

Zfp131 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Zfp131

Project type

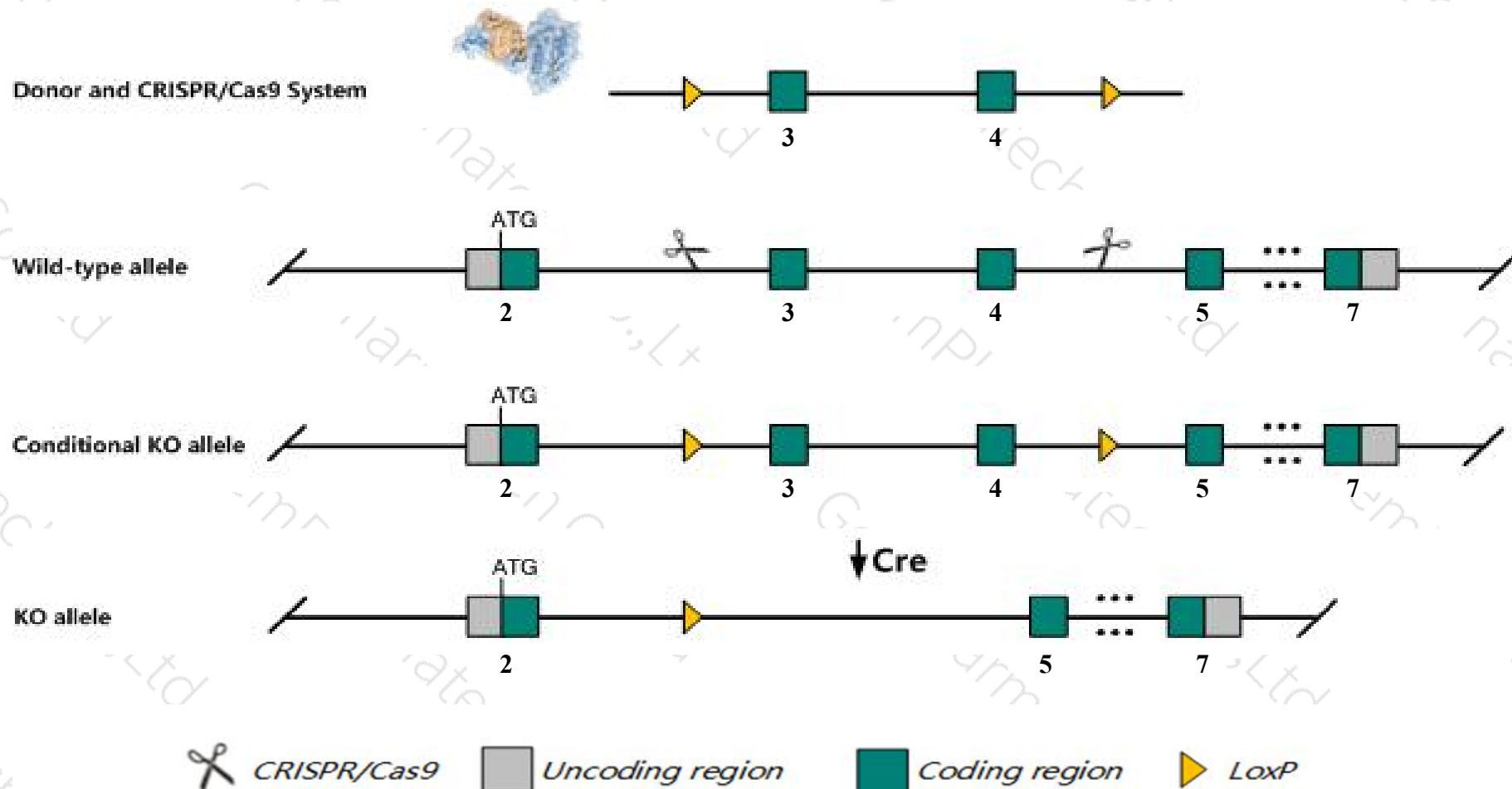
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp131* gene. The schematic diagram is as follows:



- The *Zfp131* gene has 9 transcripts. According to the structure of *Zfp131* gene, exon3-exon4 of *Zfp131*-203 (ENSMUST00000223722.1) transcript is recommended as the knockout region. The region contains 247bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp131* 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.

Notice

- The *Zfp131* gene is located on the Chr13. 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.
- Transcript 204 CDS 5' incomplete the influences is unknown.
- 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)

Zfp131 zinc finger protein 131 [Mus musculus (house mouse)]

Gene ID: 72465, updated on 31-Jan-2019

Summary



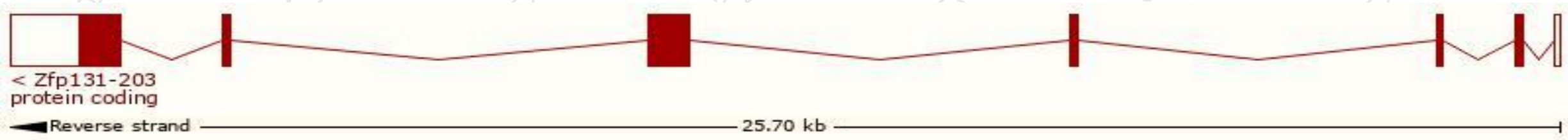
Official Symbol	Zfp131 provided by MGI
Official Full Name	zinc finger protein 131 provided by MGI
Primary source	MGI:MGI:1919715
See related	Ensembl:ENSMUSG00000094870
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610109I01Rik, AW558871, Znf131
Summary	This gene encodes a member of the BTB/POZ family of transcription factors. This protein has been found to act as a transcriptional activator and may regulate estrogen receptor signaling. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Oct 2014]
Expression	Ubiquitous expression in CNS E11.5 (RPKM 11.2), CNS E14 (RPKM 8.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

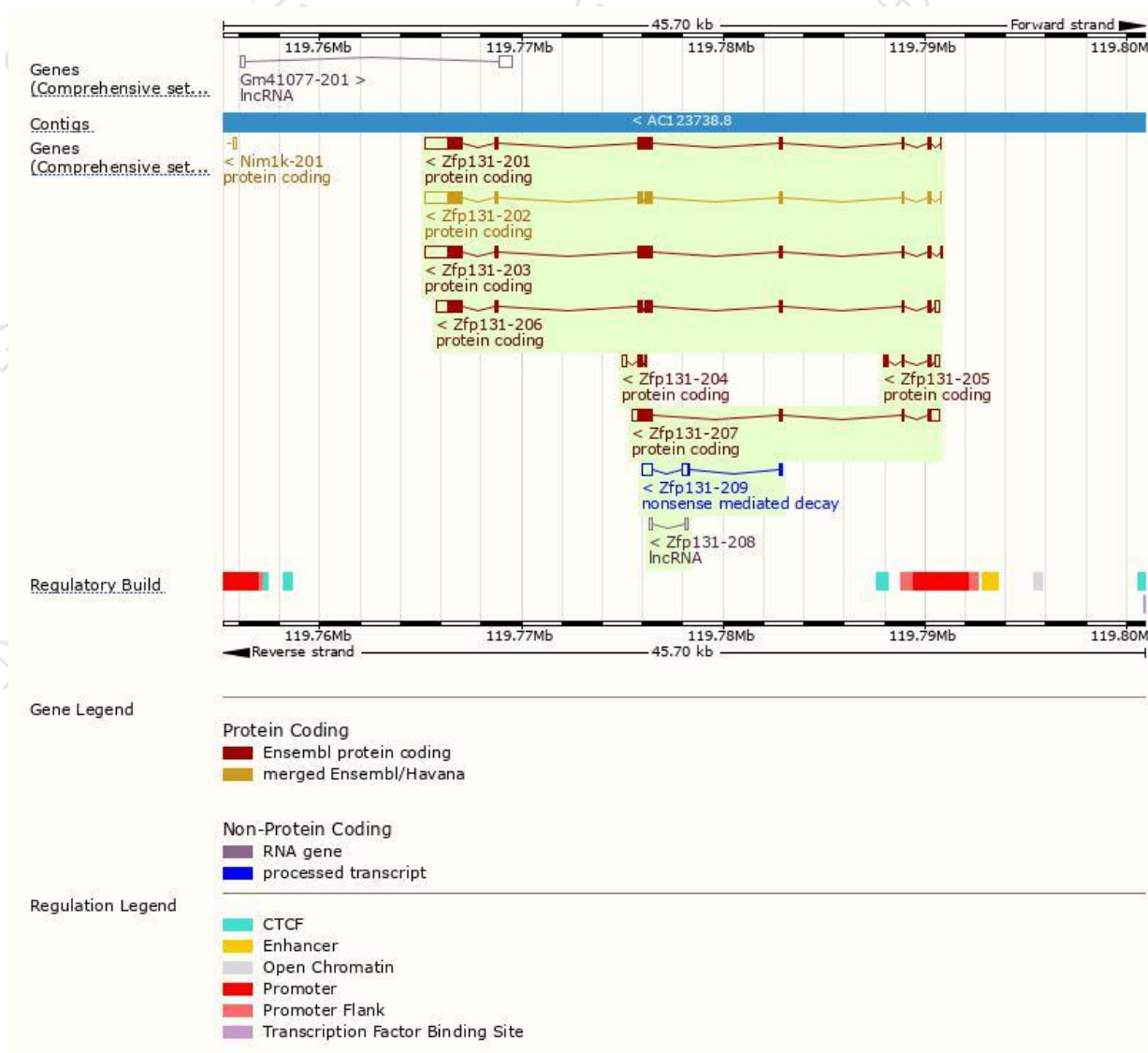
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp131-203	ENSMUST00000223722.1	3109	619aa	Protein coding	CCDS79245	Q8K3J5	GENCODE basic APPRIS ALT2
Zfp131-201	ENSMUST00000177916.7	3067	619aa	Protein coding	CCDS79245	Q8K3J5	TSL:1 GENCODE basic APPRIS ALT2
Zfp131-202	ENSMUST00000178271.2	2966	585aa	Protein coding	CCDS56903	Q8K3J5	TSL:1 GENCODE basic APPRIS P3
Zfp131-206	ENSMUST00000223813.1	2561	585aa	Protein coding	CCDS56903	Q8K3J5	GENCODE basic APPRIS P3
Zfp131-207	ENSMUST00000224946.1	1783	353aa	Protein coding	-	Q8K3J5	GENCODE basic
Zfp131-205	ENSMUST00000223812.1	663	112aa	Protein coding	-	A0A286YDW0	GENCODE basic
Zfp131-204	ENSMUST00000223797.1	522	103aa	Protein coding	-	A0A286YCJ2	CDS 5' incomplete
Zfp131-209	ENSMUST00000225484.1	889	62aa	Nonsense mediated decay	-	A0A286YDU7	CDS 5' incomplete
Zfp131-208	ENSMUST00000224969.1	255	No protein	lncRNA	-	-	

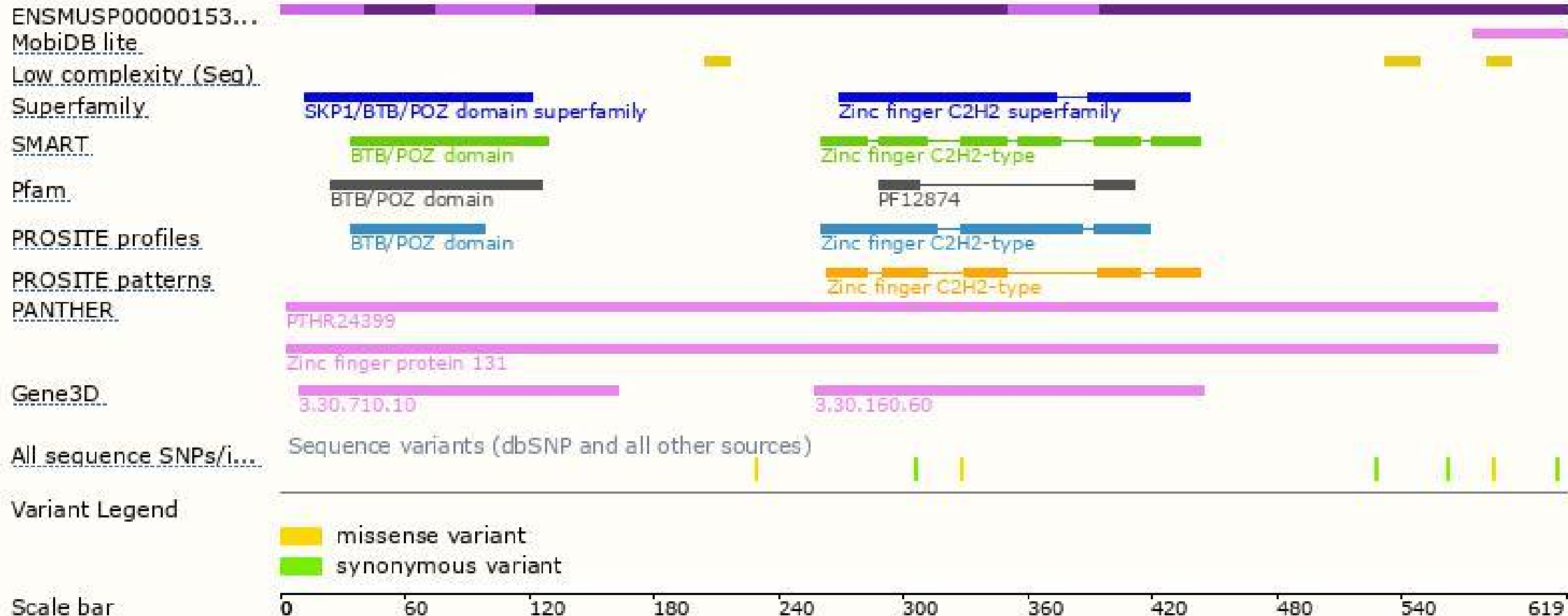
The strategy is based on the design of *Zfp131-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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