

***Zkscan2* Cas9-KO Strategy**

Designer: Xueting Zhang

Reviewer: Daohua Xu

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Project Overview

Project Name

Zkscan2

Project type

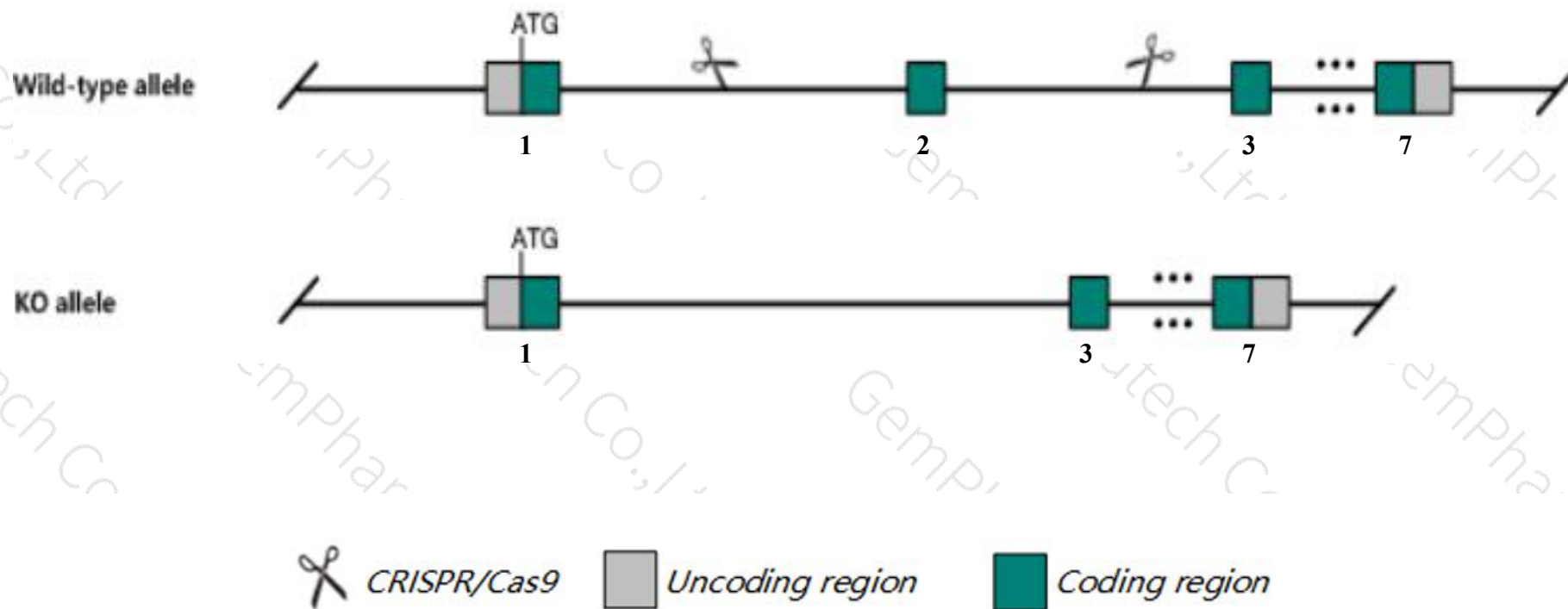
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zkscan2* gene. The schematic diagram is as follows:



Technical routes

- The *Zkscan2* gene has 4 transcripts. According to the structure of *Zkscan2* gene, exon2 of *Zkscan2*-201(ENSMUST00000042470.13) transcript is recommended as the knockout region. The region contains 187bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zkscan2* 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 *Zkscan2* gene is located on the Chr7. 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.
- The effect on transcript *Zkscan2*-202 is unknown.
- Transcript *Zkscan2*-204 may not be affected.
- The N-terminal of *Zkscan2* gene will remain several amino acids ,it may remain the partial function of *Zkscan2* gene.
- 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)

Zkscan2 zinc finger with KRAB and SCAN domains 2 [Mus musculus (house mouse)]

Gene ID: 210162, updated on 13-Mar-2020

Summary



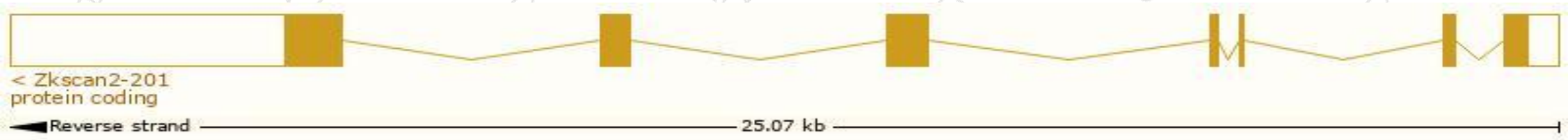
Official Symbol	Zkscan2 provided by MGI
Official Full Name	zinc finger with KRAB and SCAN domains 2 provided by MGI
Primary source	MGI:MGI:2444060
See related	Ensembl:ENSMUSG00000030757
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9430065N20Rik, AW493225, Zfp694
Expression	Biased expression in CNS E18 (RPKM 4.7), whole brain E14.5 (RPKM 4.1) and 8 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

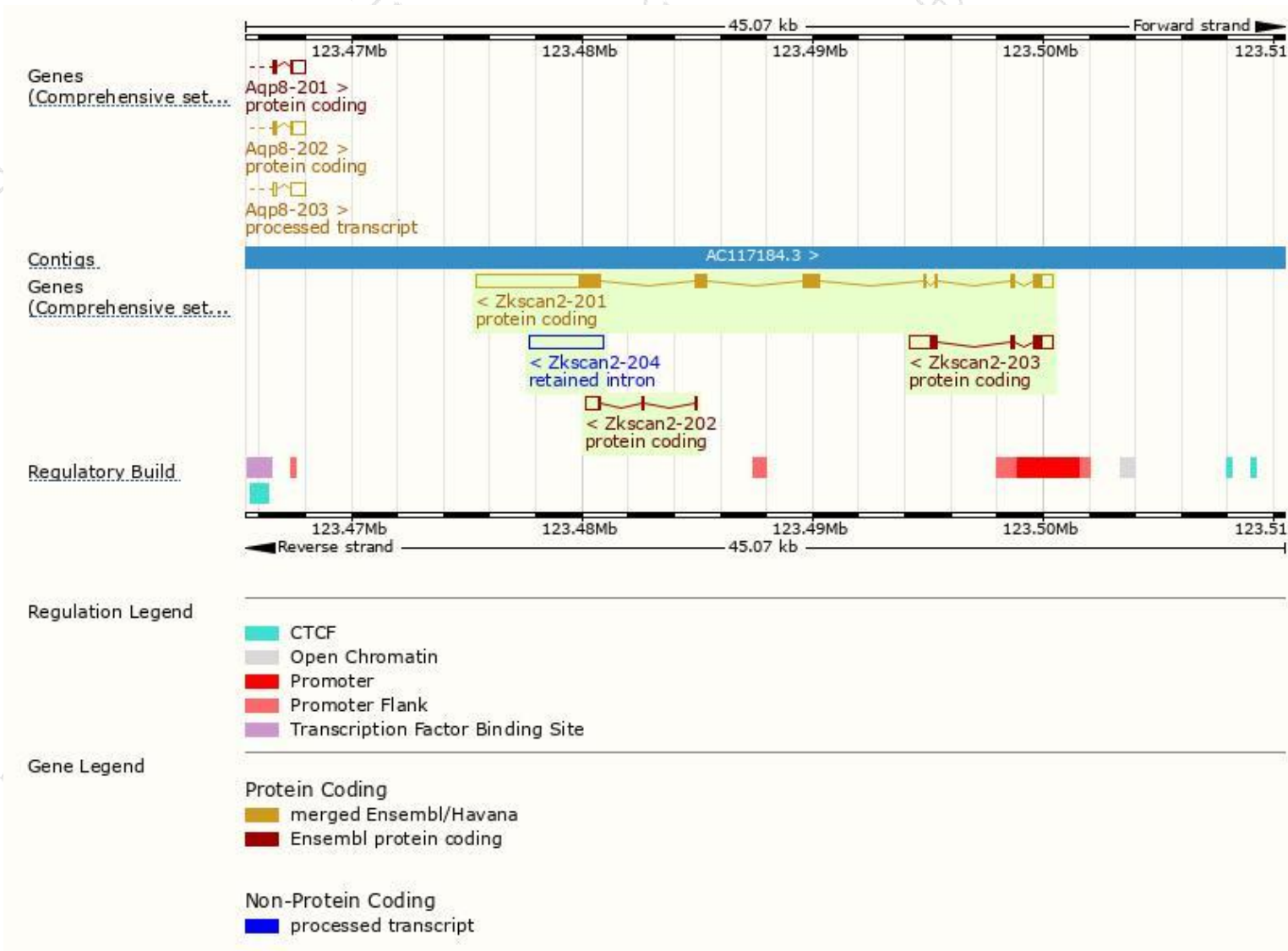
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zkscan2-201	ENSMUST00000042470.13	7831	960aa	Protein coding	CCDS40119	G3X952	TSL:1 GENCODE basic APPRIS P1
Zkscan2-203	ENSMUST00000128217.1	2218	271aa	Protein coding	-	G3UZ80	TSL:1 GENCODE basic
Zkscan2-202	ENSMUST00000125356.1	713	42aa	Protein coding	-	F7BPE8	CDS 5' incomplete TSL:3
Zkscan2-204	ENSMUST00000206148.1	3186	No protein	Retained intron	-	-	TSL:NA

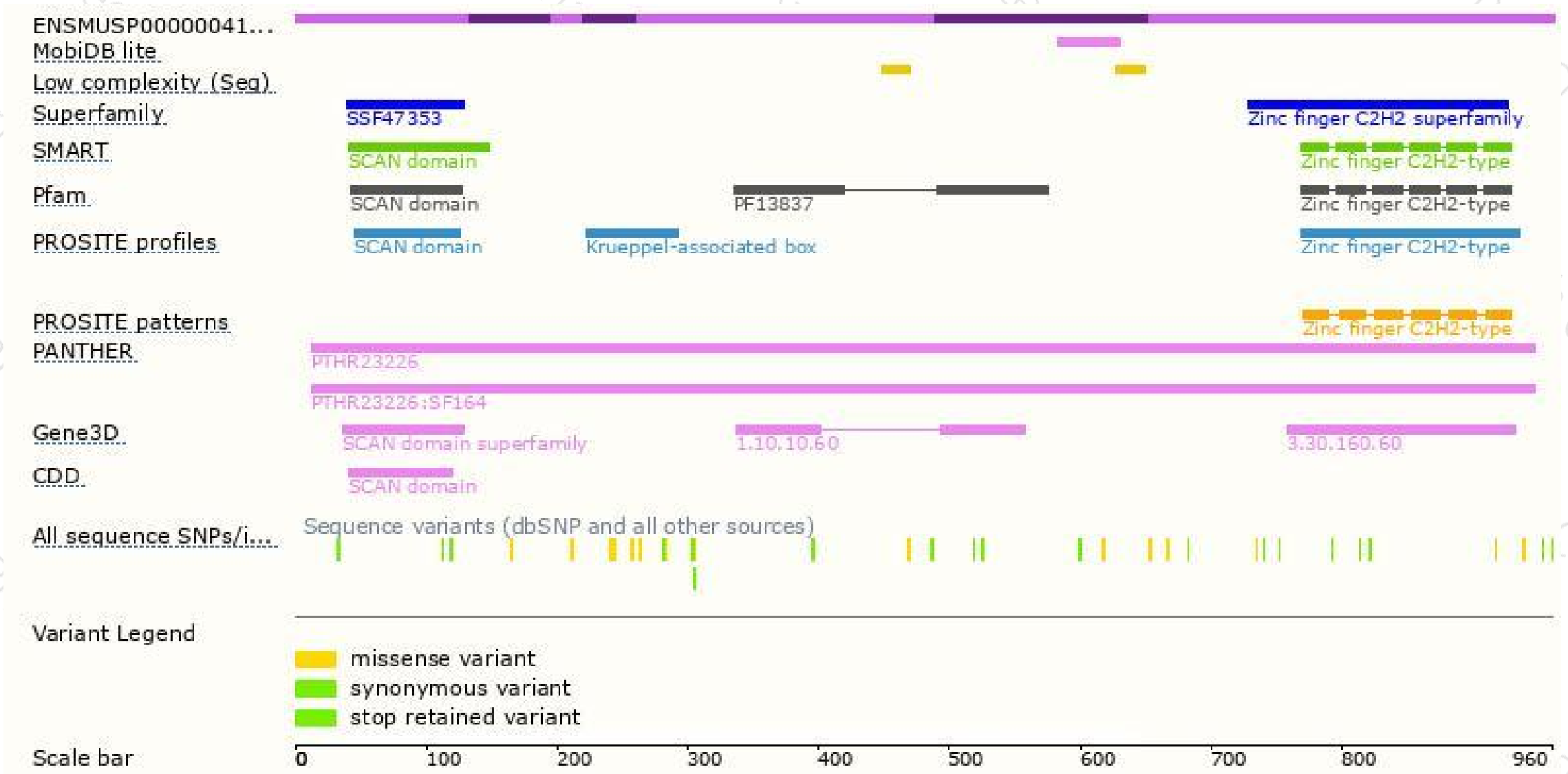
The strategy is based on the design of *Zkscan2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

