

Megf6 Cas9-CKO Strategy

Designer: Zihe Cui

Reviewer: Huimin Su

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Project Overview

Project Name

Megf6

Project type

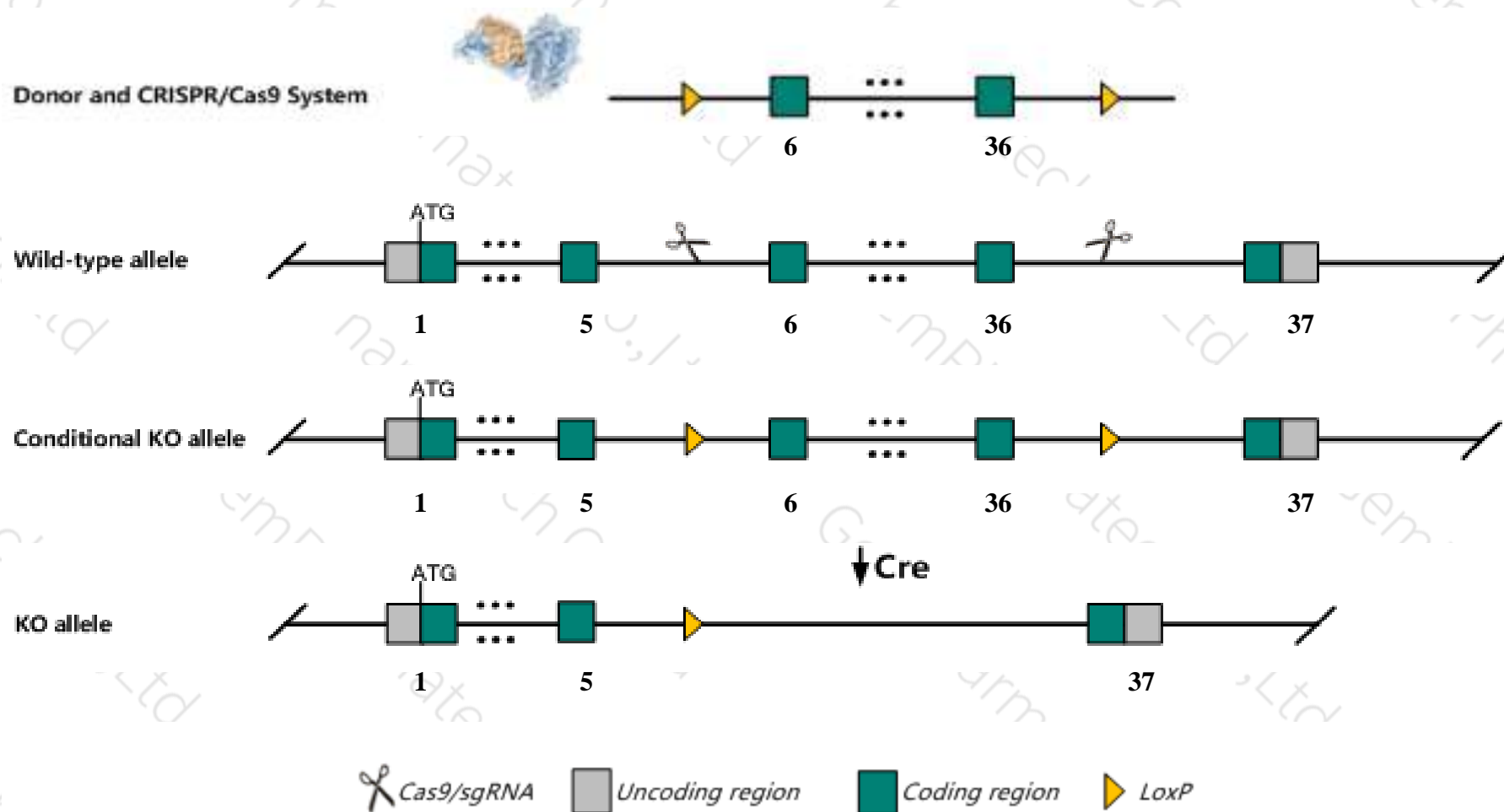
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Megf6* gene. The schematic diagram is as follows:



- The *Megf6* gene has 7 transcripts. According to the structure of *Megf6* gene, exon6-exon36 of *Megf6*-201(ENSMUST00000030897.14) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Megf6* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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 *Megf6* gene is located on the Chr4. 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)

Megf6 multiple EGF-like-domains 6 [Mus musculus (house mouse)]

Gene ID: 230971, updated on 13-Mar-2020

Summary



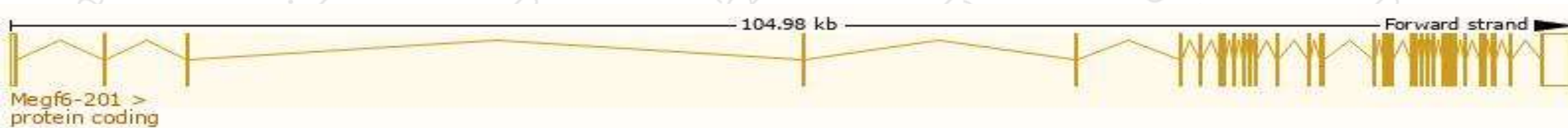
Official Symbol	Megf6 provided by MGI
Official Full Name	multiple EGF-like-domains 6 provided by MGI
Primary source	MGI:MGI:1919351
See related	Ensembl:ENSMUSG00000057751
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2600001P17Rik, Egf3
Expression	Broad expression in lung adult (RPKM 18.7), limb E14.5 (RPKM 18.6) and 15 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

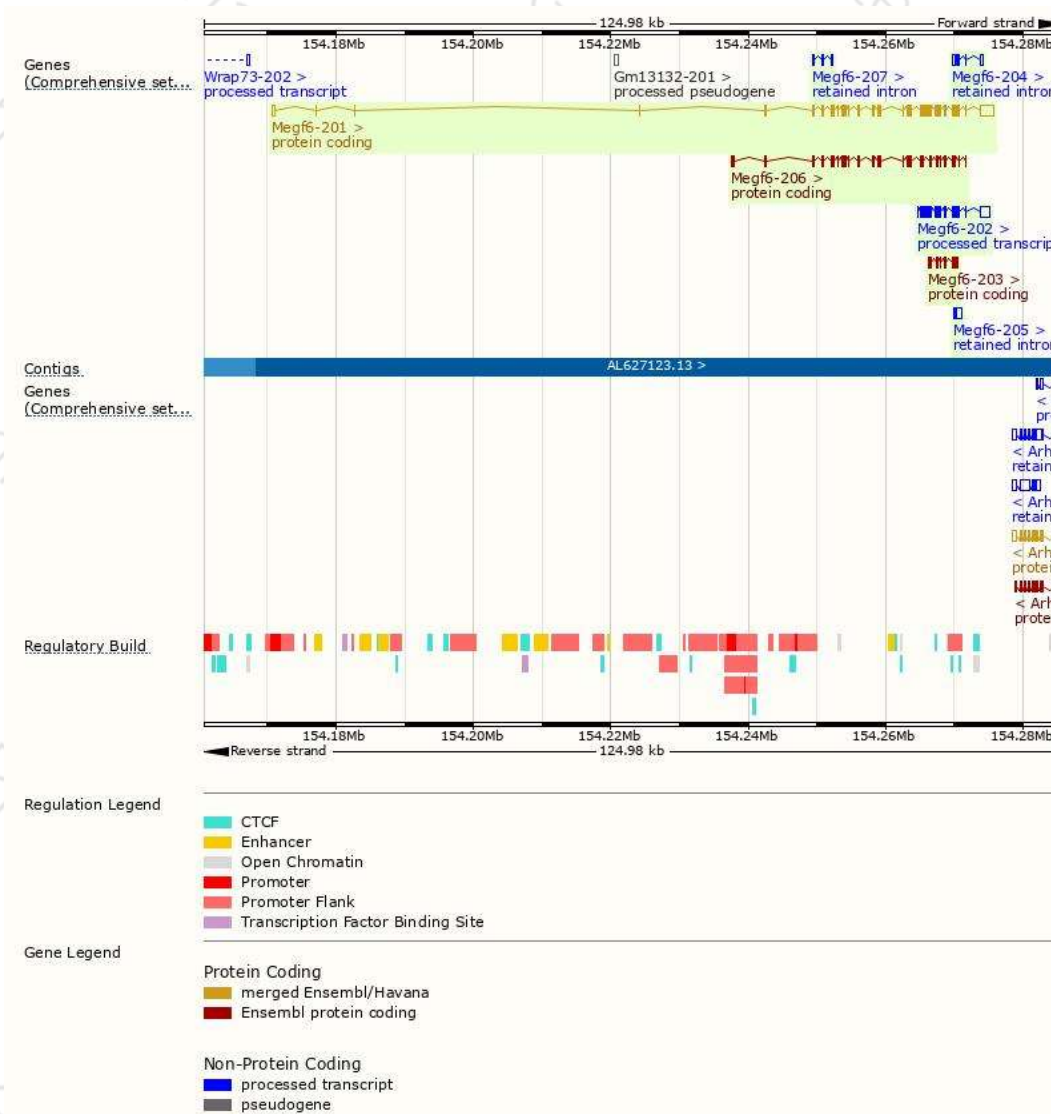
The gene has 7 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Megf6-201	ENSMUST00000030897.14	6851	1572aa	Protein coding	CCDS51398	A0A0A0MQ83	TSL:5 GENCODE basic APPRIS P1
Megf6-206	ENSMUST00000152159.7	3770	1192aa	Protein coding	-	B1ASH4	CDS 3' incomplete TSL:5
Megf6-203	ENSMUST00000128700.2	995	332aa	Protein coding	-	F6YCL7	CDS 5' and 3' incomplete TSL:5
Megf6-202	ENSMUST00000127088.7	3378	No protein	Processed transcript	-	-	TSL:1
Megf6-204	ENSMUST00000138945.1	944	No protein	Retained intron	-	-	TSL:3
Megf6-205	ENSMUST00000142110.1	768	No protein	Retained intron	-	-	TSL:2
Megf6-207	ENSMUST00000183595.1	469	No protein	Retained intron	-	-	TSL:2

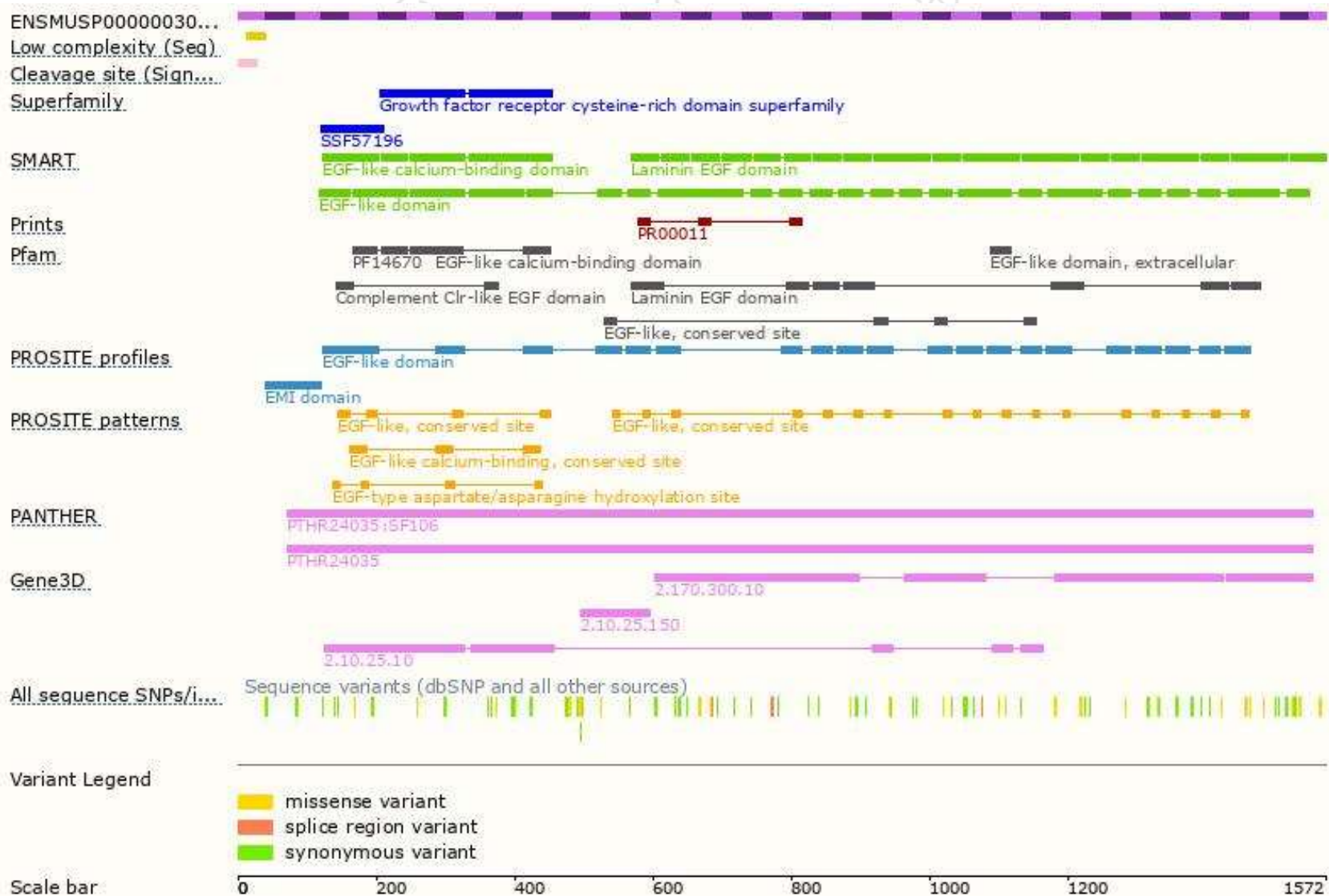
The strategy is based on the design of *Megf6-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

