

C1qtnf4 Cas9-CKO Strategy

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Project Overview

Project Name

C1qtnf4

Project type

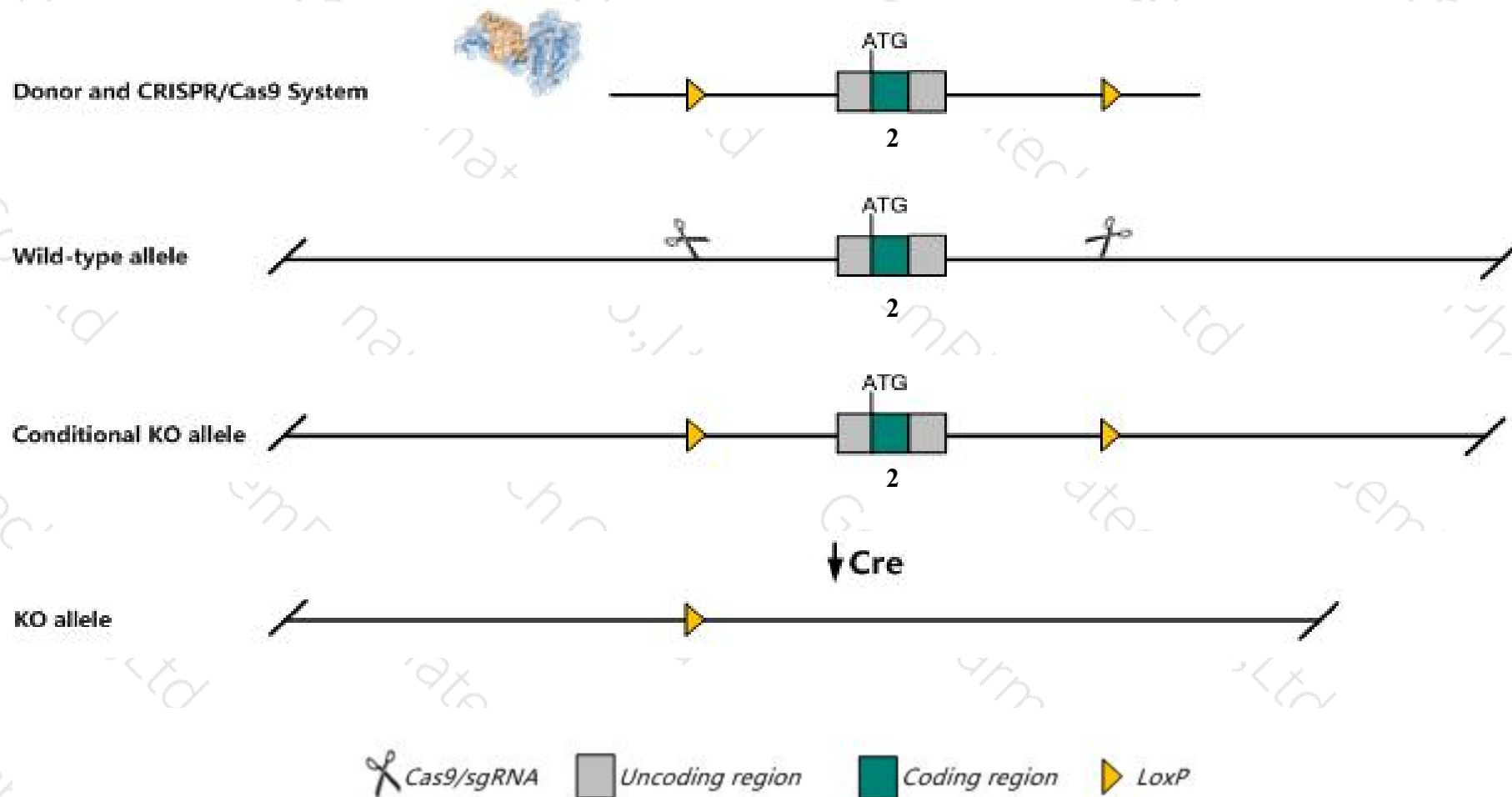
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Clqtnf4* gene. The schematic diagram is as follows:



- The *Clqtnf4* gene has 1 transcript. According to the structure of *Clqtnf4* gene, exon2 of *Clqtnf4-201*(ENSMUST00000111466.2) transcript is recommended as the knockout region. The region contains all 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 *Clqtnf4* 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.

- According to the existing MGI data, male mice homozygous for a mutation are viable and show normal fertility.
- The *C1qtnf4* gene is located on the Chr2. 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)

C1qtnf4 C1q and tumor necrosis factor related protein 4 [Mus musculus (house mouse)]

Gene ID: 67445, updated on 13-Mar-2020

Summary



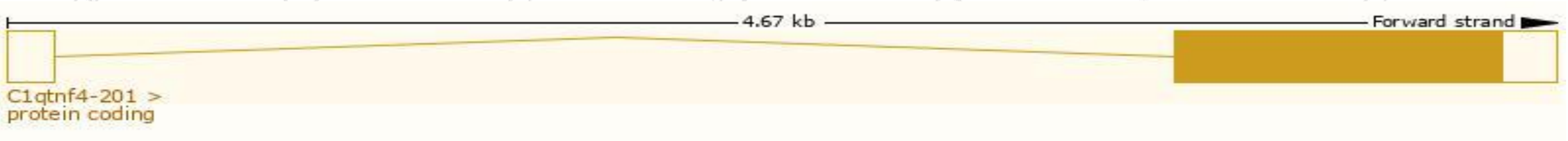
Official Symbol	C1qtnf4 provided by MGI
Official Full Name	C1q and tumor necrosis factor related protein 4 provided by MGI
Primary source	MGI:MGI:1914695
See related	Ensembl:ENSMUSG00000040794
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	0710001E10Rik, 9430004J15Rik, Adin, CTRP4
Expression	Biased expression in testis adult (RPKM 119.2), frontal lobe adult (RPKM 74.2) and 7 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

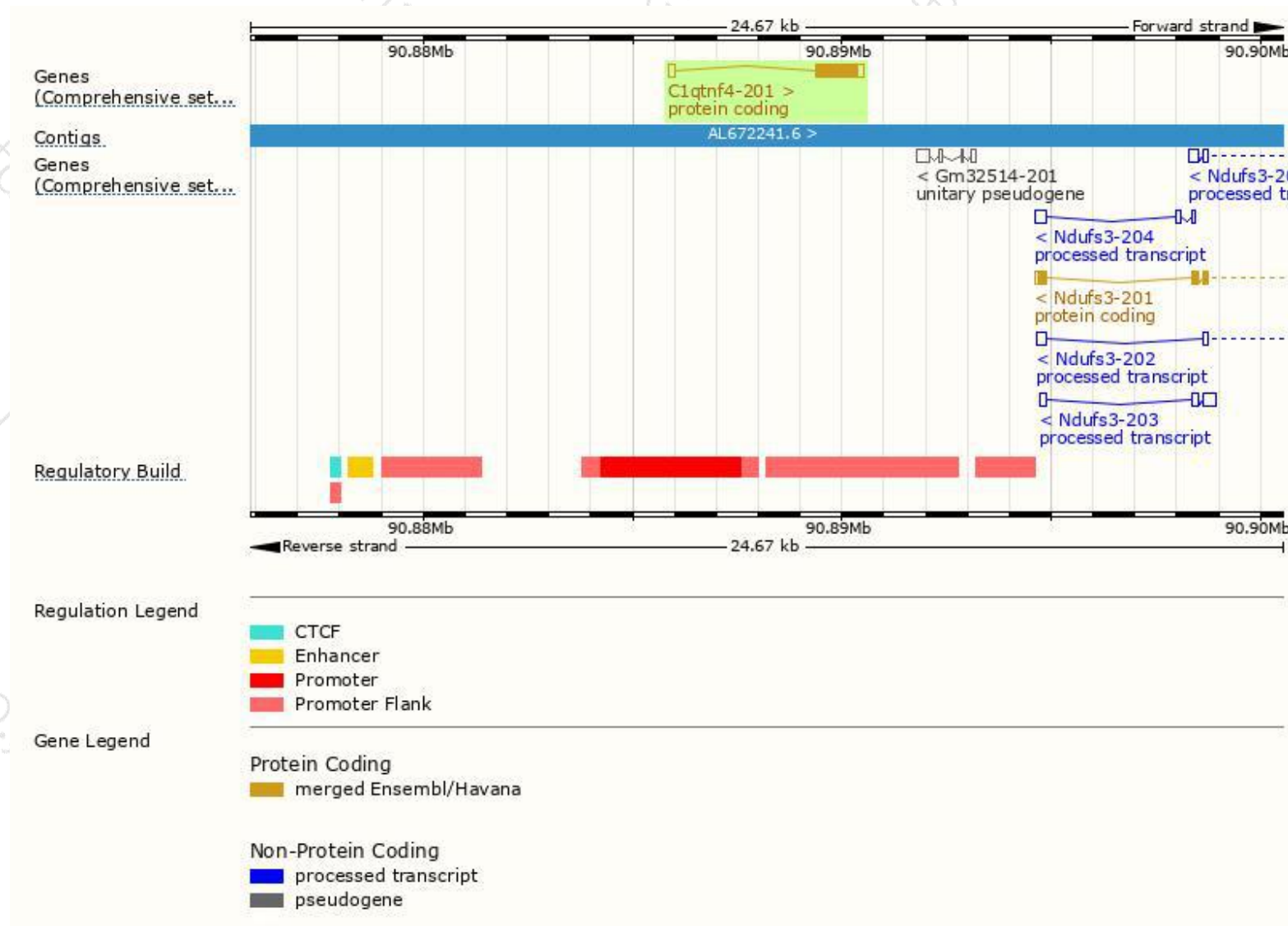
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
C1qtnf4-201	ENSMUST00000111466.2	1290	326aa	Protein coding	CCDS16417	A0A3B0IP17 Q8R066	TSL:1 GENCODE basic APPRIS P1

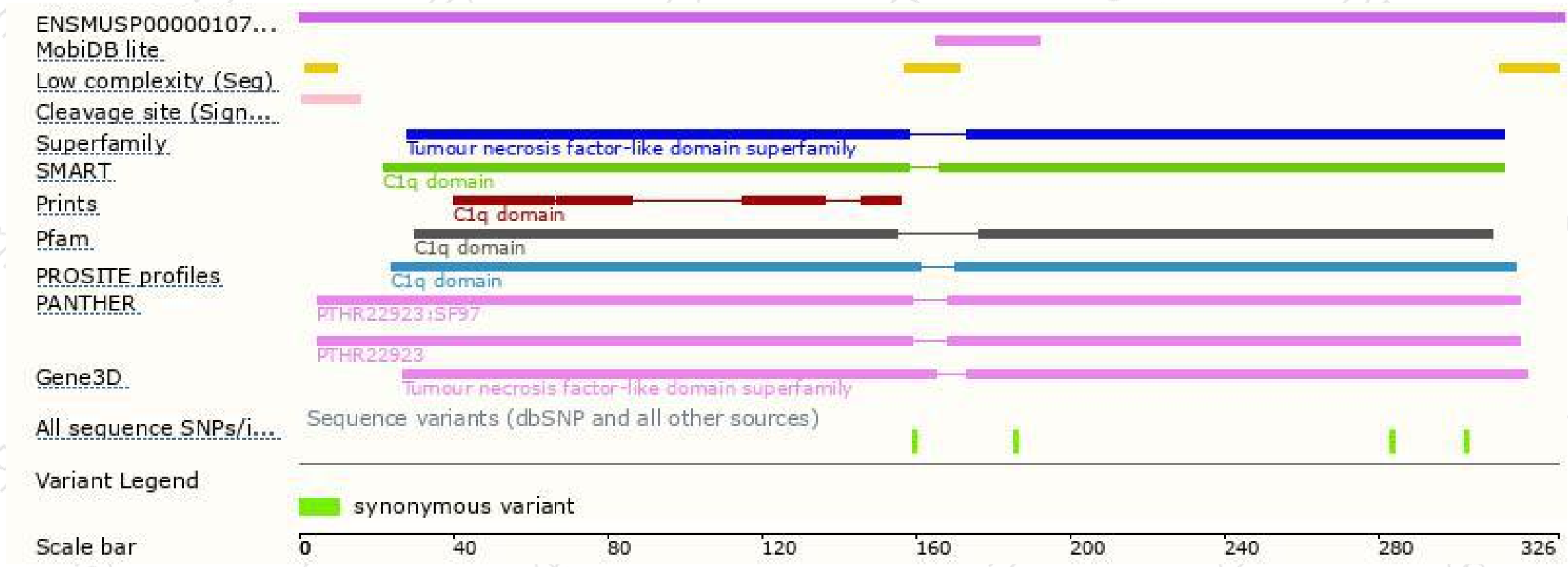
The strategy is based on the design of *C1qtnf4-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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