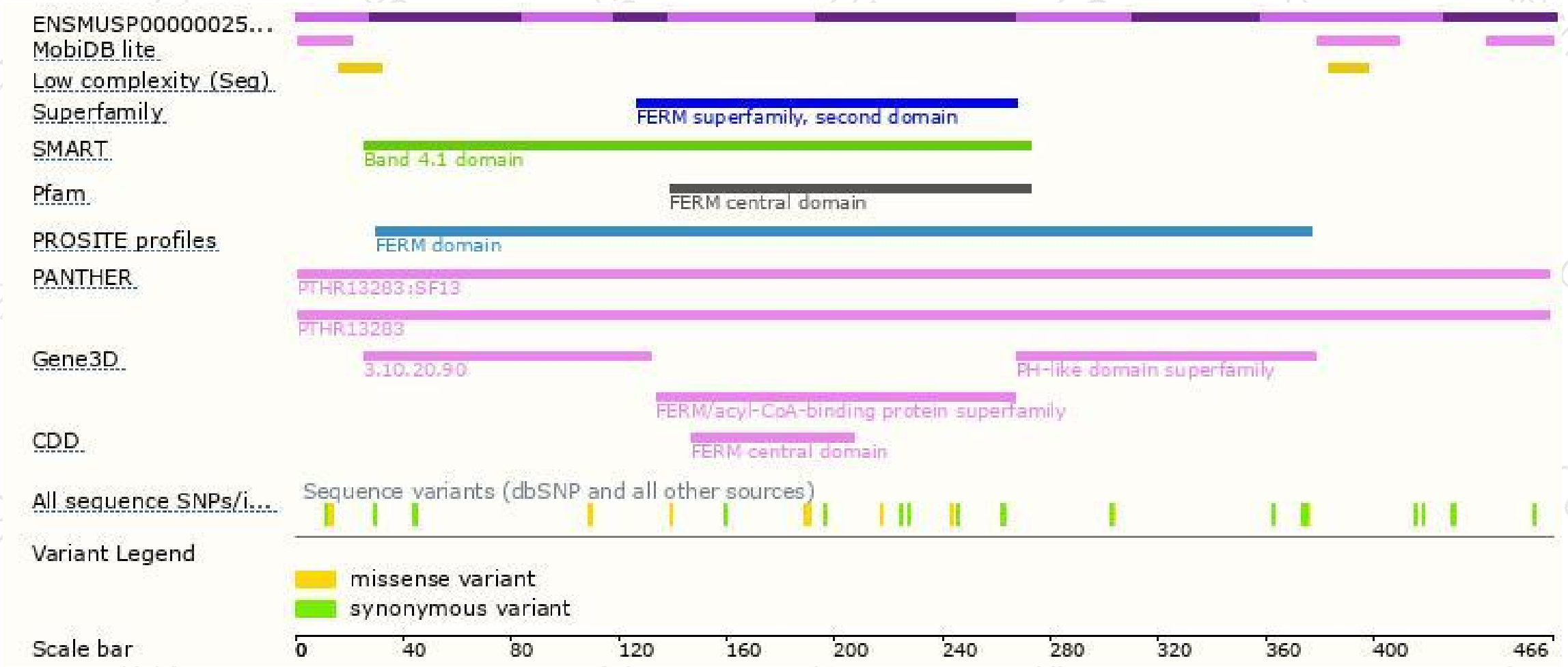
The strategy is based on the design of *Frmd8-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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