

***Zbtb11* Cas9-CKO Strategy**

Designer: Xueting Zhang

Reviewer: Daohua Xu

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Project Overview

Project Name

Zbtb11

Project type

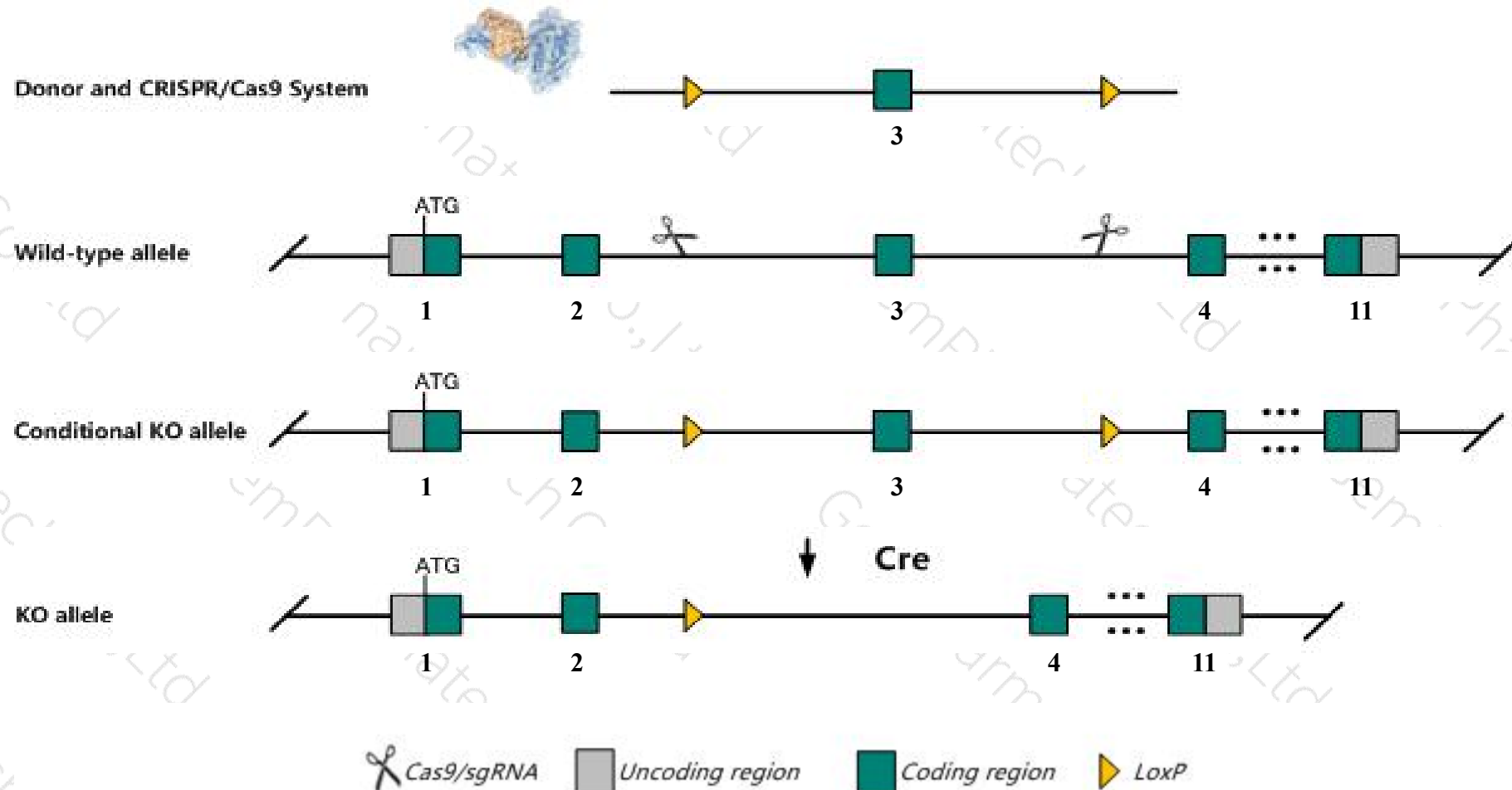
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zbtb11* gene. The schematic diagram is as follows:



Technical routes

- The *Zbtb11* gene has 3 transcripts. According to the structure of *Zbtb11* gene, exon3 of *Zbtb11-201*(ENSMUST00000050248.8) transcript is recommended as the knockout region. The region contains 232bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zbtb11* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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 *Zbtb11* gene is located on the Chr16. 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 N-terminal of *Zbtb11* gene will remain several amino acids ,it may remain the partial function of *Zbtb11* gene.
- The floxed region is near to the C-terminal of *Gm28037* gene,this strategy may influence the regulatory function of the C-terminal of *Gm28037* gene.
- 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)

Zbtb11 zinc finger and BTB domain containing 11 [Mus musculus (house mouse)]

Gene ID: 271377, updated on 13-Mar-2020

Summary



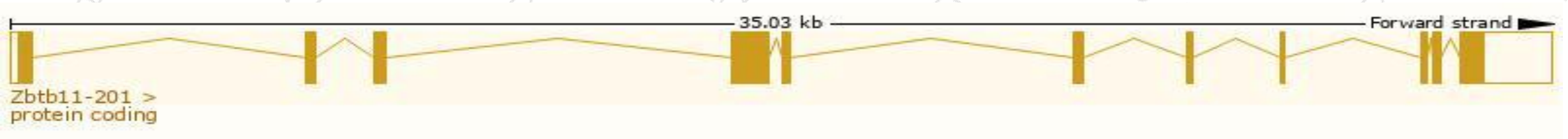
Official Symbol	Zbtb11 provided by MGI
Official Full Name	zinc finger and BTB domain containing 11 provided by MGI
Primary source	MGI:MGI:2443876
See related	Ensembl:ENSMUSG00000022601
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9230110G02Rik, ZNF-U69274
Expression	Ubiquitous expression in adrenal adult (RPKM 7.2), cerebellum adult (RPKM 5.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

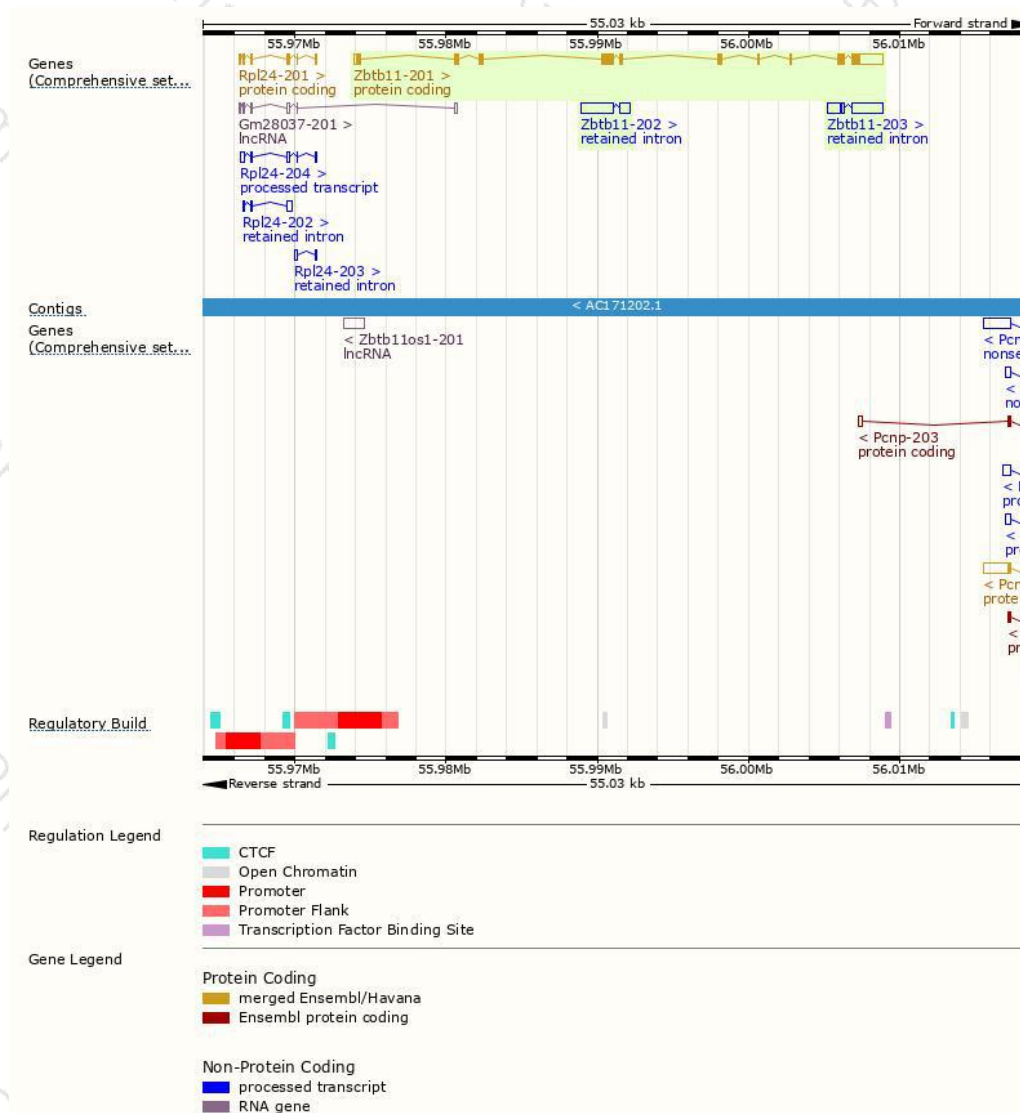
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zbtb11-201	ENSMUST00000050248.8	4920	1050aa	Protein coding	CCDS49874	G5E8B9	TSL:5 GENCODE basic APPRIS P1
Zbtb11-203	ENSMUST00000184618.1	3159	No protein	Retained intron	-	-	TSL:1
Zbtb11-202	ENSMUST00000183440.1	2815	No protein	Retained intron	-	-	TSL:1

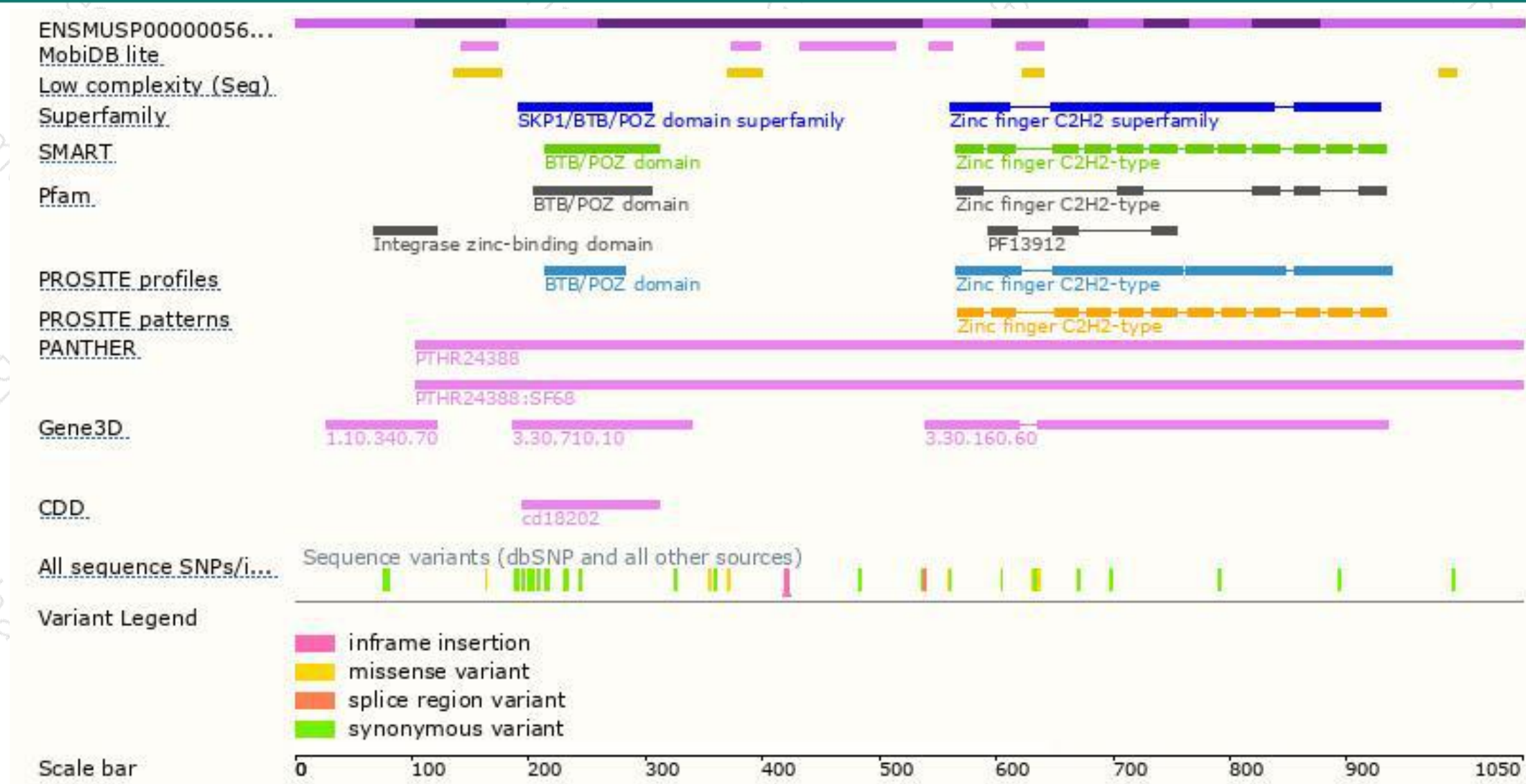
The strategy is based on the design of *Zbtb11-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

