

Zcchc4 Cas9-KO Strategy

Designer: Shuang Zhang

Reviewer: Yun Li

Design Date: 2020-3-29

Project Overview

Project Name

Zcchc4

Project type

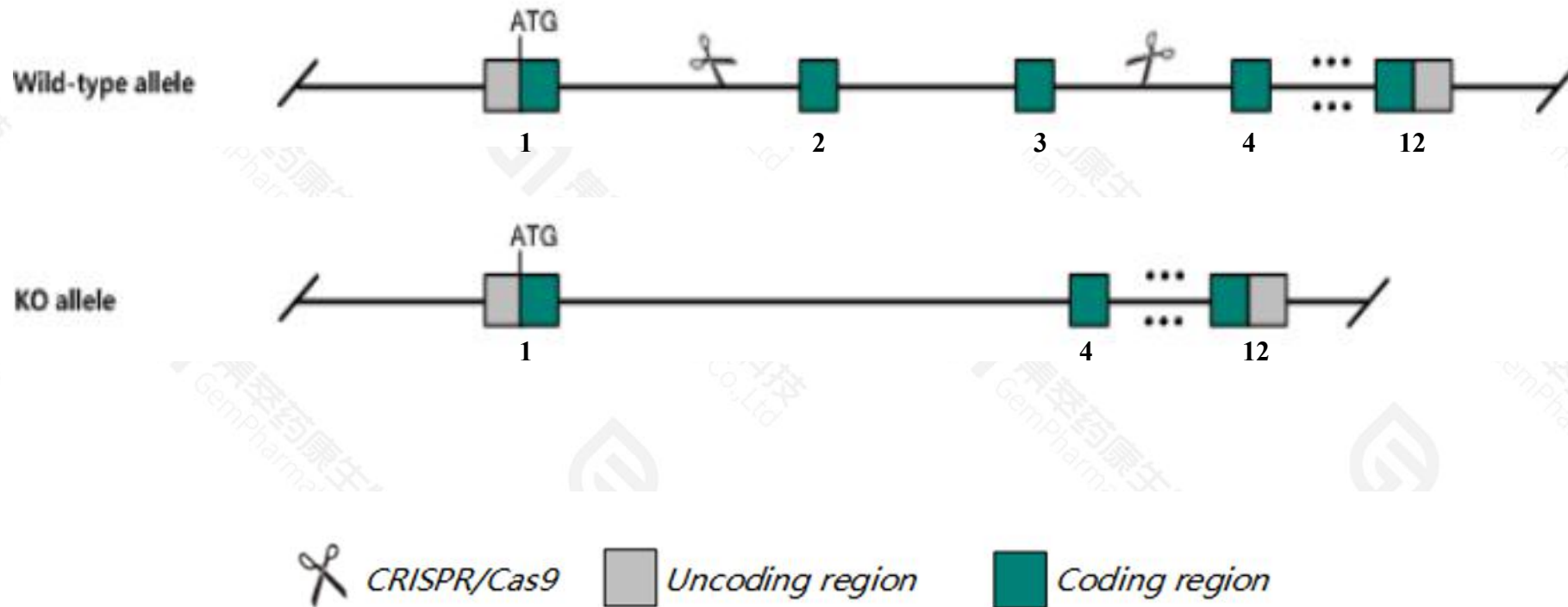
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zcchc4* gene. The schematic diagram is as follows:



- The *Zcchc4* gene has 8 transcripts. According to the structure of *Zcchc4* gene, exon2-exon3 of *Zcchc4-201*(ENSMUST00000031077.13) transcript is recommended as the knockout region. The region contains 202bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zcchc4* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Zcchc4* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Zcchc4 zinc finger, CCHC domain containing 4 [Mus musculus (house mouse)]

Gene ID: 78796, updated on 17-Dec-2020

Summary



Official Symbol	Zcchc4 provided by MGI
Official Full Name	zinc finger, CCHC domain containing 4 provided by MGI
Primary source	MGI:MGI:1926046
See related	Ensembl:ENSMUSG00000029179
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	4930449I23Rik
Expression	Ubiquitous expression in CNS E11.5 (RPKM 2.3), limb E14.5 (RPKM 2.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

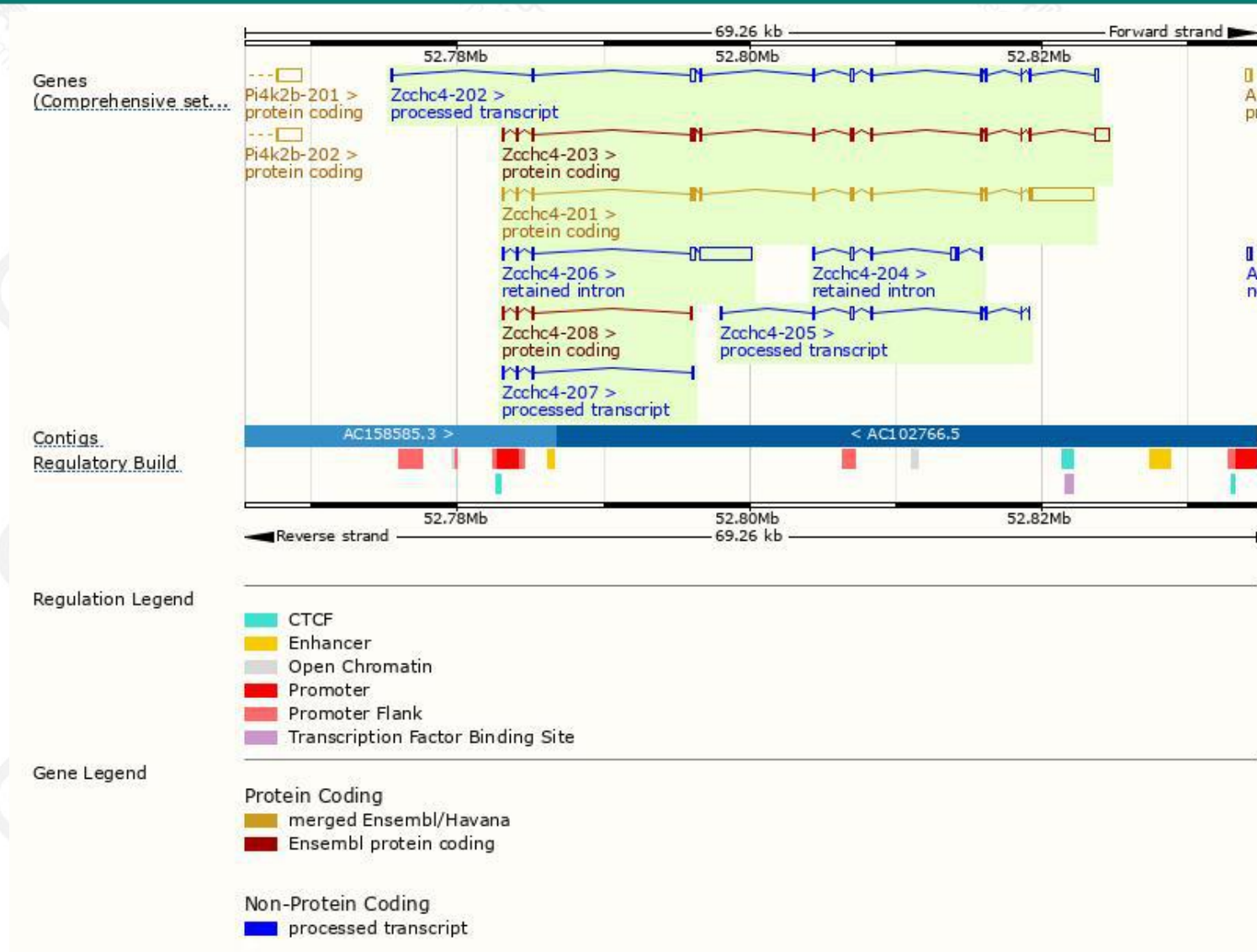
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zcchc4-201	ENSMUST00000031077.13	5743	512aa	Protein coding	CCDS39087		TSL:1 , GENCODE basic , APPRIS P3 ,
Zcchc4-203	ENSMUST00000113904.9	2485	489aa	Protein coding	CCDS80282		TSL:1 , GENCODE basic , APPRIS ALT2 ,
Zcchc4-208	ENSMUST00000199840.2	430	143aa	Protein coding	-		CDS 5' and 3' incomplete , TSL:3 ,
Zcchc4-202	ENSMUST00000113901.8	1554	No protein	Processed transcript	-		TSL:1 ,
Zcchc4-205	ENSMUST00000149612.8	755	No protein	Processed transcript	-		TSL:5 ,
Zcchc4-207	ENSMUST00000198465.2	373	No protein	Processed transcript	-		TSL:3 ,
Zcchc4-206	ENSMUST00000157074.6	4194	No protein	Retained intron	-		TSL:2 ,
Zcchc4-204	ENSMUST00000143745.2	812	No protein	Retained intron	-		TSL:3 ,

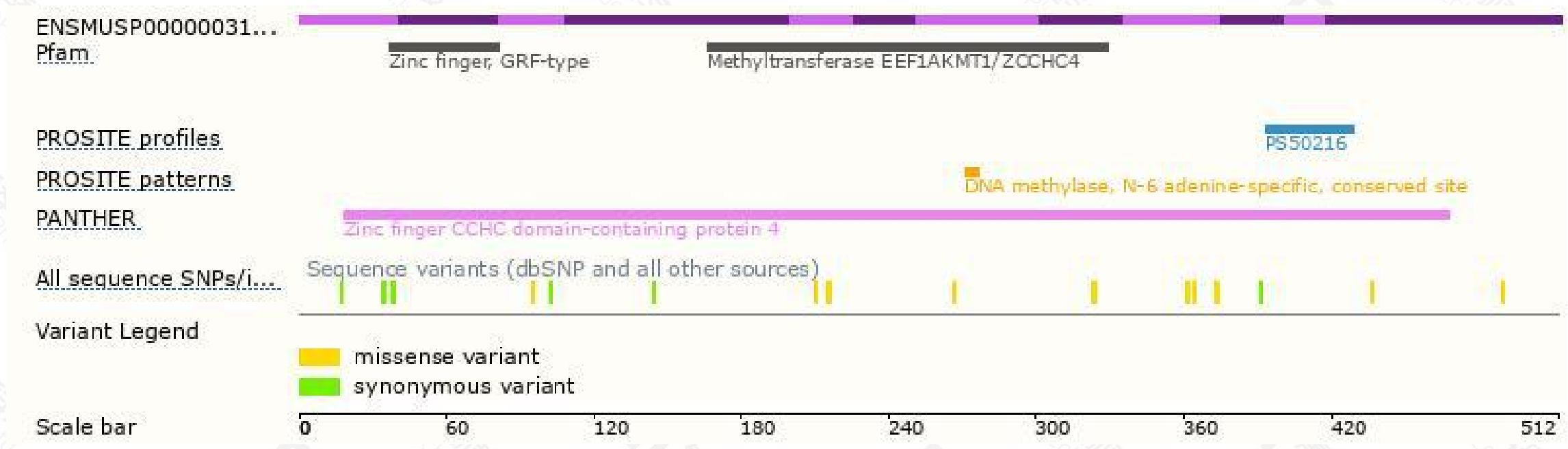
The strategy is based on the design of *Zcchc4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

