

Efcc1 Cas9-CKO Strategy

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Project Overview

Project Name

Efcc1

Project type

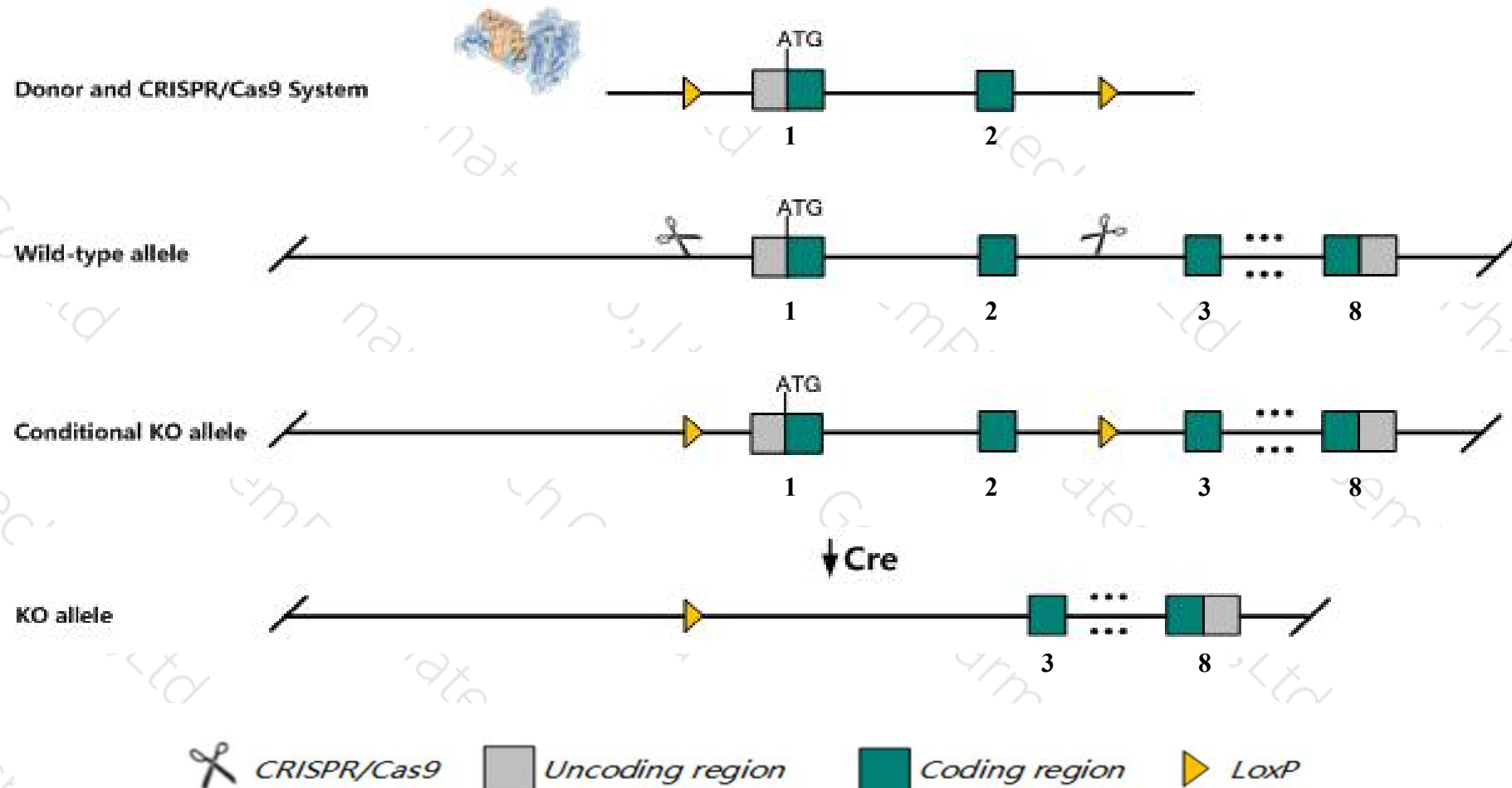
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Efcc1* gene. The schematic diagram is as follows:



Technical routes

- The *Efcc1* gene has 5 transcripts. According to the structure of *Efcc1* gene, exon1-exon2 of *Efcc1*-202(ENSMUST00000159570.8) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Efcc1* 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 *Efcc1* 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)

Efcc1 EF hand and coiled-coil domain containing 1 [Mus musculus (house mouse)]

Gene ID: 58229, updated on 13-Mar-2020

Summary



Official Symbol	Efcc1 provided by MGI
Official Full Name	EF hand and coiled-coil domain containing 1 provided by MGI
Primary source	MGI:MGI:3611451
See related	Ensembl:ENSMUSG00000068263
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Ccdc48
Expression	Ubiquitous expression in lung adult (RPKM 3.0), bladder adult (RPKM 1.5) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

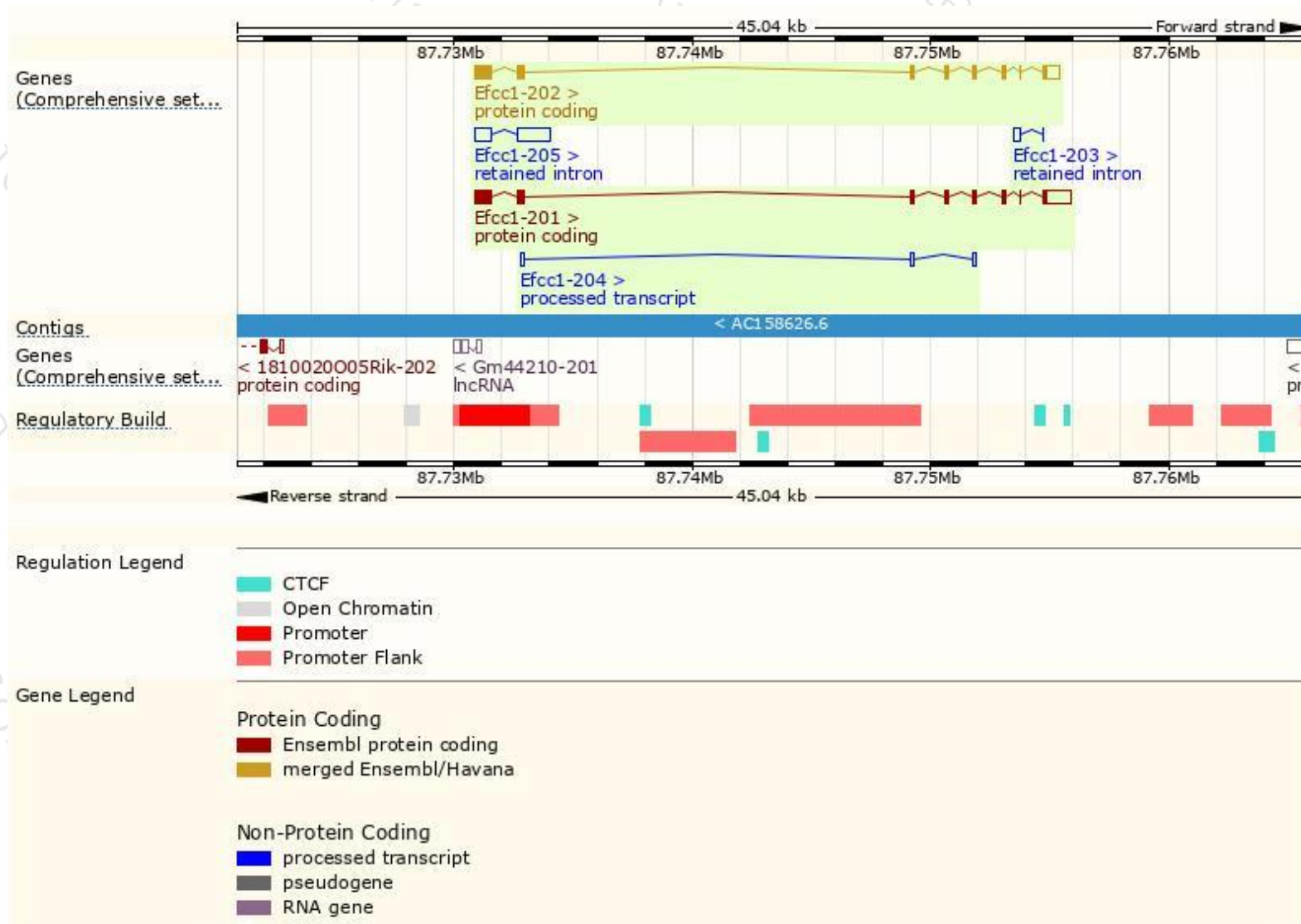
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Efcc1-202	ENSMUST00000159570.8	2293	558aa	Protein coding	CCDS51840	Q9JJF6	TSL:5 GENCODE basic APPRIS P2
Efcc1-201	ENSMUST00000032132.8	2729	559aa	Protein coding	-	A0A0A0MQ84	TSL:5 GENCODE basic APPRIS ALT2
Efcc1-204	ENSMUST00000159956.1	407	No protein	Processed transcript	-	-	TSL:3
Efcc1-205	ENSMUST00000160743.1	2016	No protein	Retained intron	-	-	TSL:2
Efcc1-203	ENSMUST00000159681.1	323	No protein	Retained intron	-	-	TSL:3

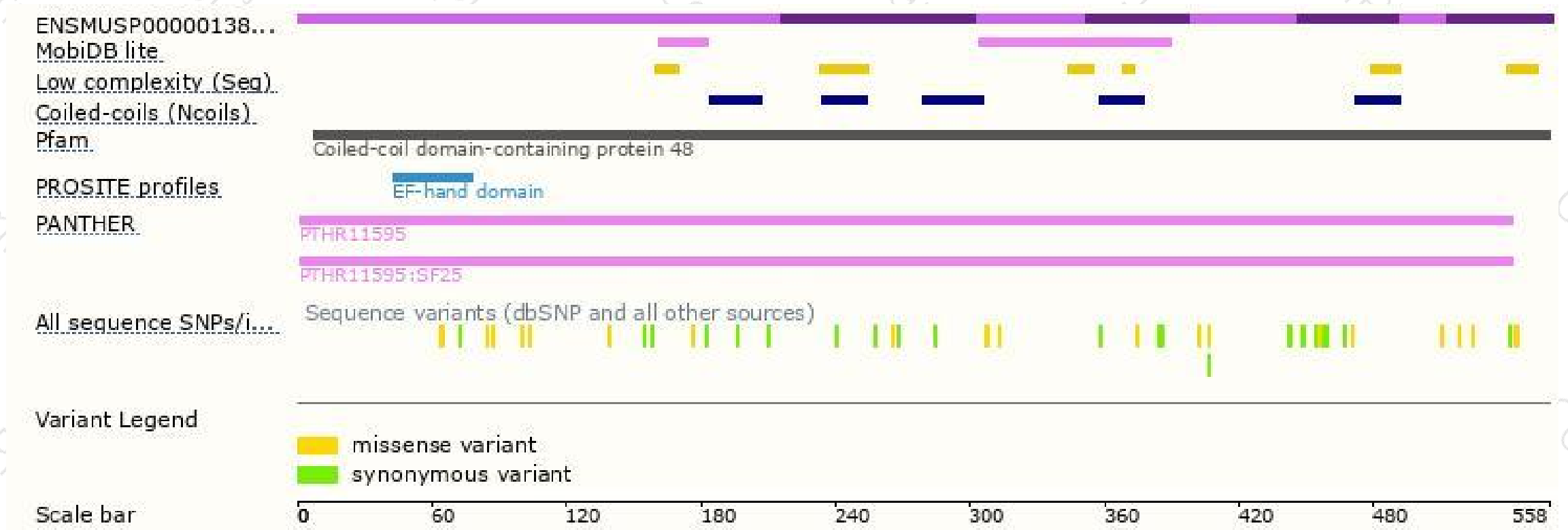
The strategy is based on the design of *Efcc1-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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