

Cnot8 Cas9-CKO Strategy

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Project Overview

Project Name

Cnot8

Project type

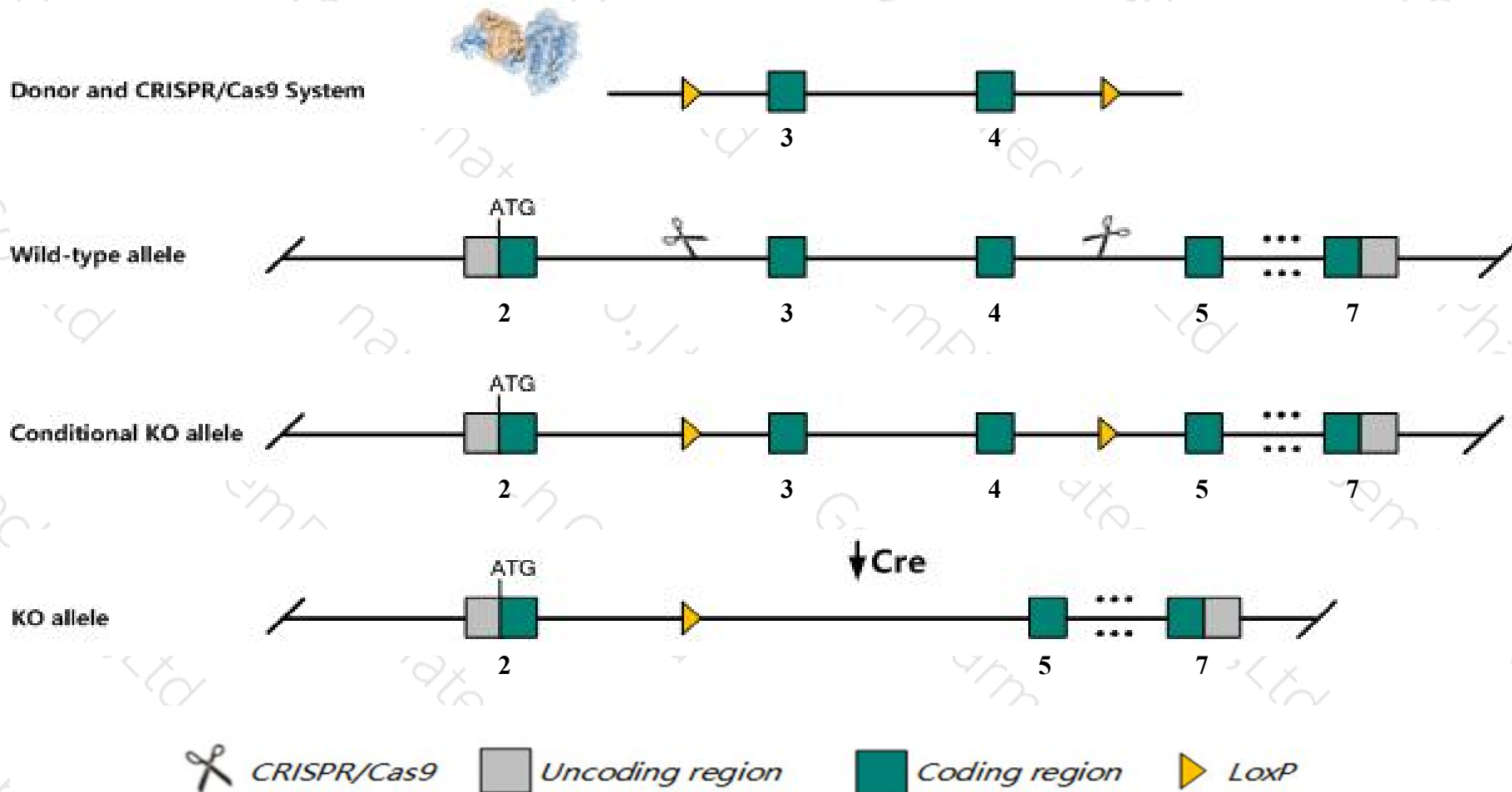
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cnot8* gene. The schematic diagram is as follows:



Technical routes

- The *Cnot8* gene has 4 transcripts. According to the structure of *Cnot8* gene, exon3-exon4 of *Cnot8*-202 (ENSMUST00000108843.7) transcript is recommended as the knockout region. The region contains 356bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cnot8* 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

- Transcript Cnot8-204 may not be affected.
- The *Cnot8* gene is located on the Chr11. 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)

Cnot8 CCR4-NOT transcription complex, subunit 8 [Mus musculus (house mouse)]

Gene ID: 69125, updated on 13-Mar-2020

Summary



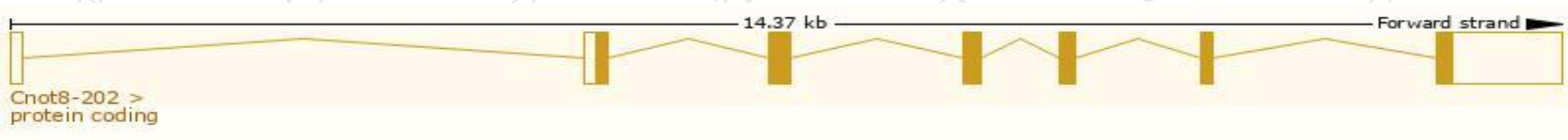
Official Symbol	Cnot8 provided by MGI
Official Full Name	CCR4-NOT transcription complex, subunit 8 provided by MGI
Primary source	MGI:MGI:1916375
See related	Ensembl:ENSMUSG00000020515
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1500015I04Rik, 1810022F04Rik, AA536816, AU015770, AU043059
Expression	Ubiquitous expression in thymus adult (RPKM 34.1), CNS E14 (RPKM 23.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

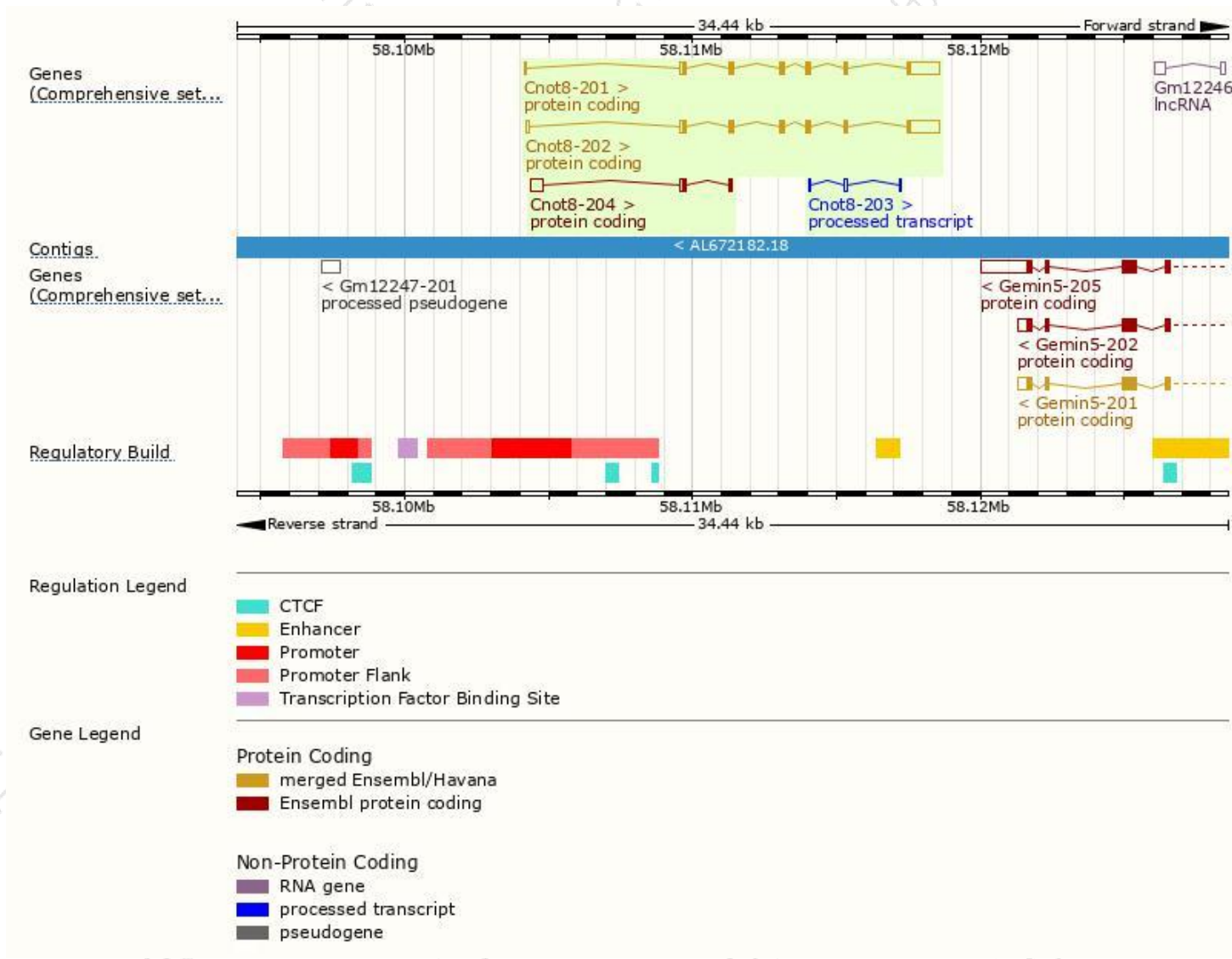
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cnot8-202	ENSMUST00000108843.7	2099	292aa	Protein coding	CCDS24722	Q9D8X5	TSL:1 GENCODE basic APPRIS P1
Cnot8-201	ENSMUST00000020822.11	2035	292aa	Protein coding	CCDS24722	Q9D8X5	TSL:1 APPRIS P1
Cnot8-204	ENSMUST00000134896.1	750	75aa	Protein coding	-	A2AFQ7	CDS 3' incomplete TSL:2
Cnot8-203	ENSMUST00000133923.1	231	No protein	Processed transcript	-	-	TSL:5

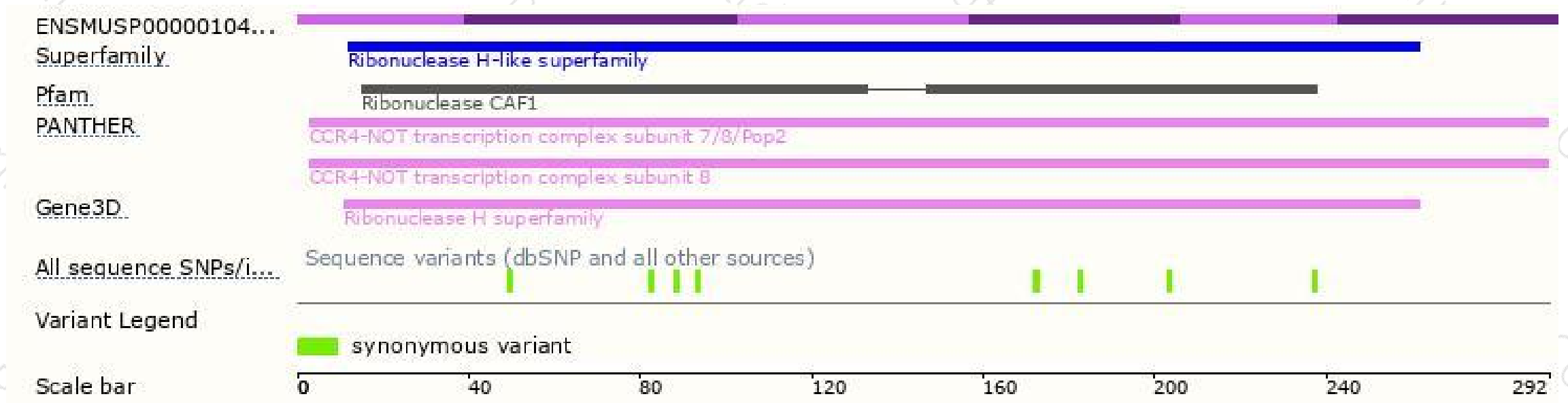
The strategy is based on the design of *Cnot8-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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