

***Mab21l4* Cas9-CKO Strategy**

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Project Overview

Project Name

Mab21l4

Project type

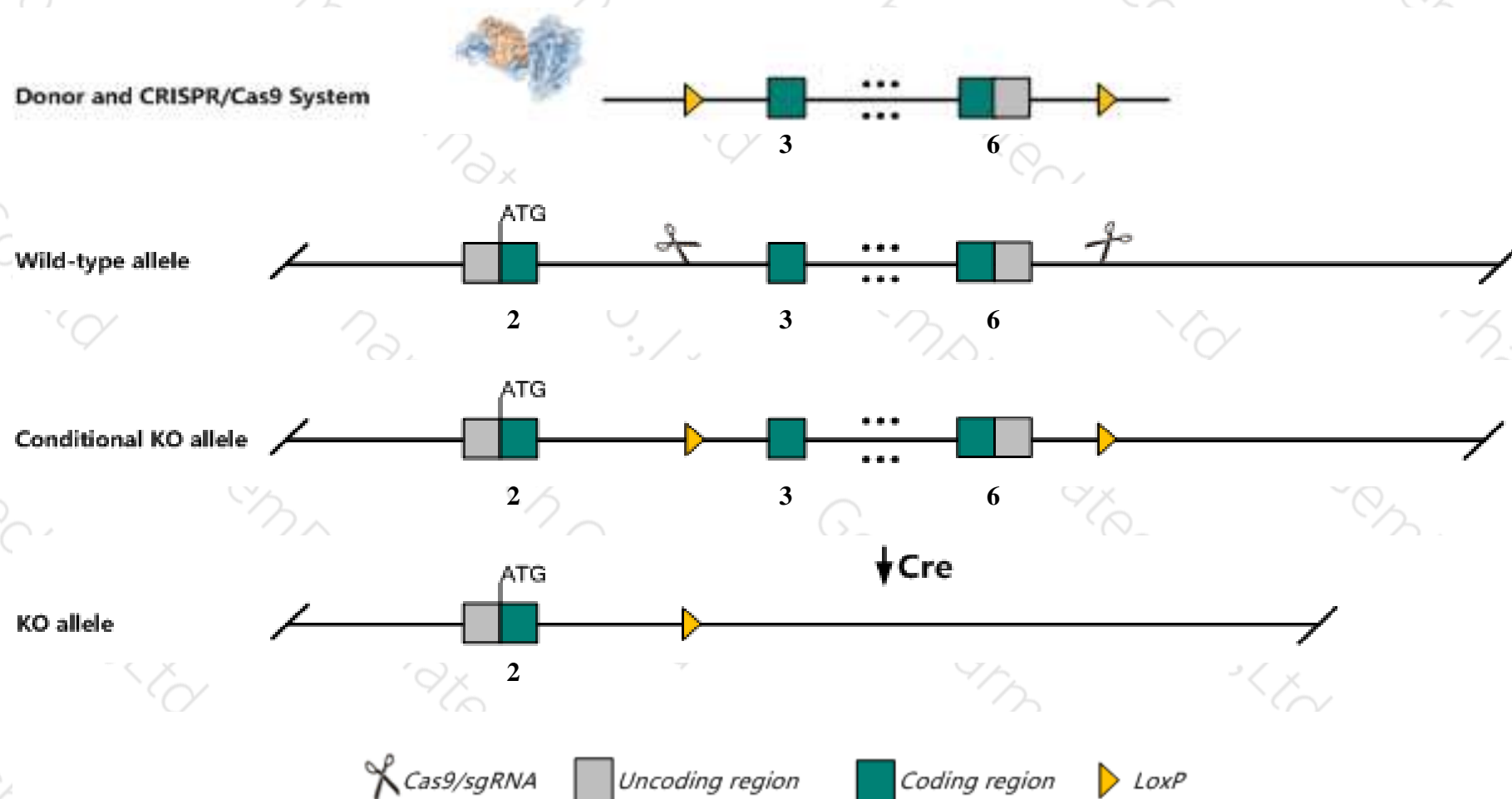
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Mab21l4* gene. The schematic diagram is as follows:



- The *Mab21l4* gene has 2 transcripts. According to the structure of *Mab21l4* gene, exon3-exon6 of *Mab21l4*-201(ENSMUST00000043718.11) 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 *Mab21l4* 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 N-terminal of *Mab21l4* gene will remain several amino acids, it may remain the partial function of *Mab21l4* gene.
- The *Mab21l4* gene is located on the Chr1. 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)

Mab21l4 mab-21-like 4 [*Mus musculus* (house mouse)]

Gene ID: 71874, updated on 25-Sep-2020

Summary



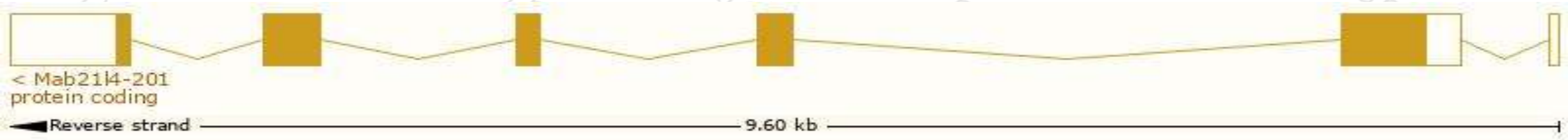
Official Symbol	Mab21l4 provided by MGI
Official Full Name	mab-21-like 4 provided by MGI
Primary source	MGI:MGI:1919124
See related	Ensembl:ENSMUSG00000034159
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310007B03Rik
Expression	Biased expression in lung adult (RPKM 29.2), colon adult (RPKM 5.8) and 6 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

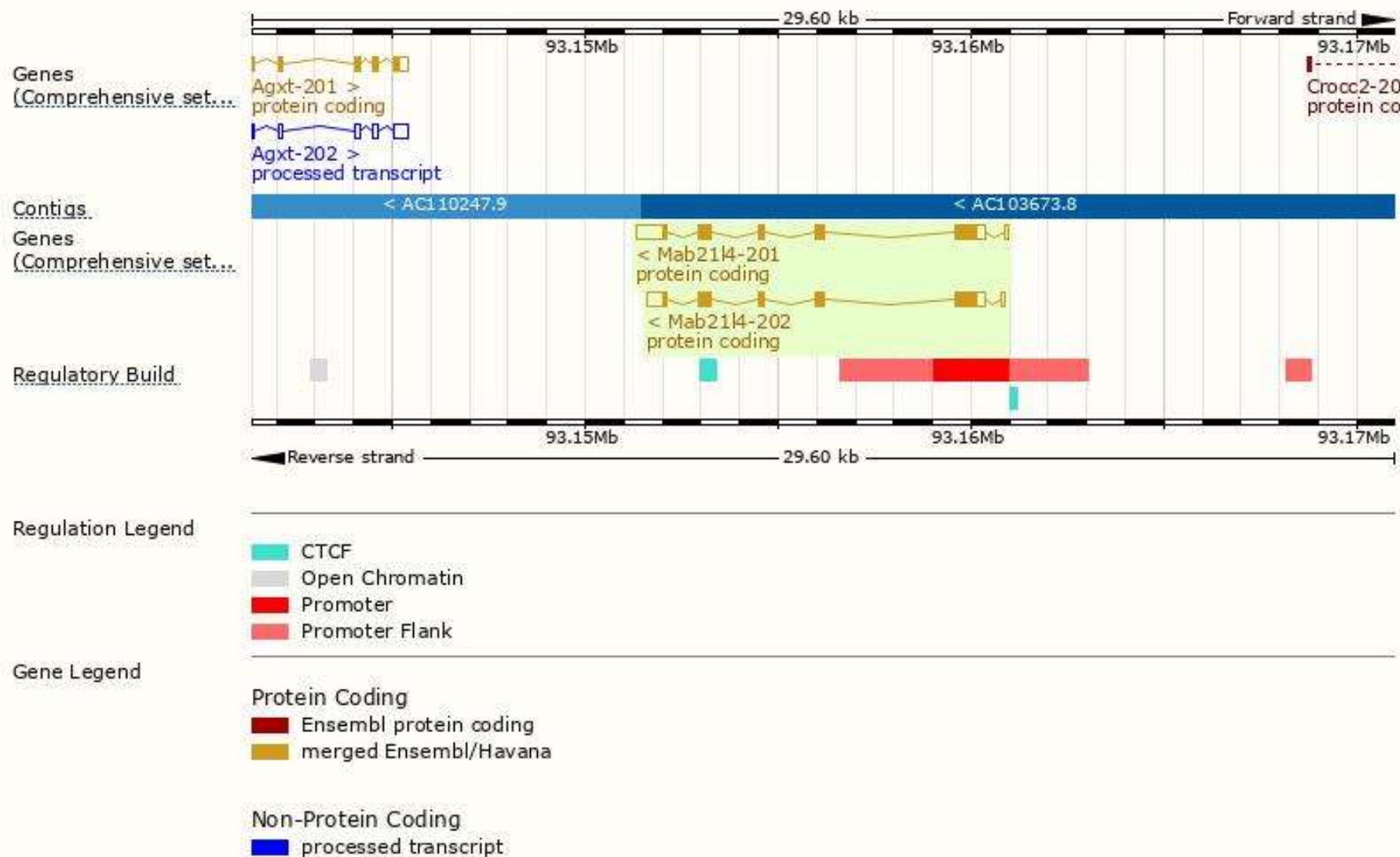
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Mab21l4-201	ENSMUST00000043718.11	2299	452aa	Protein coding	CCDS15185	Q8CEZ4	TSL:1 GENCODE basic APPRIS P1
Mab21l4-202	ENSMUST00000143419.1	2074	452aa	Protein coding	CCDS15185	Q8CEZ4	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Mab21l4-201* 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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