

Zfp1 Cas9-CKO Strategy

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Project Overview

Project Name

Zfp1

Project type

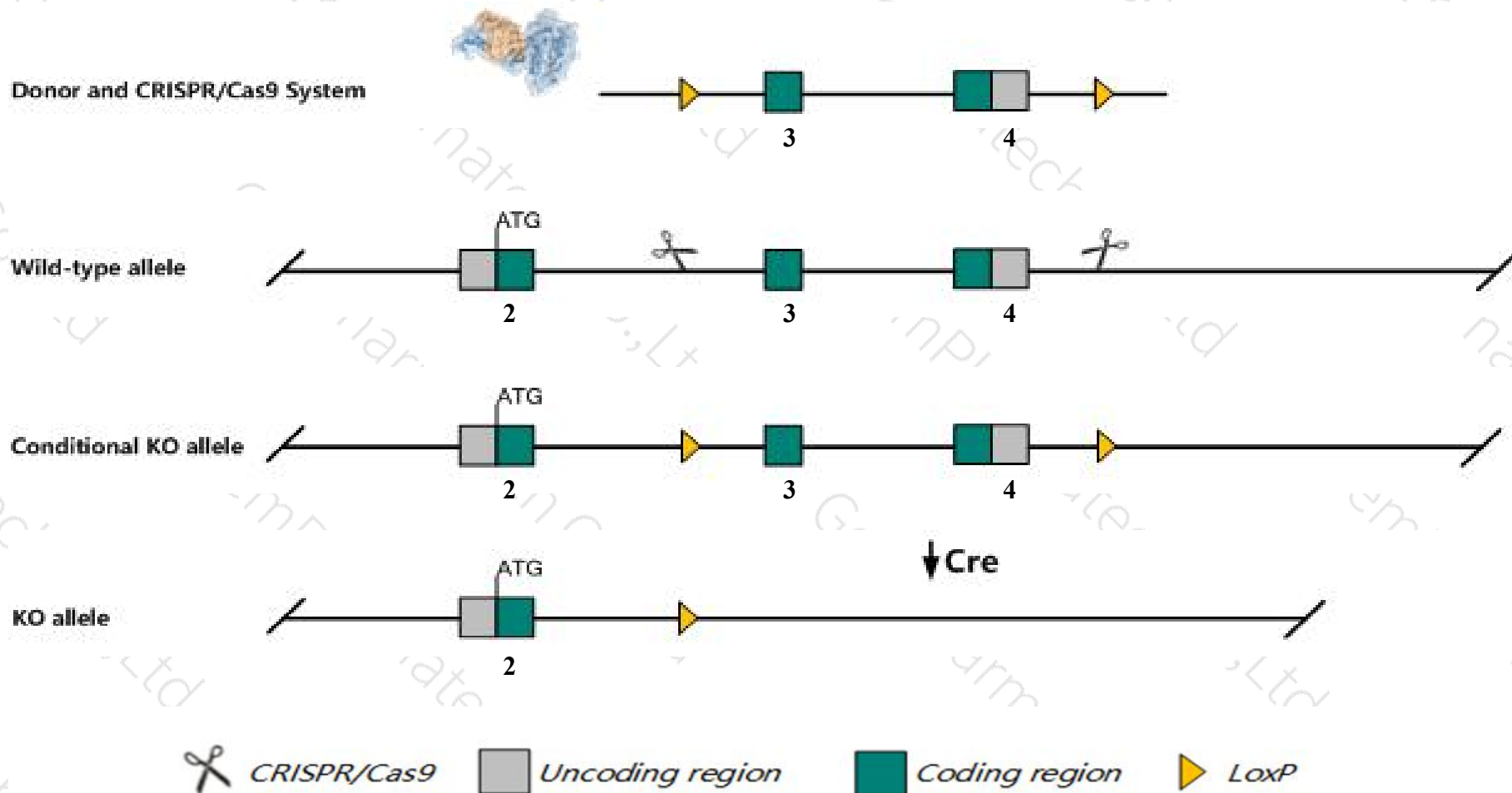
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp1* gene. The schematic diagram is as follows:



Technical routes

- The *Zfp1* gene has 4 transcripts. According to the structure of *Zfp1* gene, exon3-exon4 of *Zfp1-201* (ENSMUST00000077791.7) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp1* 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 *Zfp1* gene is located on the Chr8. 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)

Zfp1 zinc finger protein 1 [Mus musculus (house mouse)]

Gene ID: 22640, updated on 31-Jan-2019

Summary



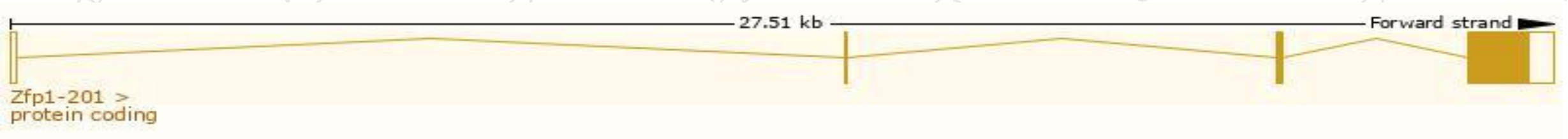
Official Symbol	Zfp1 provided by MGI
Official Full Name	zinc finger protein 1 provided by MGI
Primary source	MGI:MGI:99154
See related	Ensembl:ENSMUSG00000055835
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Fnp-1, Zfp-1, mkr-1
Expression	Ubiquitous expression in CNS E18 (RPKM 7.6), CNS E14 (RPKM 6.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

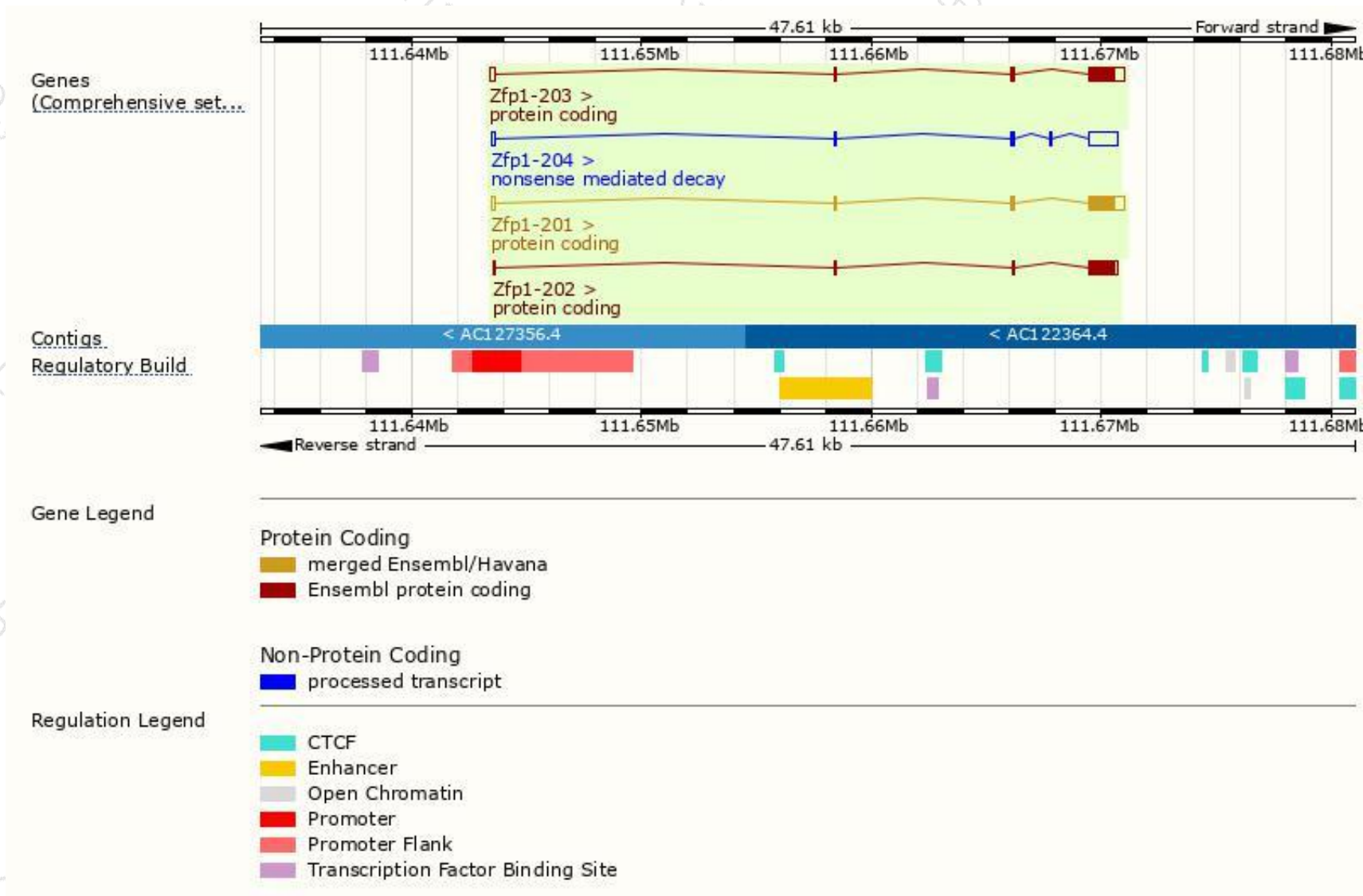
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp1-201	ENSMUST00000077791.7	1811	403aa	Protein coding	CCDS22678	Q3UI68	TSL:1 GENCODE basic APPRIS P1
Zfp1-202	ENSMUST00000211926.1	1409	389aa	Protein coding	CCDS85614	A0A1D5RLC5	TSL:1 GENCODE basic
Zfp1-203	ENSMUST00000212072.1	1930	370aa	Protein coding	-	A0A1D5RLU7	TSL:1 GENCODE basic
Zfp1-204	ENSMUST00000212206.1	1636	64aa	Nonsense mediated decay	-	A0A1D5RLR2	TSL:1

The strategy is based on the design of *Zfp1-201* 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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