

Zc3h15 Cas9-CKO Strategy

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Project Overview

Project Name

Zc3h15

Project type

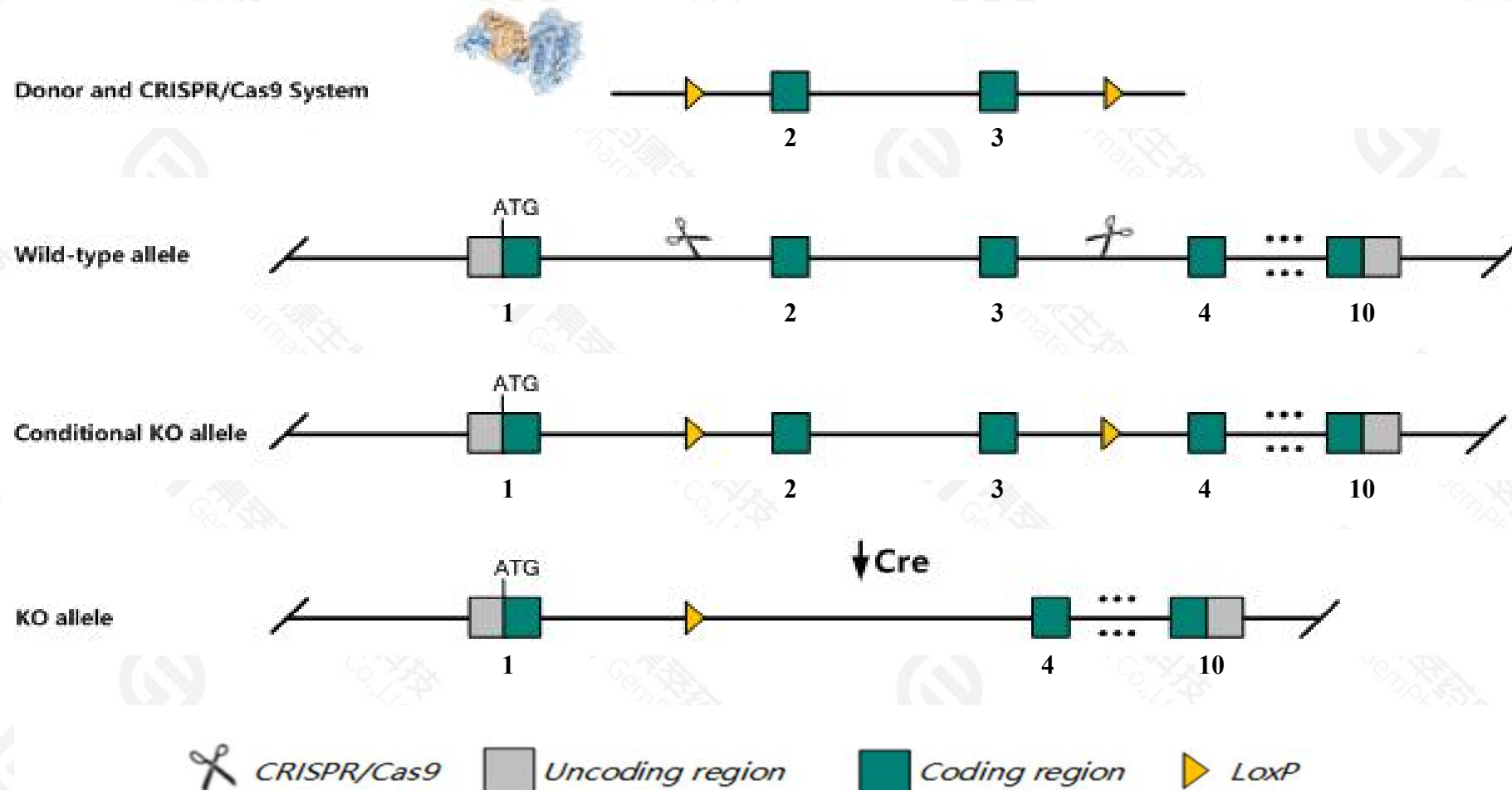
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zc3h15* gene. The schematic diagram is as follows:



Technical routes

- The *Zc3h15* gene has 7 transcripts. According to the structure of *Zc3h15* gene, exon2-exon3 of *Zc3h15*-201(ENSMUST00000081591.7) transcript is recommended as the knockout region. The region contains 214bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zc3h15* 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

- The *Zc3h15* gene is located on the Chr2. 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)

Zc3h15 zinc finger CCCH-type containing 15 [Mus musculus (house mouse)]

Gene ID: 69082, updated on 3-Jan-2021

Summary



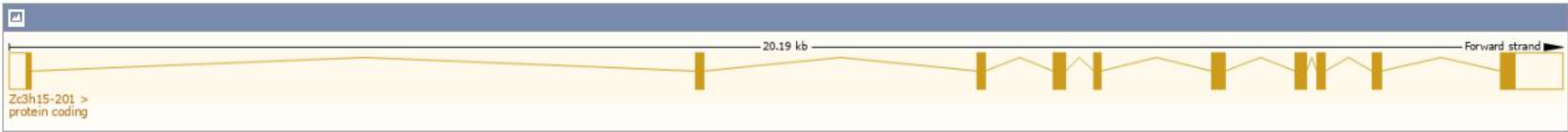
Official Symbol	Zc3h15 provided by MGI
Official Full Name	zinc finger CCCH-type containing 15 provided by MGI
Primary source	MGI:MGI:1919747
See related	Ensembl:ENSMUSG00000027091
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700006A17Rik, 1810012H02Rik, 2610312B22Rik, FM22, Ier, Ierepo4
Expression	Broad expression in CNS E11.5 (RPKM 53.2), CNS E18 (RPKM 33.0) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

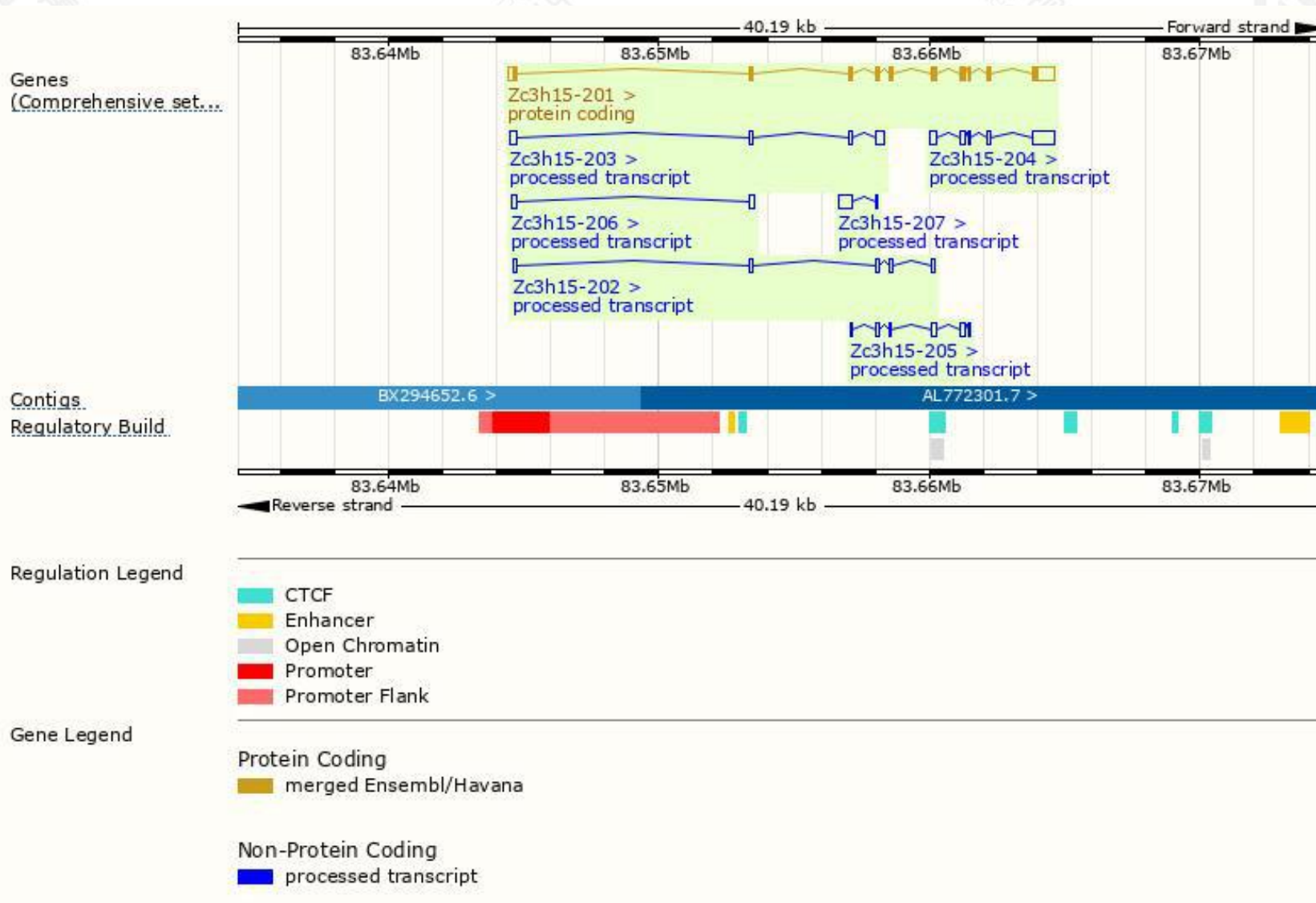
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zc3h15-201	ENSMUST00000081591.7	2111	426aa	Protein coding	CCDS16180		TSL:1 , GENCODE basic , APPRIS P1 ,
Zc3h15-204	ENSMUST00000134789.2	1407	No protein	Processed transcript	-		TSL:1 ,
Zc3h15-203	ENSMUST00000130948.8	755	No protein	Processed transcript	-		TSL:1 ,
Zc3h15-205	ENSMUST00000140086.8	657	No protein	Processed transcript	-		TSL:5 ,
Zc3h15-202	ENSMUST00000125422.8	578	No protein	Processed transcript	-		TSL:5 ,
Zc3h15-207	ENSMUST00000145099.2	566	No protein	Processed transcript	-		TSL:2 ,
Zc3h15-206	ENSMUST00000142756.2	386	No protein	Processed transcript	-		TSL:1 ,

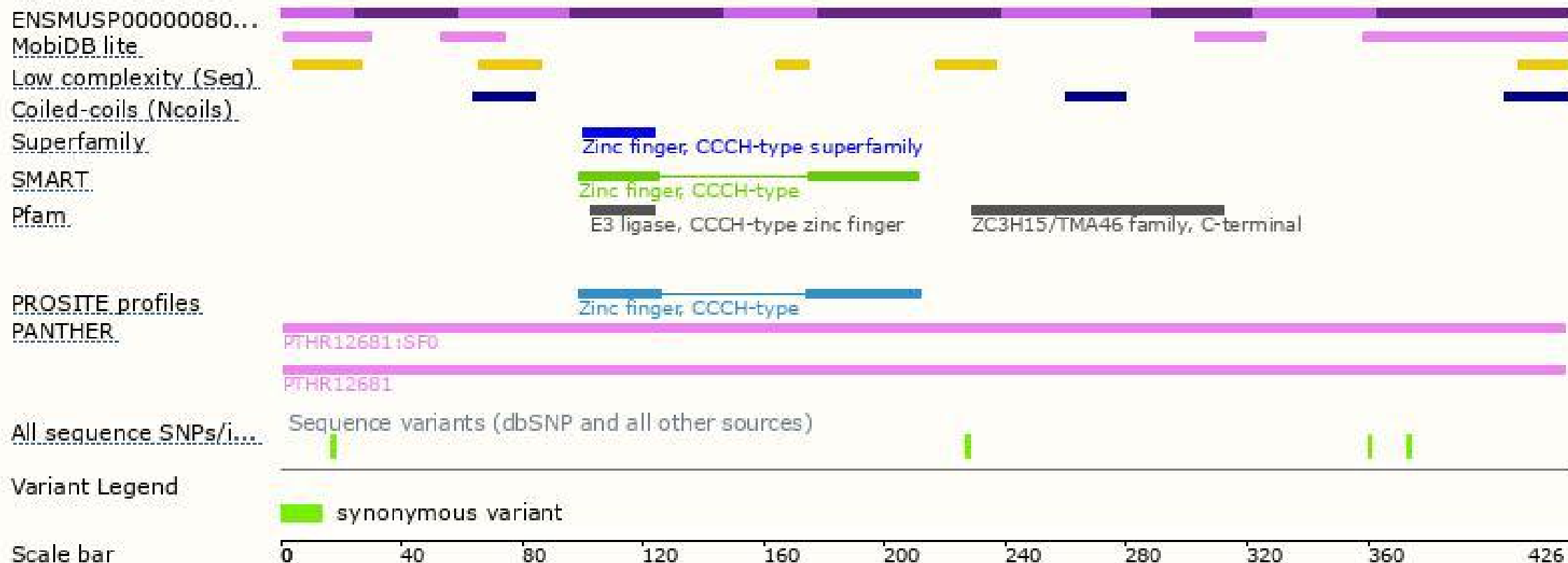
The strategy is based on the design of *Zc3h15-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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