

Zc2hc1b Cas9-CKO Strategy

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Design Date: 2020-3-22

Project Overview

Project Name

Zc2hc1b

Project type

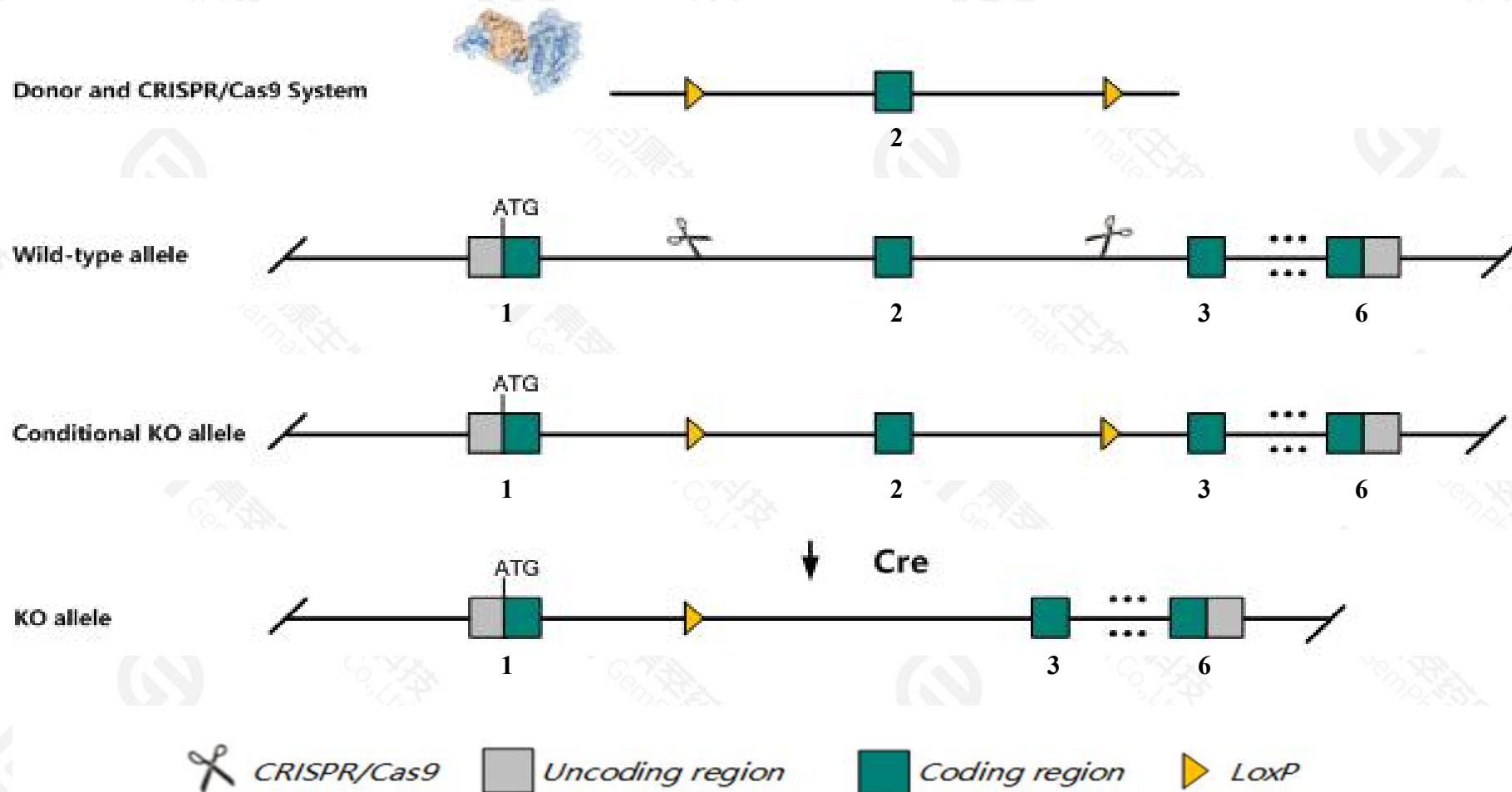
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zc2hc1b* gene. The schematic diagram is as follows:



- The *Zc2hc1b* gene has 2 transcripts. According to the structure of *Zc2hc1b* gene, exon2 of *Zc2hc1b-201*(ENSMUST00000019954.6) transcript is recommended as the knockout region. The region contains 62bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zc2hc1b* 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.

- The *Zc2hc1b* gene is located on the Chr10. 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)

Zc2hc1b zinc finger, C2HC-type containing 1B [Mus musculus (house mouse)]

Gene ID: 75122, updated on 25-Sep-2020

Summary



Official Symbol Zc2hc1b provided by [MGI](#)

Official Full Name zinc finger, C2HC-type containing 1B provided by [MGI](#)

Primary source [MGI:MGI:1922372](#)

See related [Ensembl:ENSMUSG00000019815](#)

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 4930519B02Rik, Fam164, Fam164b

Expression Restricted expression toward testis adult (RPKM 1.9) [See more](#)

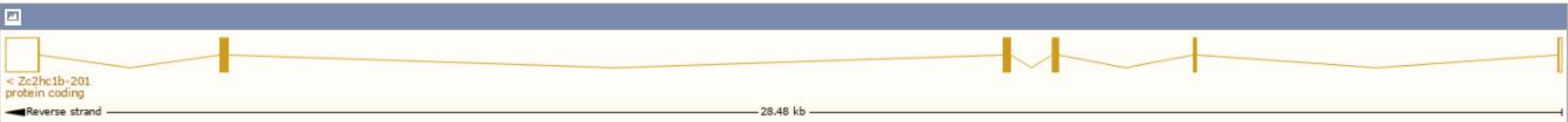
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

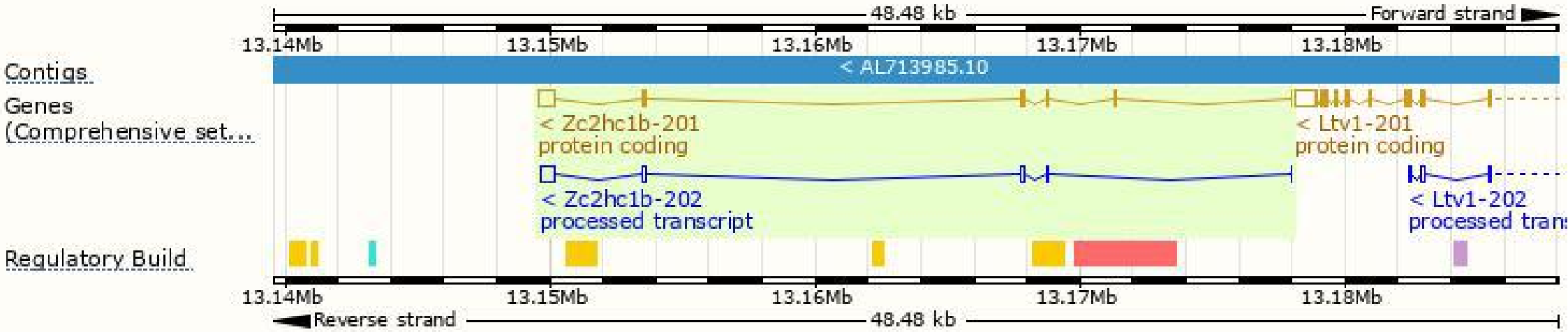
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zc2hc1b-201	ENSMUST00000019954.6	1157	172aa	Protein coding	CCDS48502		TSL:1 , GENCODE basic , APPRIS P1 ,
Zc2hc1b-202	ENSMUST00000219970.2	991	No protein	Processed transcript	-		TSL:1 ,

The strategy is based on the design of *Zc2hc1b-201* transcript,the transcription is shown below:



Genomic location distribution



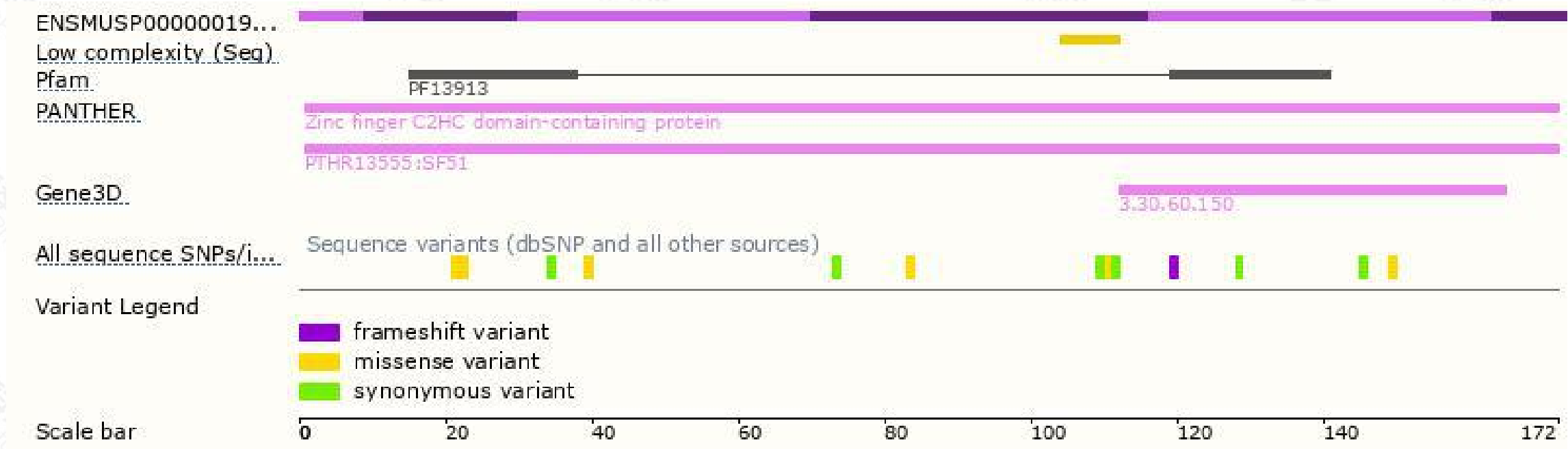
Regulation Legend

- CTCF
- Enhancer
- Promoter Flank
- Transcription Factor Binding Site

Gene Legend

- Protein Coding
- merged Ensembl/Havana
- Non-Protein Coding
- processed transcript

Protein domain



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