

Zcchc8 Cas9-CKO Strategy

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Project Overview

Project Name

Zcchc8

Project type

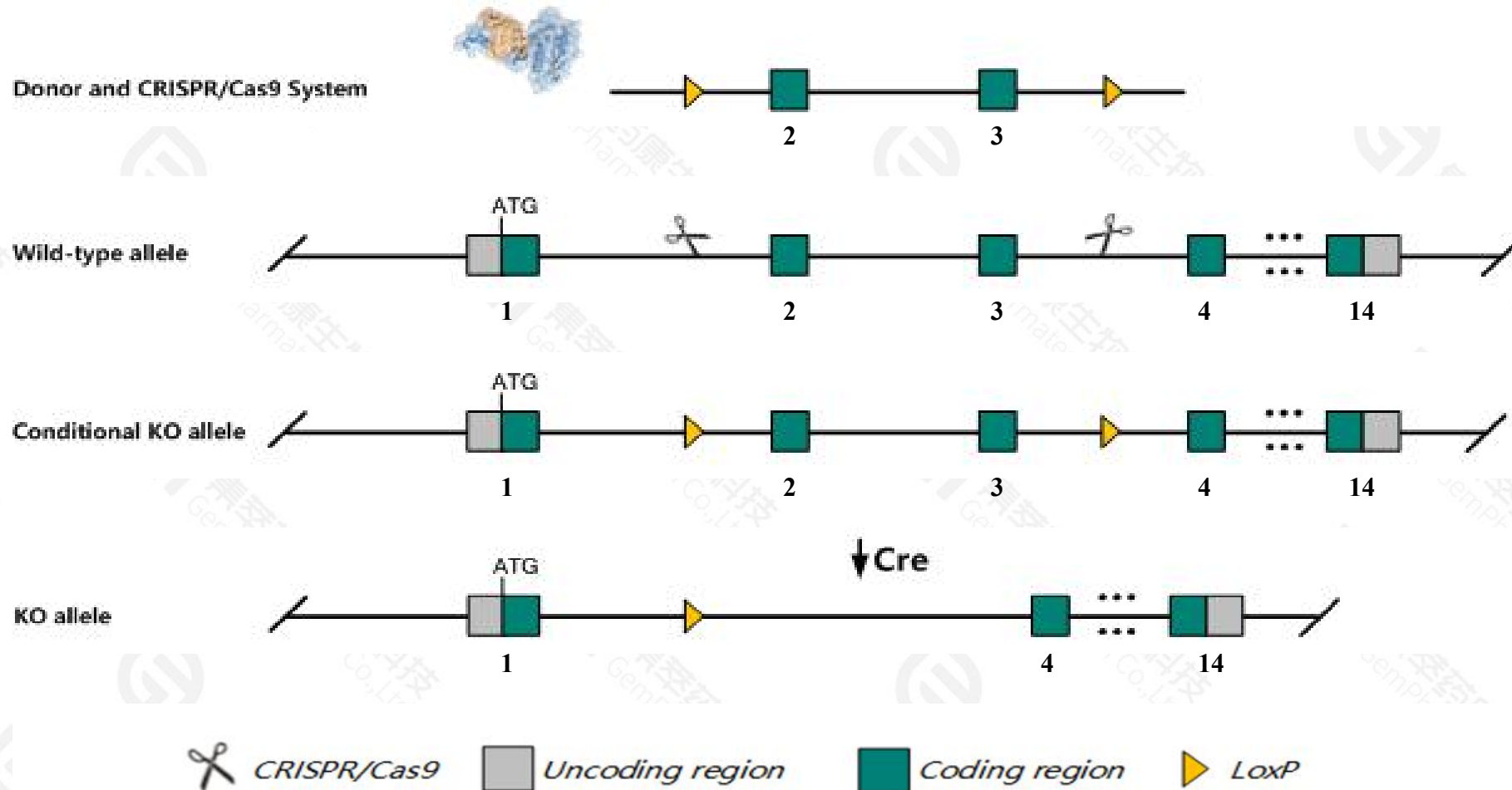
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zcchc8* gene. The schematic diagram is as follows:



Technical routes

- The *Zcchc8* gene has 9 transcripts. According to the structure of *Zcchc8* gene, exon2-exon3 of *Zcchc8*-204(ENSMUST00000196282.5) transcript is recommended as the knockout region. The region contains 118bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zcchc8* 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 *Zcchc8* gene is located on the Chr5. 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)

Zcchc8 zinc finger, CCHC domain containing 8 [Mus musculus (house mouse)]

Gene ID: 70650, updated on 17-Dec-2020

Summary



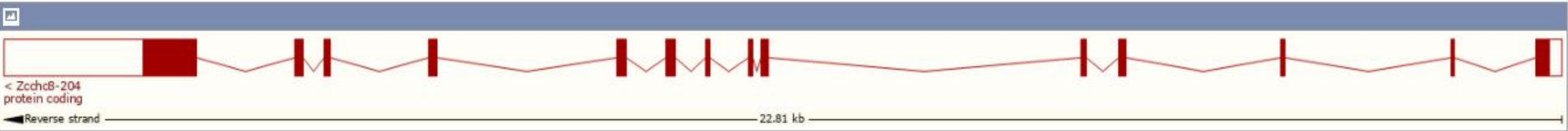
Official Symbol	Zcchc8 provided by MGI
Official Full Name	zinc finger, CCHC domain containing 8 provided by MGI
Primary source	MGI:MGI:1917900
See related	Ensembl:ENSMUSG00000029427
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5730565F05Rik
Expression	Ubiquitous expression in CNS E11.5 (RPKM 18.9), testis adult (RPKM 13.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

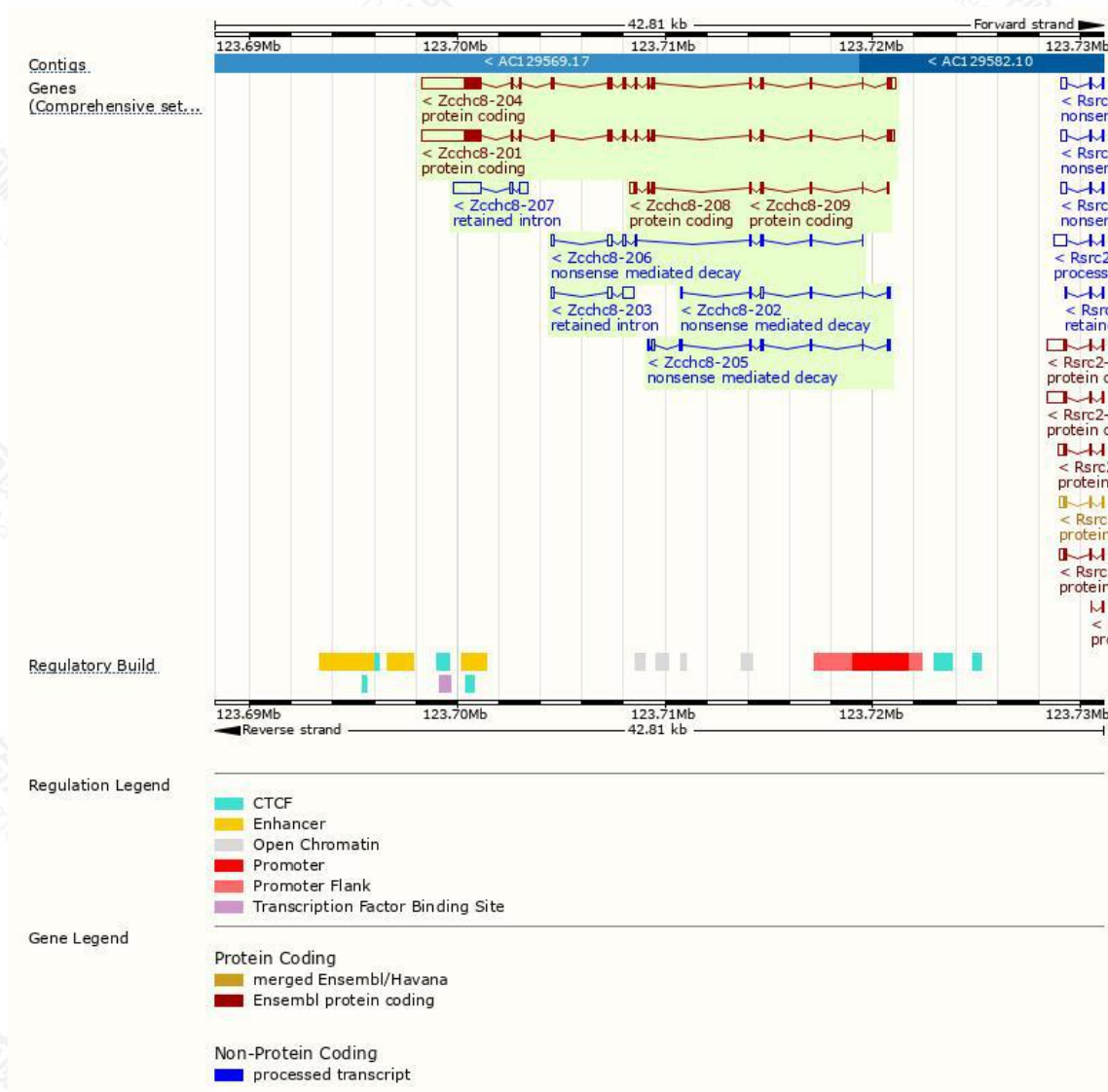
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zcchc8-204	ENSMUST00000196282.5	4350	709aa	Protein coding	CCDS80406		TSL:5 , GENCODE basic , APPRIS P1 ,
Zcchc8-201	ENSMUST00000031376.12	4286	709aa	Protein coding	-		TSL:1 , GENCODE basic , APPRIS P1 ,
Zcchc8-208	ENSMUST00000200161.2	531	103aa	Protein coding	-		CDS 5' incomplete , TSL:5 ,
Zcchc8-209	ENSMUST00000200503.2	321	107aa	Protein coding	-		CDS 5' and 3' incomplete , TSL:3 ,
Zcchc8-206	ENSMUST00000198826.5	751	105aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:5 ,
Zcchc8-205	ENSMUST00000196333.5	690	173aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:5 ,
Zcchc8-202	ENSMUST00000196001.2	506	54aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:5 ,
Zcchc8-207	ENSMUST00000199875.2	1868	No protein	Retained intron	-		TSL:1 ,
Zcchc8-203	ENSMUST00000196042.2	738	No protein	Retained intron	-		TSL:2 ,

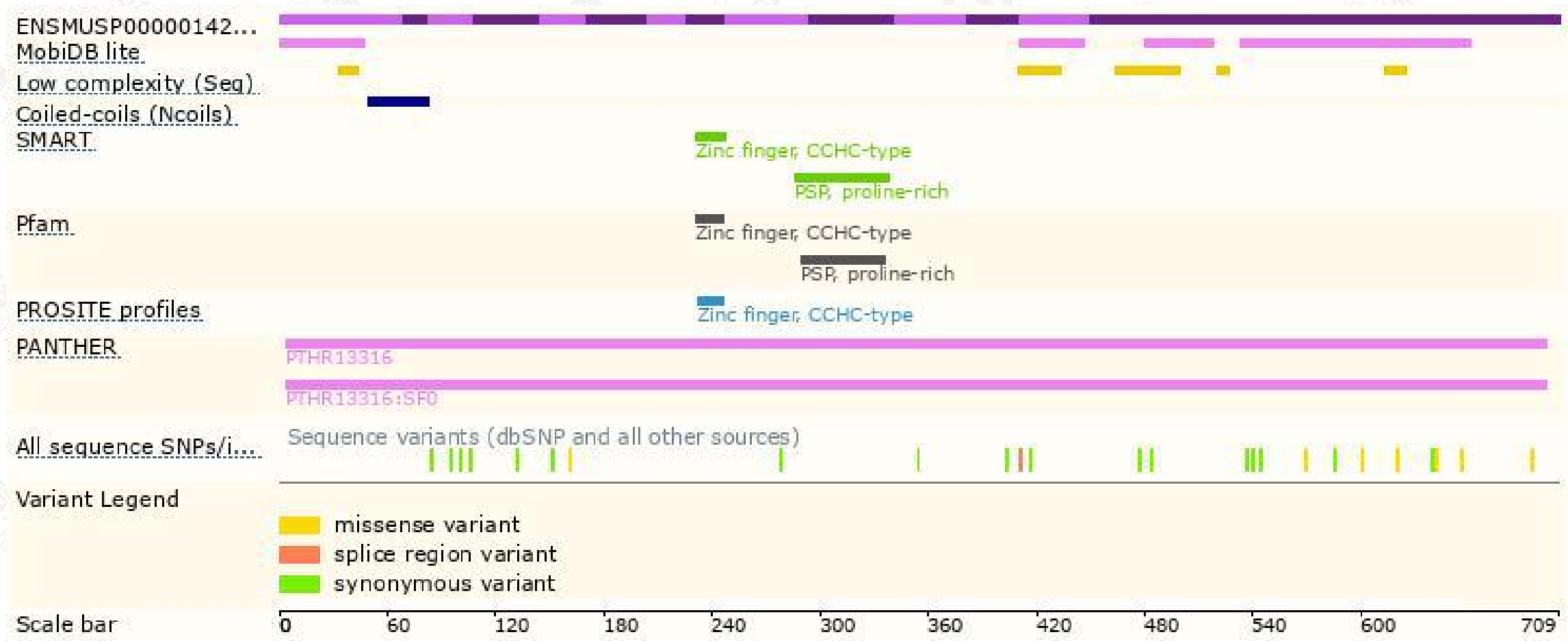
The strategy is based on the design of *Zcchc8-204* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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