

Zfp317 Cas9-CKO Strategy

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Project Overview

Project Name

Zfp317

Project type

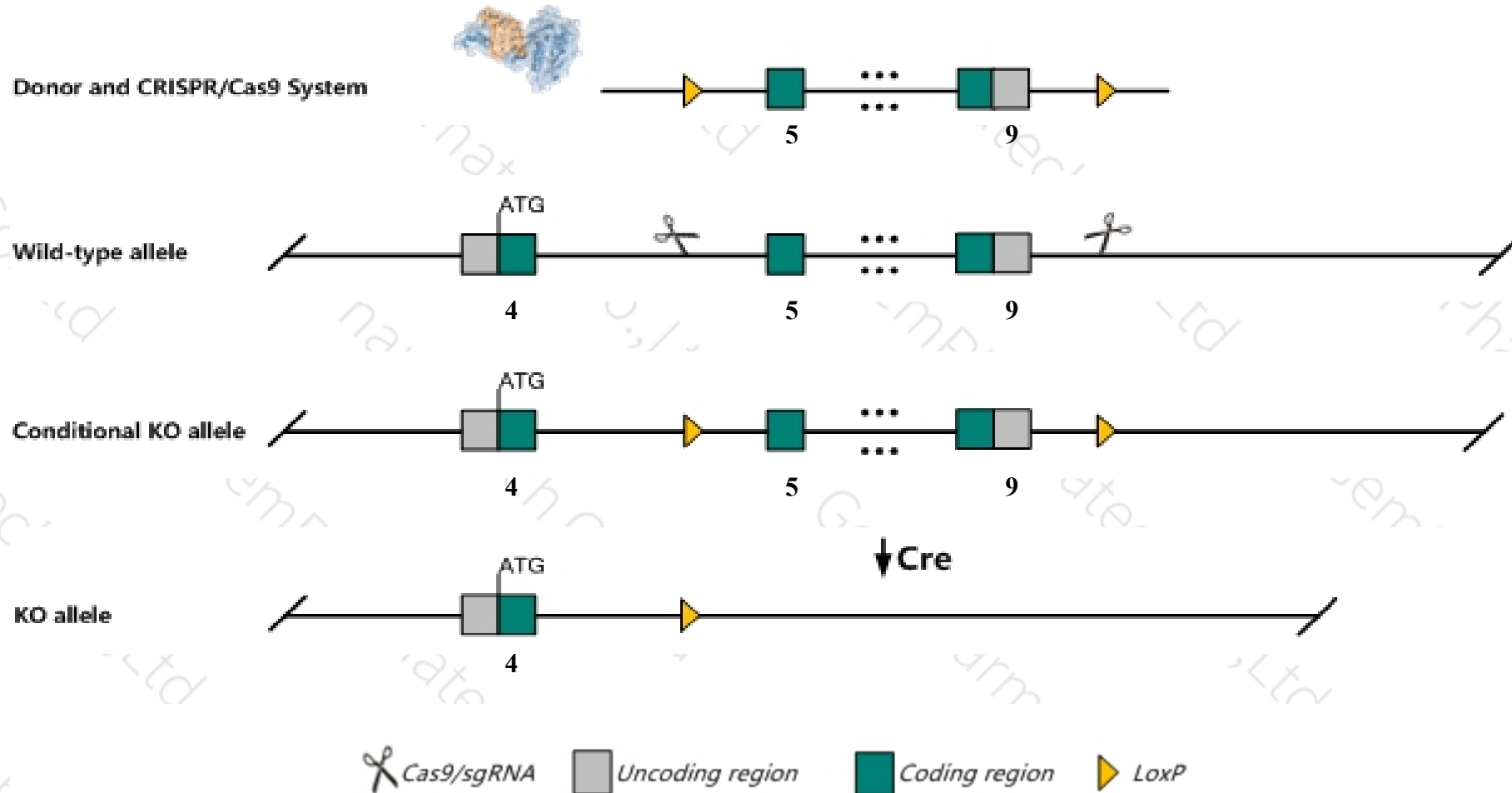
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp317* gene. The schematic diagram is as follows:



Technical routes

- The *Zfp317* gene has 5 transcripts. According to the structure of *Zfp317* gene, exon5-exon9 of *Zfp317*-202(ENSMUST00000208694.1) transcript is recommended as the knockout region. The region contains 1793bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp317* 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 *Zfp317* gene is located on the Chr9. 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)

Zfp317 zinc finger protein 317 [Mus musculus (house mouse)]

Gene ID: 244713, updated on 13-Mar-2020

Summary



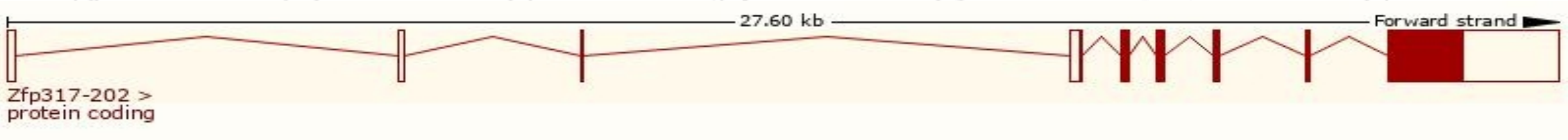
Official Symbol	Zfp317 provided by MGI
Official Full Name	zinc finger protein 317 provided by MGI
Primary source	MGI:MGI:107775
See related	Ensembl:ENSMUSG00000057551
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4932416G03, D230022C05Rik, KRAB9, Zfp67, Zfp75, mszf40
Expression	Ubiquitous expression in CNS E18 (RPKM 4.1), CNS E11.5 (RPKM 4.0) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

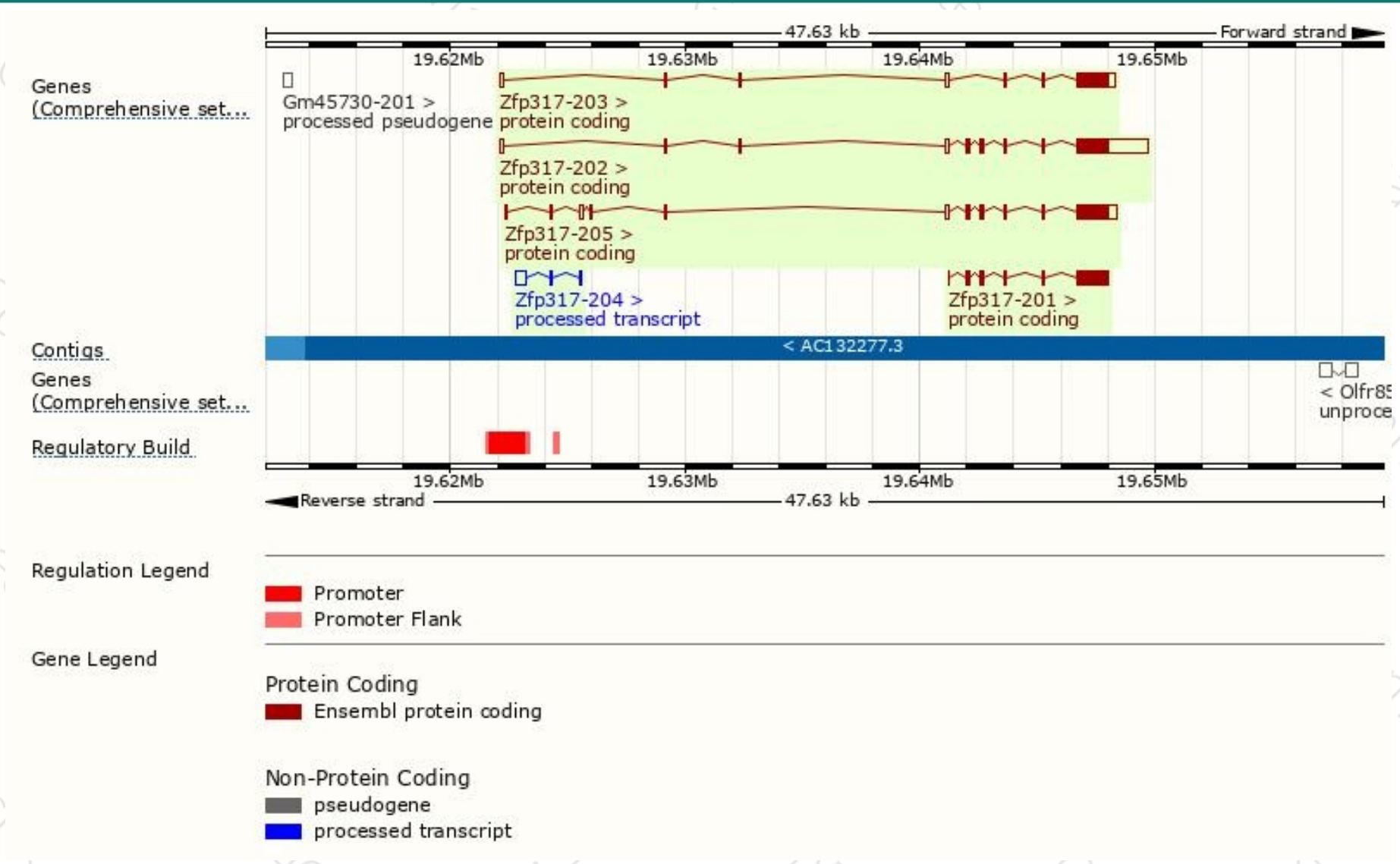
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp317-202	ENSMUST00000208694.1	3988	607aa	Protein coding	CCDS22862	Q8C0Q5	TSL:1 GENCODE basic APPRIS P1
Zfp317-205	ENSMUST00000215372.1	2809	607aa	Protein coding	CCDS22862	Q8C0Q5	TSL:1 GENCODE basic APPRIS P1
Zfp317-201	ENSMUST00000079042.6	1824	607aa	Protein coding	CCDS22862	Q8C0Q5	TSL:2 GENCODE basic APPRIS P1
Zfp317-203	ENSMUST00000213725.1	2354	518aa	Protein coding	-	Q8BLF0	TSL:1 GENCODE basic
Zfp317-204	ENSMUST00000214731.1	563	No protein	Processed transcript	-	-	TSL:3

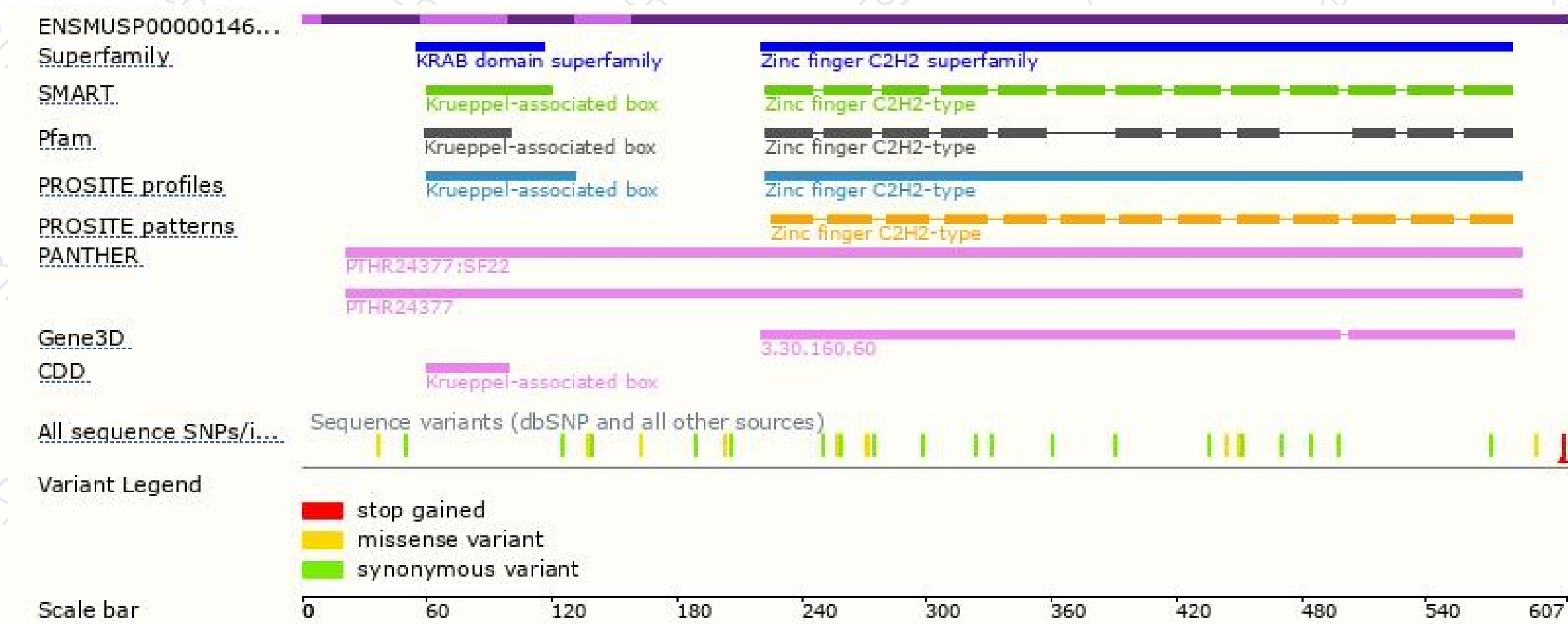
The strategy is based on the design of *Zfp317-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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