

Med14 Cas9-CKO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

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Project Overview

Project Name

Med14

Project type

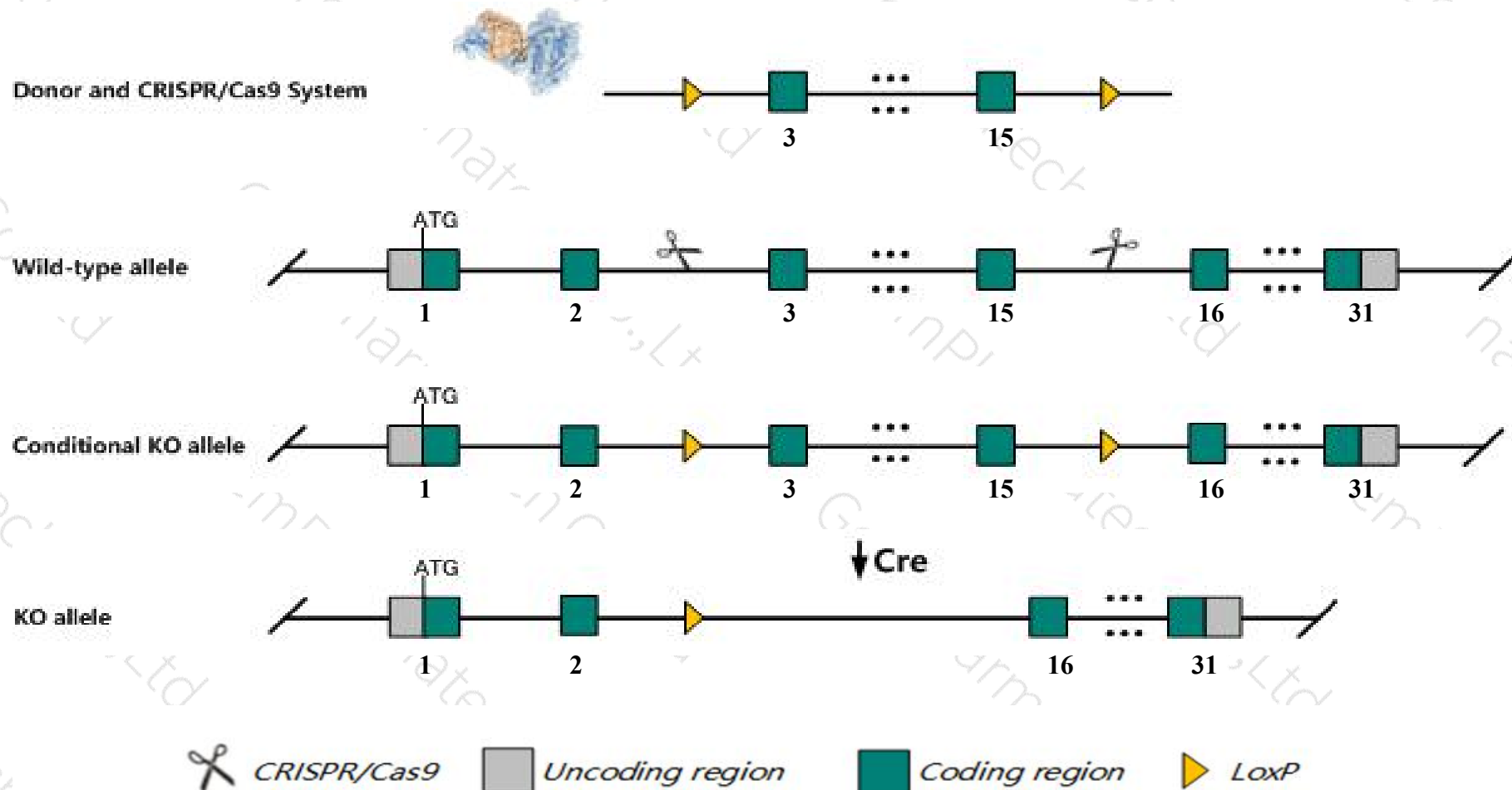
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Med14* gene. The schematic diagram is as follows:



Technical routes

- The *Med14* gene has 5 transcripts. According to the structure of *Med14* gene, exon3-exon15 of *Med14*-202 (ENSMUST00000096495.10) transcript is recommended as the knockout region. The region contains 1738bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Med14* 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, Male chimeras hemizygous for a gene trapped allele appear normal at E10.5.
- The *Med14* gene is located on the ChrX. 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)

Med14 mediator complex subunit 14 [Mus musculus (house mouse)]

Gene ID: 26896, updated on 3-Feb-2019

Summary



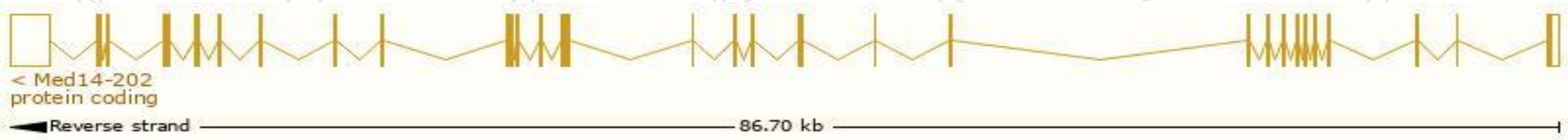
Official Symbol	Med14 provided by MGI
Official Full Name	mediator complex subunit 14 provided by MGI
Primary source	MGI:MGI:1349442
See related	Ensembl:ENSMUSG00000064127
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9930001L01Rik, AU041628, Crsp2, Gm641, ORF1, Trap170
Expression	Ubiquitous expression in thymus adult (RPKM 13.6), whole brain E14.5 (RPKM 7.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

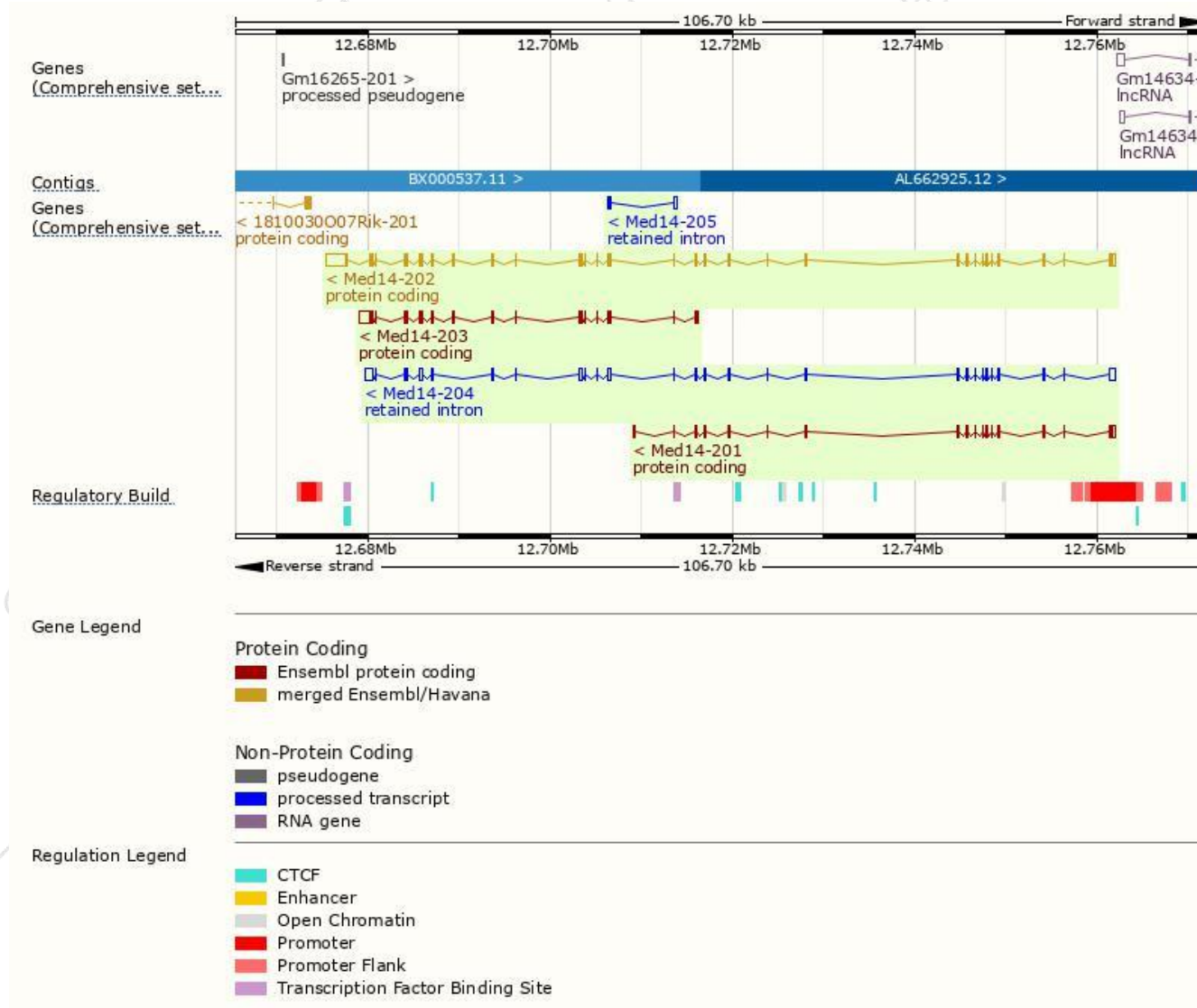
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Med14-202	ENSMUST00000096495.10	6963	1459aa	Protein coding	CCDS40874	A2ABV5	TSL:5 GENCODE basic APPRIS P2
Med14-203	ENSMUST00000115481.7	3729	798aa	Protein coding	-	A2BDP0	TSL:1 GENCODE basic
Med14-201	ENSMUST00000076016.5	2561	700aa	Protein coding	-	A2BDN7	TSL:1 GENCODE basic APPRIS ALT2
Med14-204	ENSMUST00000124053.1	5129	No protein	Retained intron	-	-	TSL:1
Med14-205	ENSMUST00000124070.1	627	No protein	Retained intron	-	-	TSL:3

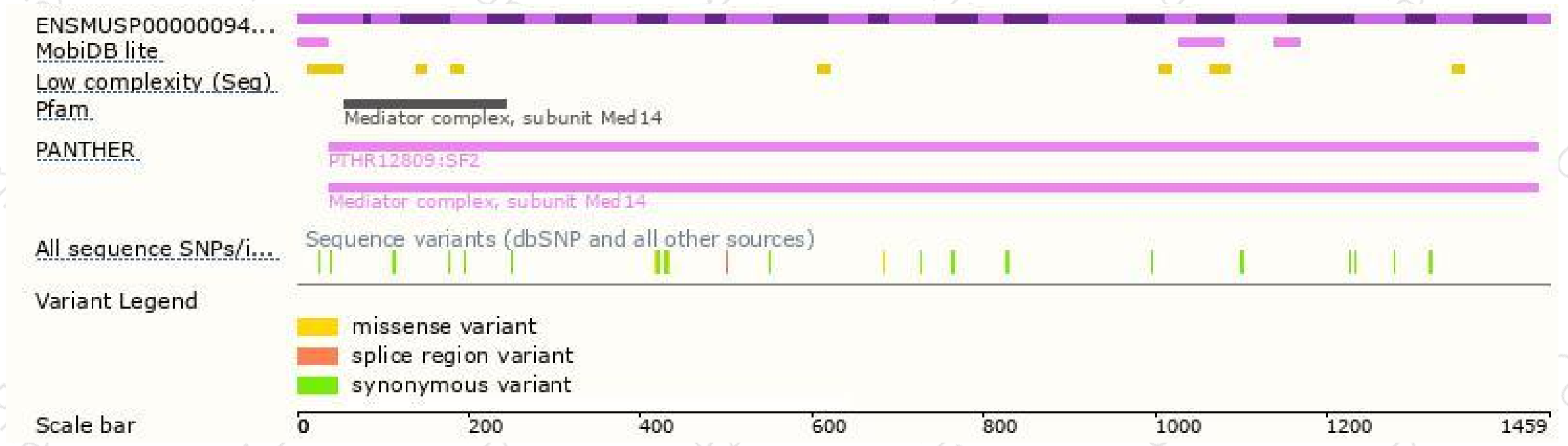
The strategy is based on the design of *Med14-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

