

***Fam83e* Cas9-CKO Strategy**

Designer:Xiaojing Li

Reviewer:JiaYu

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Project Overview

Project Name

Fam83e

Project type

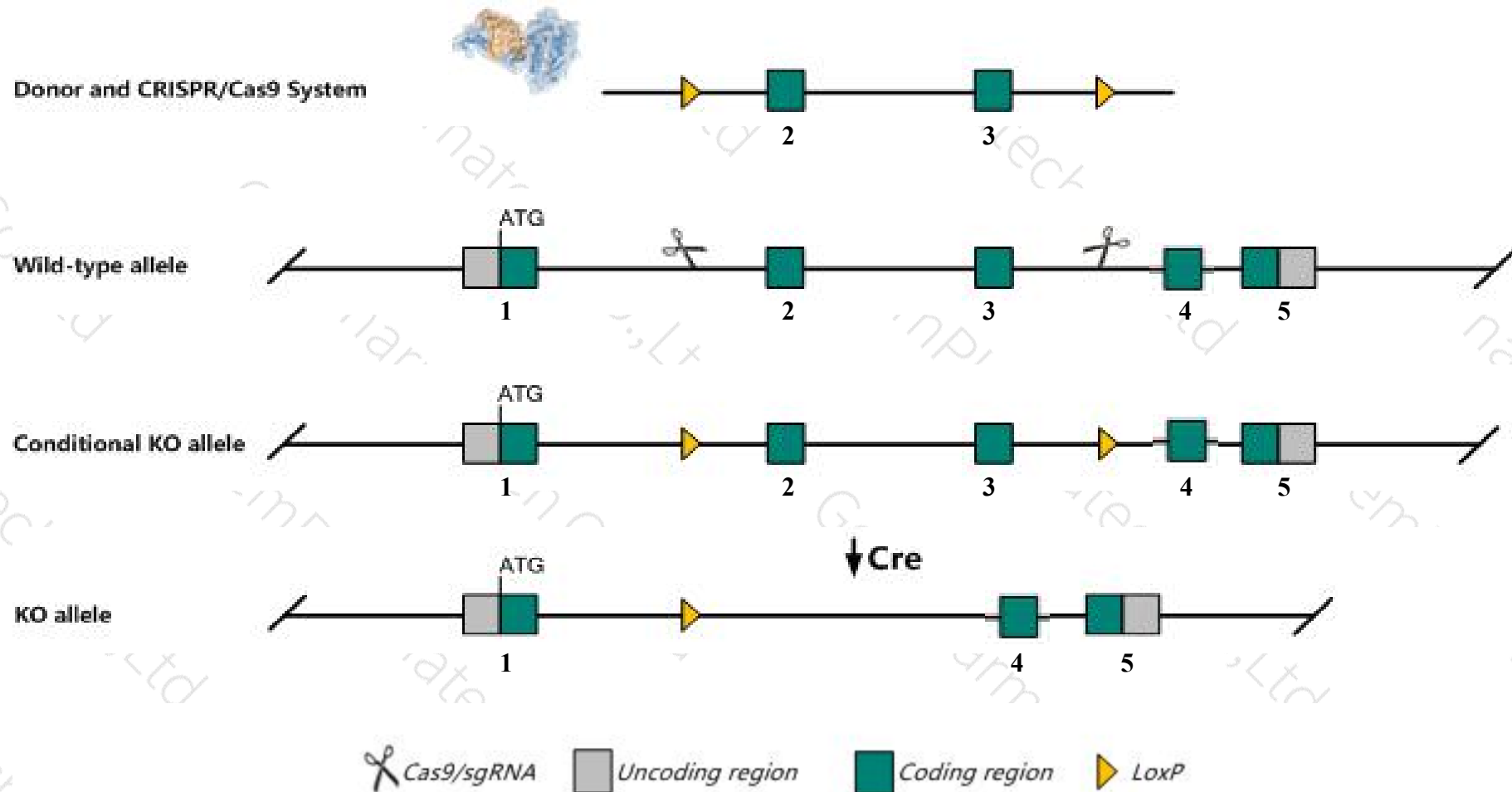
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fam83e* gene. The schematic diagram is as follows:



Technical routes

- The *Fam83e* gene has 3 transcripts. According to the structure of *Fam83e* gene, exon2-exon3 of *Fam83e-201* (ENSMUST00000129507.4) transcript is recommended as the knockout region. The region contains 293bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fam83e* 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 *Fam83e* gene is located on the Chr7. 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.
- The insertion of 3'loxP will destroy noncoding *Fam83e-202* transcript at the same time.
- 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)

Fam83e family with sequence similarity 83, member E [*Mus musculus* (house mouse)]

Gene ID: 73813, updated on 12-Aug-2019

Summary

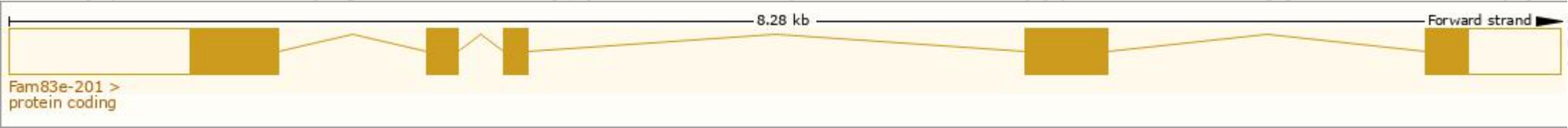
Official Symbol	Fam83e provided by MGI
Official Full Name	family with sequence similarity 83, member E provided by MGI
Primary source	MGI:MGI:1921063
See related	Ensembl:ENSMUSG00000054161
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4930403C10Rik
Expression	Biased expression in colon adult (RPKM 185.7), stomach adult (RPKM 49.2) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

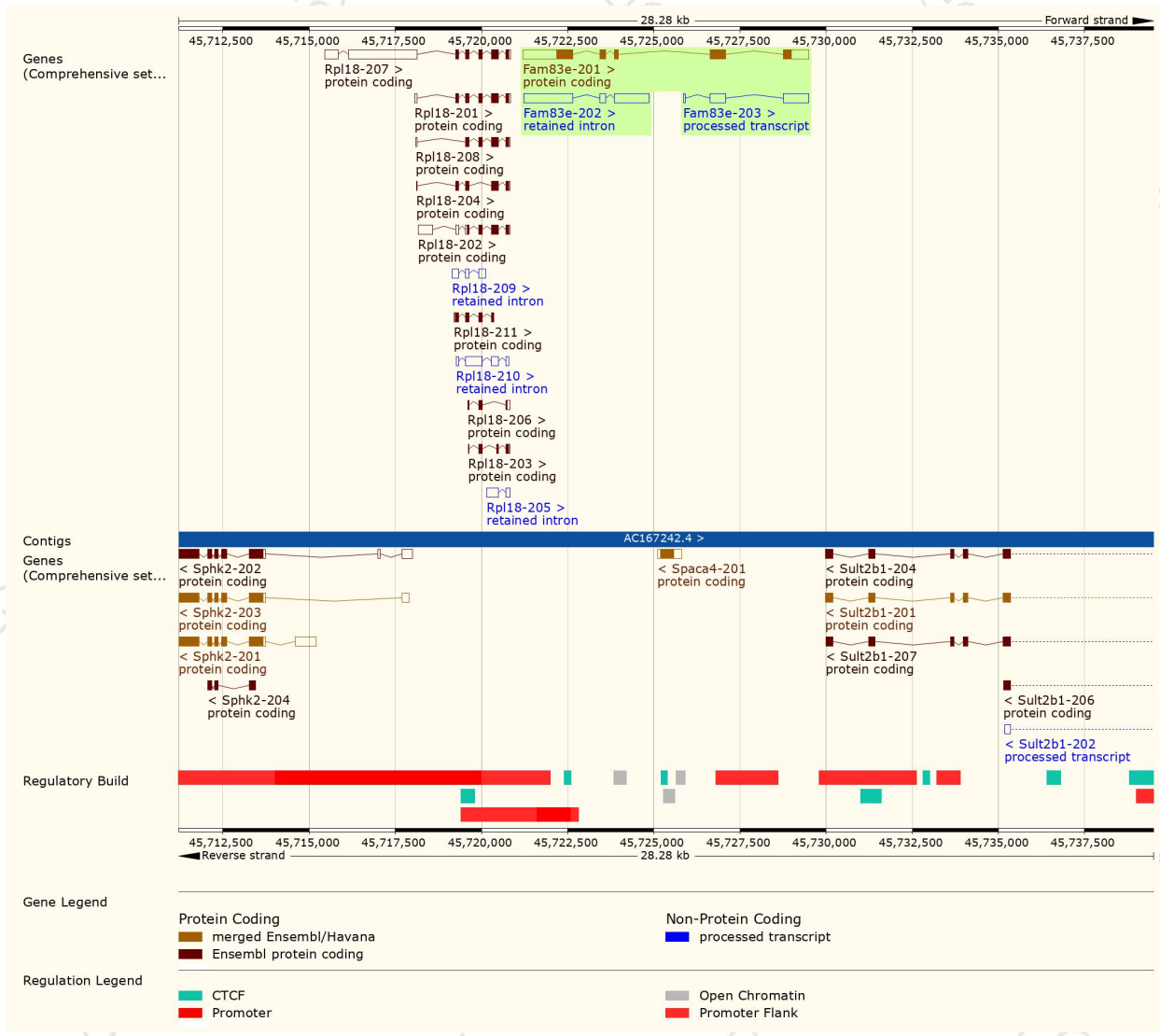
The gene has 3 transcripts,all transcripts are shown below:

Name ▲	Transcript ID ▲	bp ▲	Protein ▲	Biotype ▲	CCDS ▲	UniProt ▲	Flags ▲
Fam83e-201	ENSMUST00000129507.4	2908	481aa	Protein coding	CCDS39959	Q80XS7	TSL:1 GENCODE basic APPRIS P1
Fam83e-202	ENSMUST00000210434.1	2609	No protein	Retained intron	-	-	TSL:1
Fam83e-203	ENSMUST00000211124.1	1223	No protein	Processed transcript	-	-	TSL:1

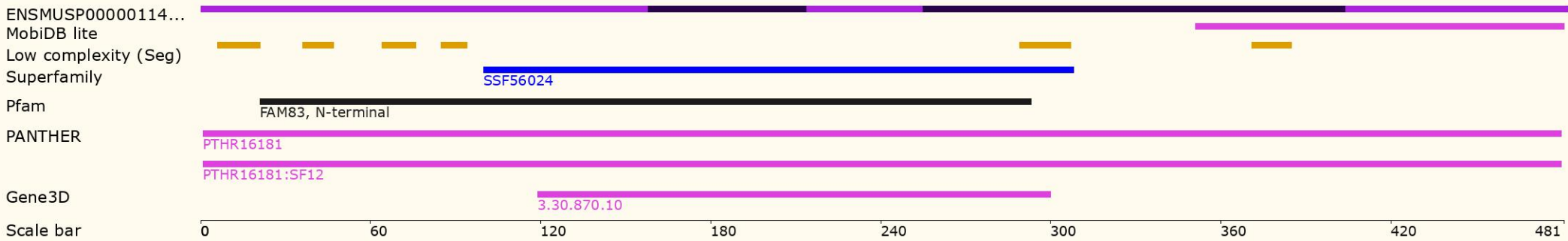
The strategy is based on the design of *Fam83e-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

