

E2f8 Cas9-CKO Strategy

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Project Overview

Project Name

E2f8

Project type

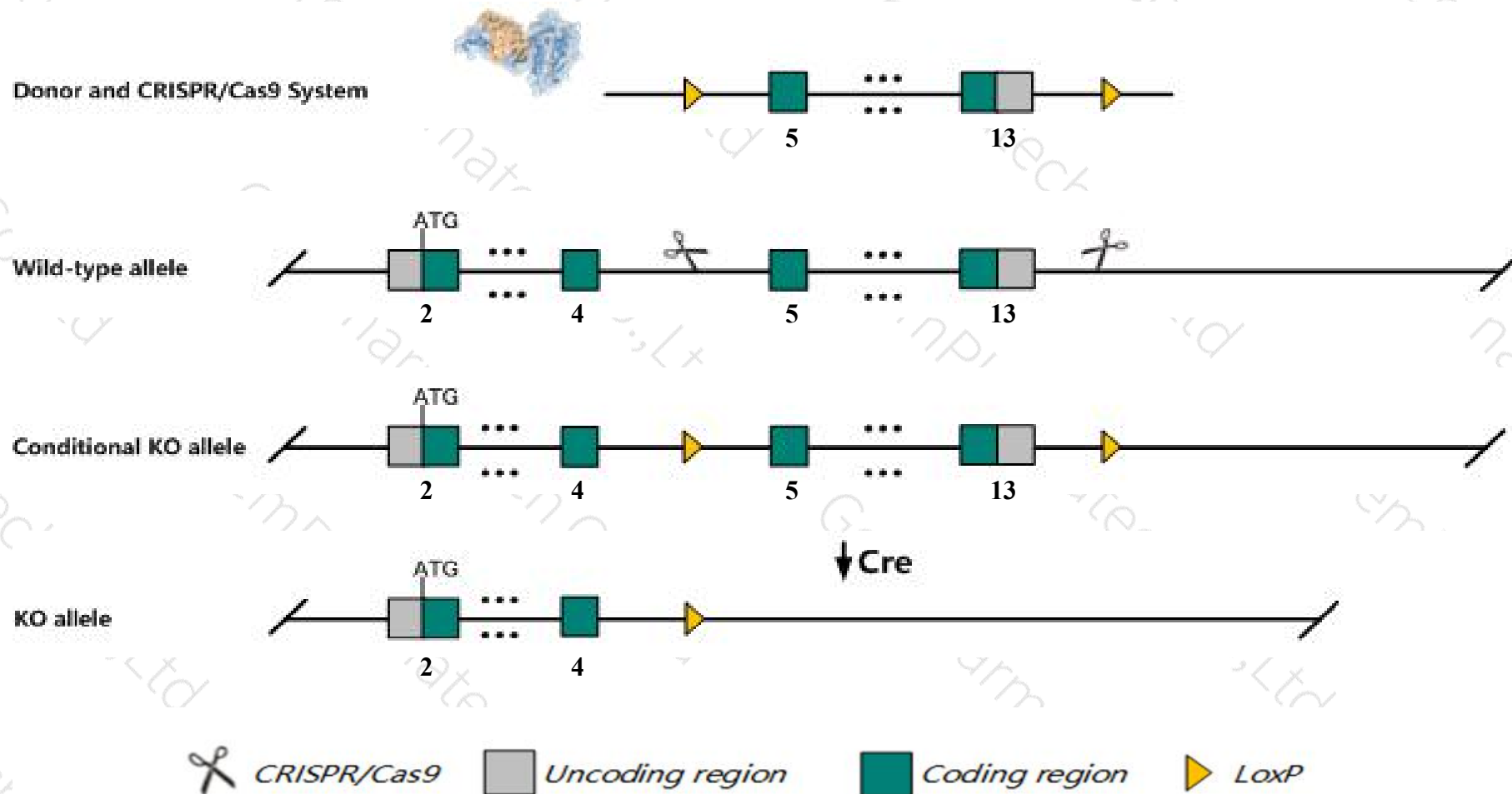
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *E2f8* gene. The schematic diagram is as follows:



Technical routes

- The *E2f8* gene has 4 transcripts. According to the structure of *E2f8* gene, exon5-exon13 of *E2f8-201* (ENSMUST00000058745.14) transcript is recommended as the knockout region. The region contains 2132bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *E2f8* 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.

- According to the existing MGI data, Mice homozygous for a knock-out allele develop normally through puberty and live to old age.
- The knockout area of this strategy is about 2KB from the 5 ends of Gm2788, which may affect its regulation.
- The *E2f8* 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.
- 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)

E2f8 E2F transcription factor 8 [*Mus musculus* (house mouse)]

Gene ID: 108961, updated on 24-Oct-2019

Summary

Official Symbol E2f8 provided by [MGI](#)

Official Full Name E2F transcription factor 8 provided by [MGI](#)

Primary source [MGI:MGI:1922038](#)

See related [Ensembl:ENSMUSG00000046179](#)

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 AA410048; 4432406C08Rik

Expression Broad expression in liver E14.5 (RPKM 17.2), liver E14 (RPKM 16.7) and 16 other tissues [See more](#)

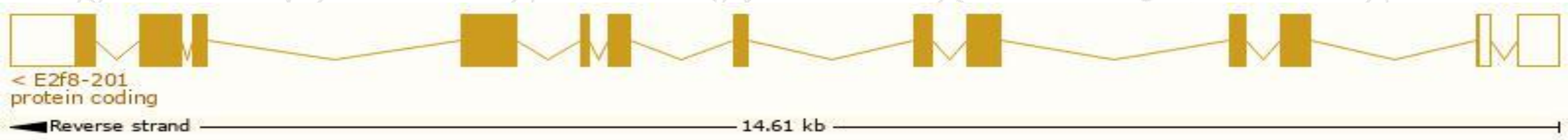
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

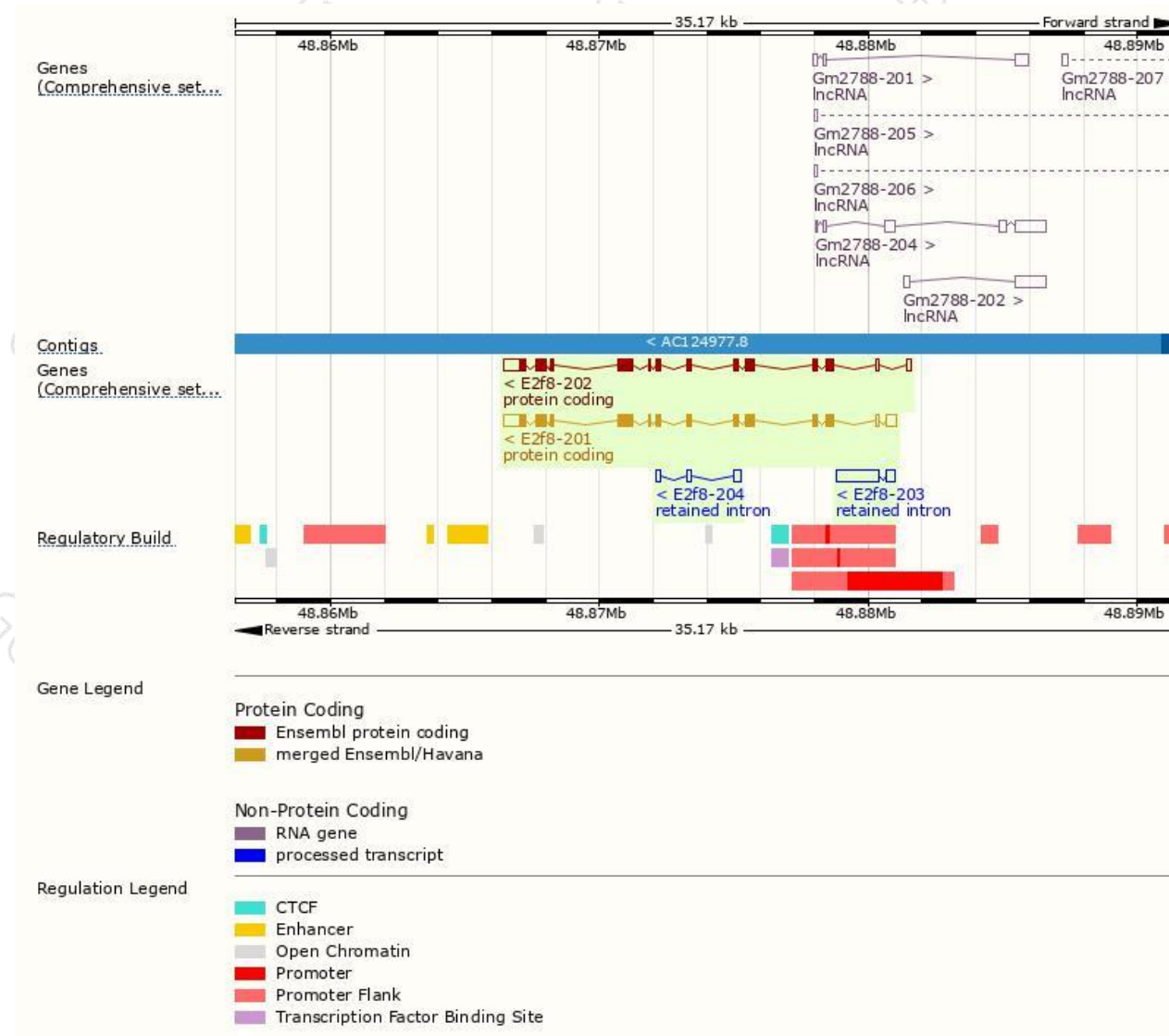
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
E2f8-201	ENSMUST00000058745.14	3691	860aa	Protein coding	CCDS39967	Q58FA4	TSL:1 GENCODE basic APPRIS P1
E2f8-202	ENSMUST00000119223.1	3499	860aa	Protein coding	CCDS39967	Q58FA4	TSL:1 GENCODE basic APPRIS P1
E2f8-203	ENSMUST00000136142.1	1913	No protein	Retained intron	-	-	TSL:1
E2f8-204	ENSMUST00000151139.1	598	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *E2f8-201* 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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