

***Zcchc10* Cas9-KO Strategy**

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Project Overview

Project Name

Zcchc10

Project type

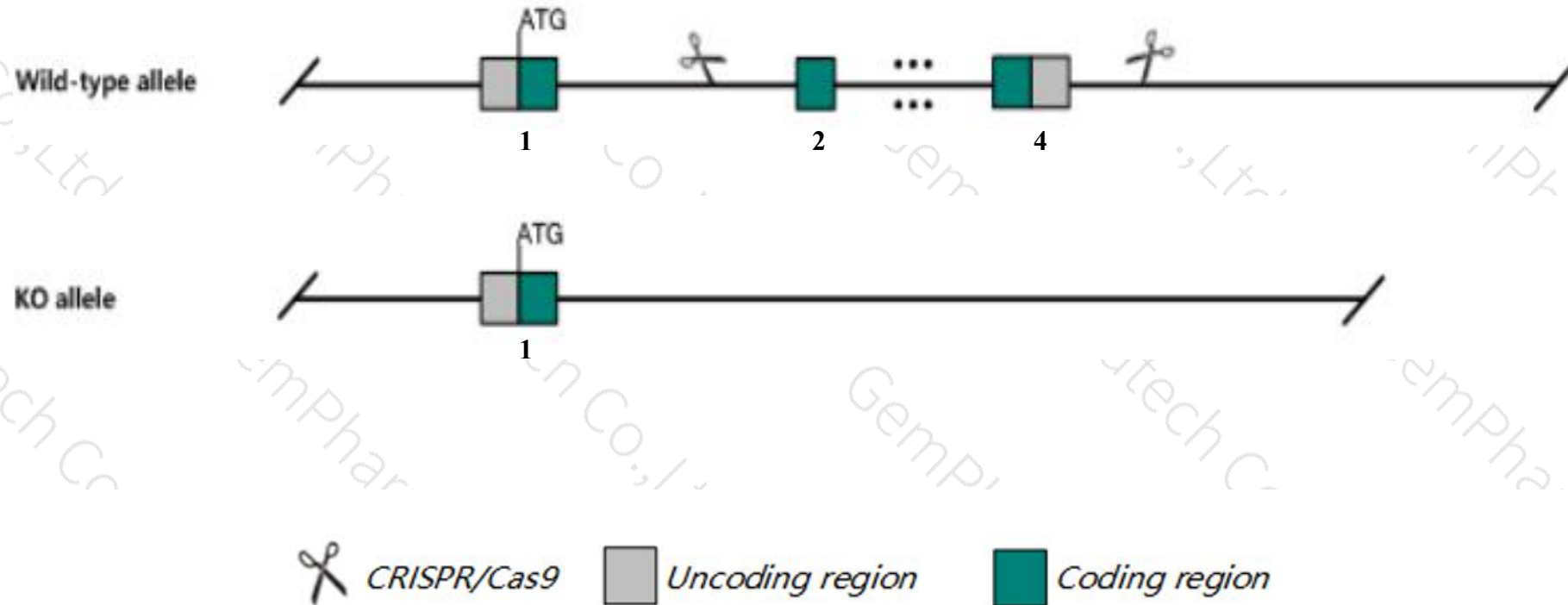
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zcchc10* gene. The schematic diagram is as follows:



- The *Zcchc10* gene has 2 transcripts. According to the structure of *Zcchc10* gene, exon2-exon4 of *Zcchc10*-201(ENSMUST00000018383.9) 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 *Zcchc10* gene. The brief process is as follows: gRNA was transcribed in vitro. Cas9 and gRNA 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 *Zcchc10* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Zcchc10 zinc finger, CCHC domain containing 10 [Mus musculus (house mouse)]

Gene ID: 67966, updated on 13-Mar-2020

Summary



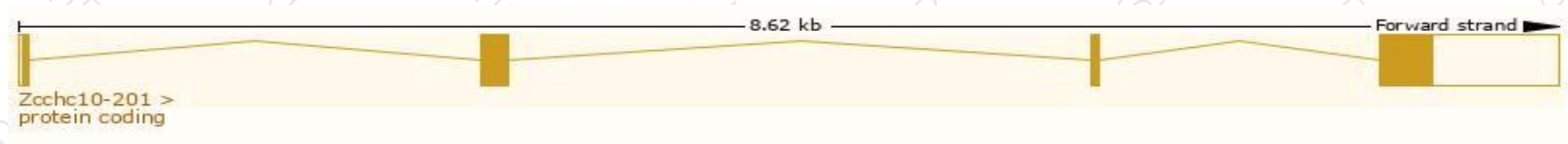
Official Symbol	Zcchc10 provided by MGI
Official Full Name	zinc finger, CCHC domain containing 10 provided by MGI
Primary source	MGI:MGI:1196228
See related	Ensembl:ENSMUSG00000018239
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410141K03Rik, AA675321, D11Ert416e
Expression	Ubiquitous expression in placenta adult (RPKM 5.3), liver E14 (RPKM 5.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

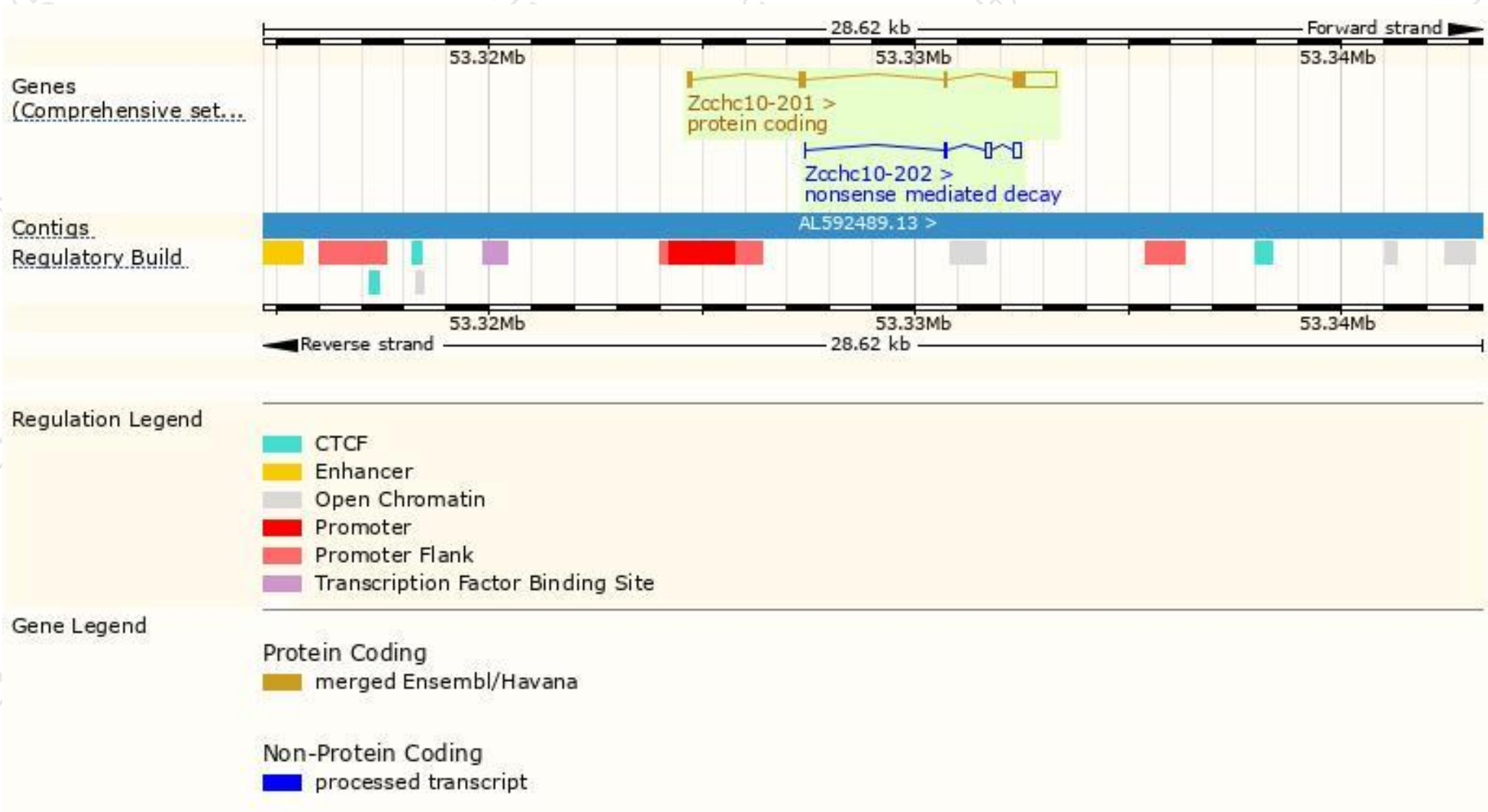
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zcchc10-201	ENSMUST00000018383.9	1267	178aa	Protein coding	CCDS24675	Q9CX48	TSL:1 GENCODE basic APPRIS P1
Zcchc10-202	ENSMUST000000141585.1	375	29aa	Nonsense mediated decay	-	F6QZB1	CDS 5' incomplete TSL:5

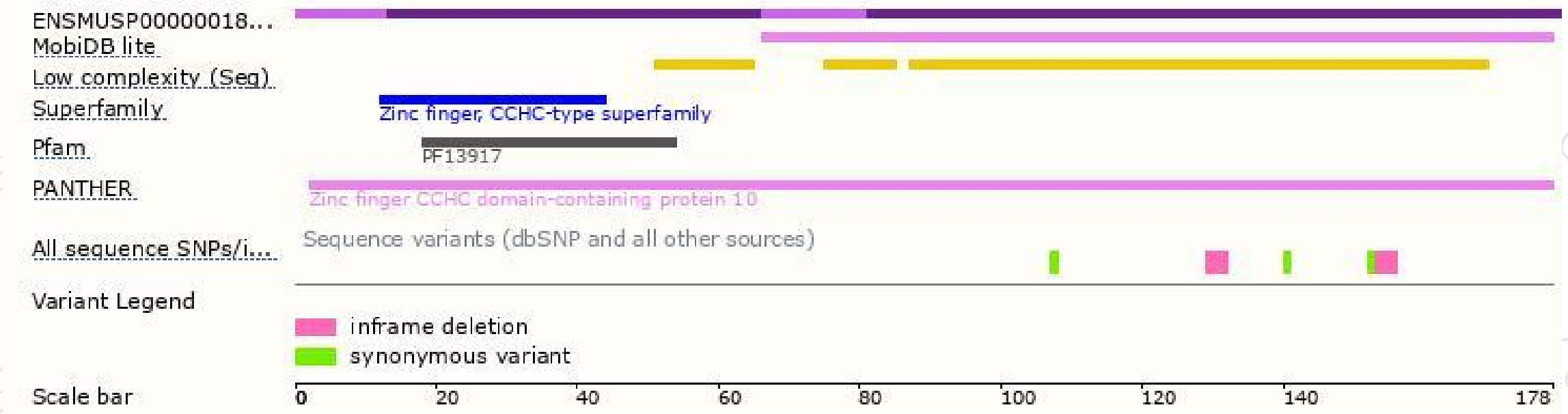
The strategy is based on the design of *Zcchc10-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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