

Zfp219 Cas9-CKO Strategy

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Project Overview

Project Name

Zfp219

Project type

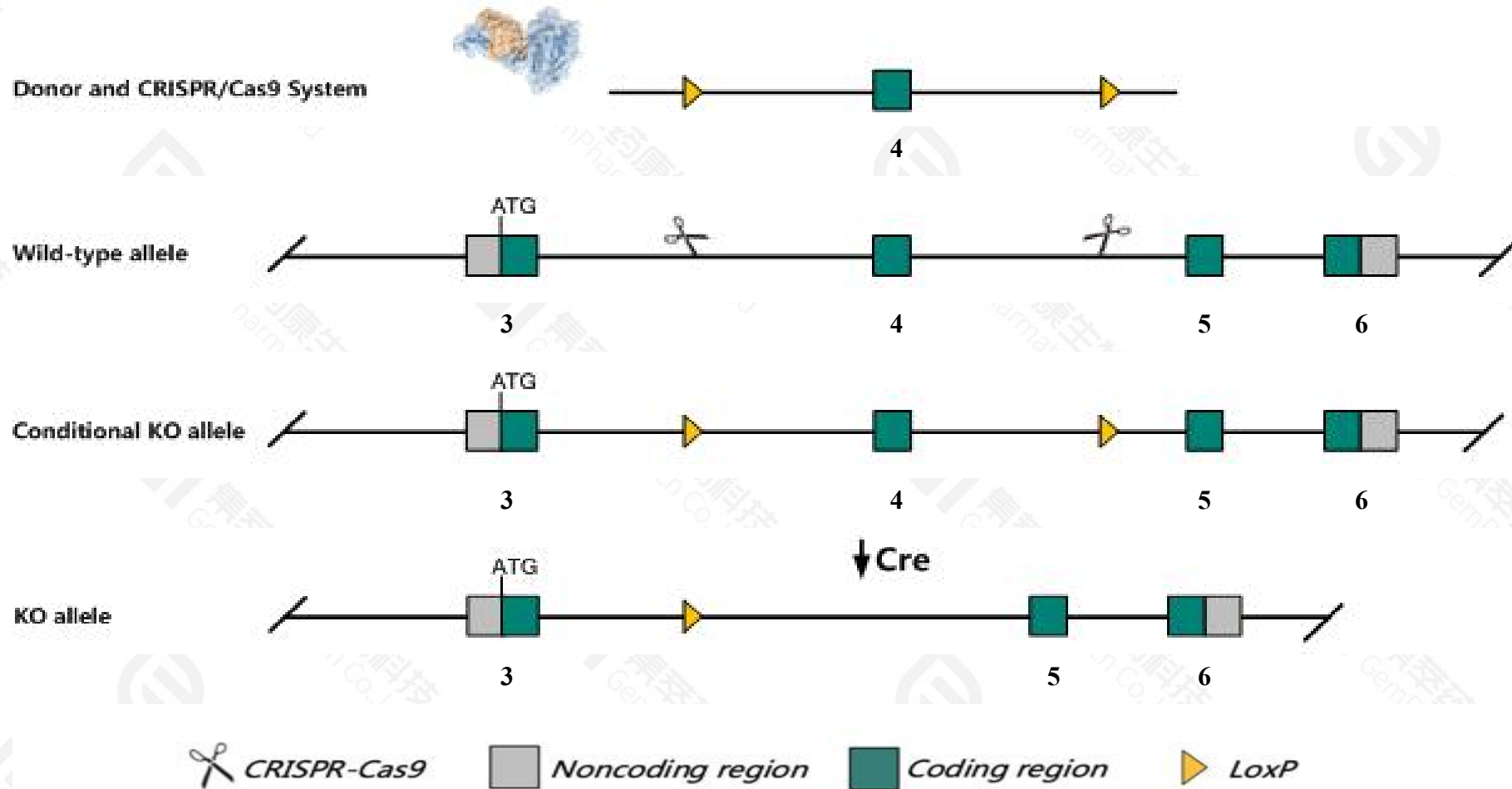
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR-Cas9 technology to edit the *Zfp219* gene. The schematic diagram is as follows:



- The *Zfp219* gene has 13 transcripts. According to the structure of *Zfp219* gene, exon 4 of *Zfp219-202*(ENSMUST00000166169.4) transcript is recommended as the knockout region. The region contains 1435bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Zfp219* 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 Intron3 and Intron4 are only 307 bp and 732 bp, loxp insertion may affect mRNA splicing.
- The *Zfp219* gene is located on the Chr14. 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)

Zfp219 zinc finger protein 219 [Mus musculus (house mouse)]

Gene ID: 69890, updated on 23-Jun-2022

Summary



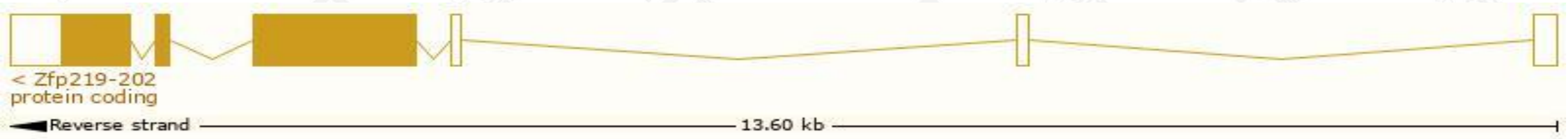
Official Symbol	Zfp219 provided by MGI
Official Full Name	zinc finger protein 219 provided by MGI
Primary source	MGI:MGI:1917140
See related	Ensembl:ENSMUSG00000049295
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2010302A17Rik, Znf219
Expression	Ubiquitous expression in thymus adult (RPKM 27.5), CNS E11.5 (RPKM 23.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

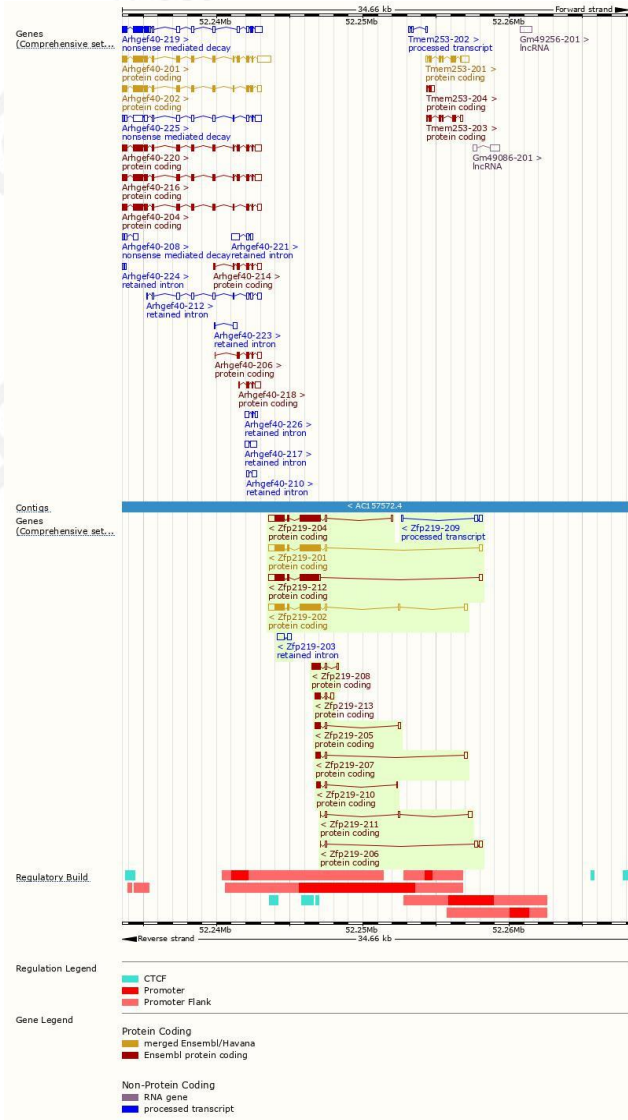
The gene has 13 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp219-202	ENSMUST00000166169.4	3017	726aa	Protein coding	CCDS36916		TSL:1 , GENCODE basic , APPRIS P2 ,
Zfp219-201	ENSMUST00000067549.15	2933	726aa	Protein coding	CCDS36916		TSL:1 , GENCODE basic , APPRIS P2 ,
Zfp219-204	ENSMUST00000226522.2	2804	726aa	Protein coding	CCDS36916		GENCODE basic , APPRIS P2 ,
Zfp219-212	ENSMUST00000228580.2	2812	681aa	Protein coding	-		GENCODE basic , APPRIS ALT2 ,
Zfp219-208	ENSMUST00000226964.2	787	201aa	Protein coding	-		CDS 3' incomplete ,
Zfp219-213	ENSMUST00000228747.2	719	141aa	Protein coding	-		CDS 3' incomplete ,
Zfp219-205	ENSMUST00000226527.2	657	131aa	Protein coding	-		CDS 3' incomplete ,
Zfp219-207	ENSMUST00000226605.2	630	109aa	Protein coding	-		CDS 3' incomplete ,
Zfp219-206	ENSMUST00000226554.2	495	10aa	Protein coding	-		CDS 3' incomplete ,
Zfp219-211	ENSMUST00000228162.2	480	14aa	Protein coding	-		CDS 3' incomplete ,
Zfp219-210	ENSMUST00000228051.2	431	95aa	Protein coding	-		CDS 3' incomplete ,
Zfp219-209	ENSMUST00000227420.2	465	No protein	Processed transcript	-		
Zfp219-203	ENSMUST00000226474.2	747	No protein	Retained intron	-		

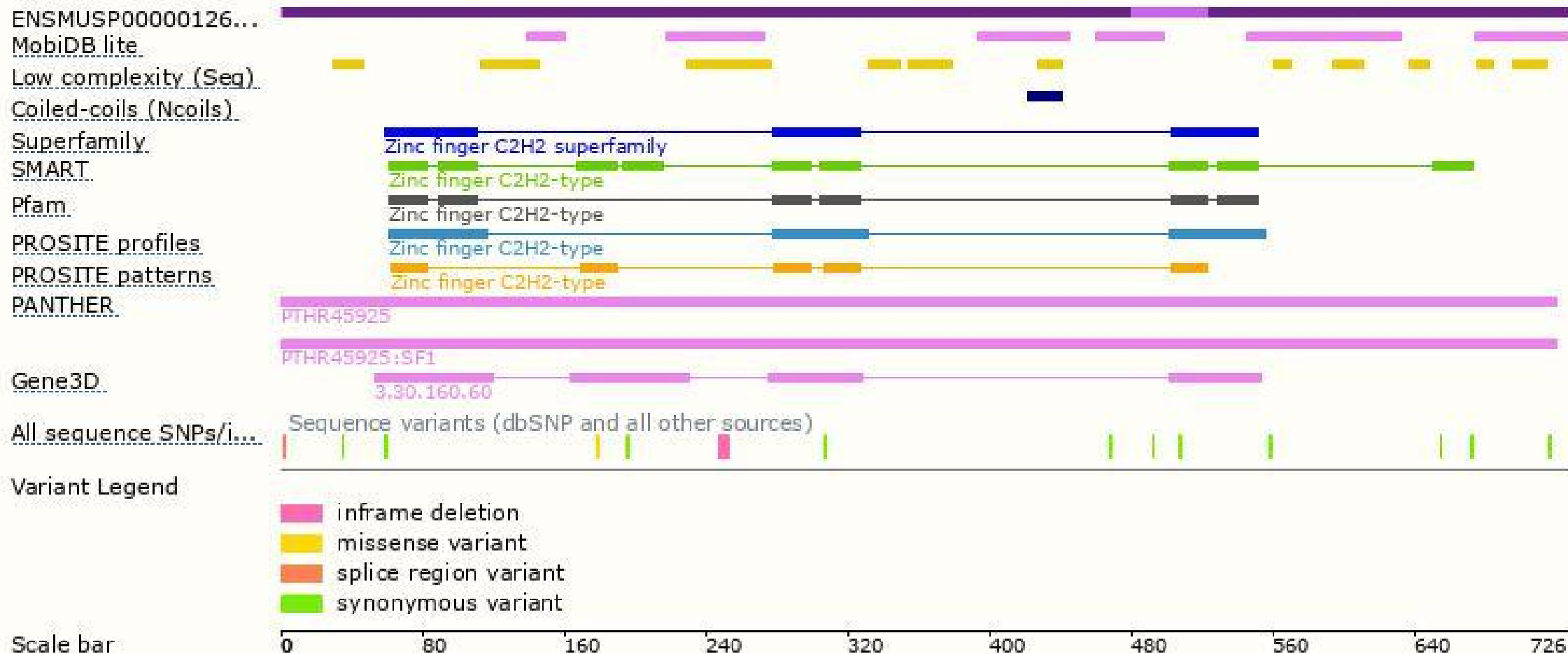
The strategy is based on the design of *Zfp219-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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