

Zfand6 Cas9-CKO Strategy

Designer: Daohua Xu

Reviewer: Huimin Su

Design Date: 2020-9-3

Project Overview

Project Name

Zfand6

Project type

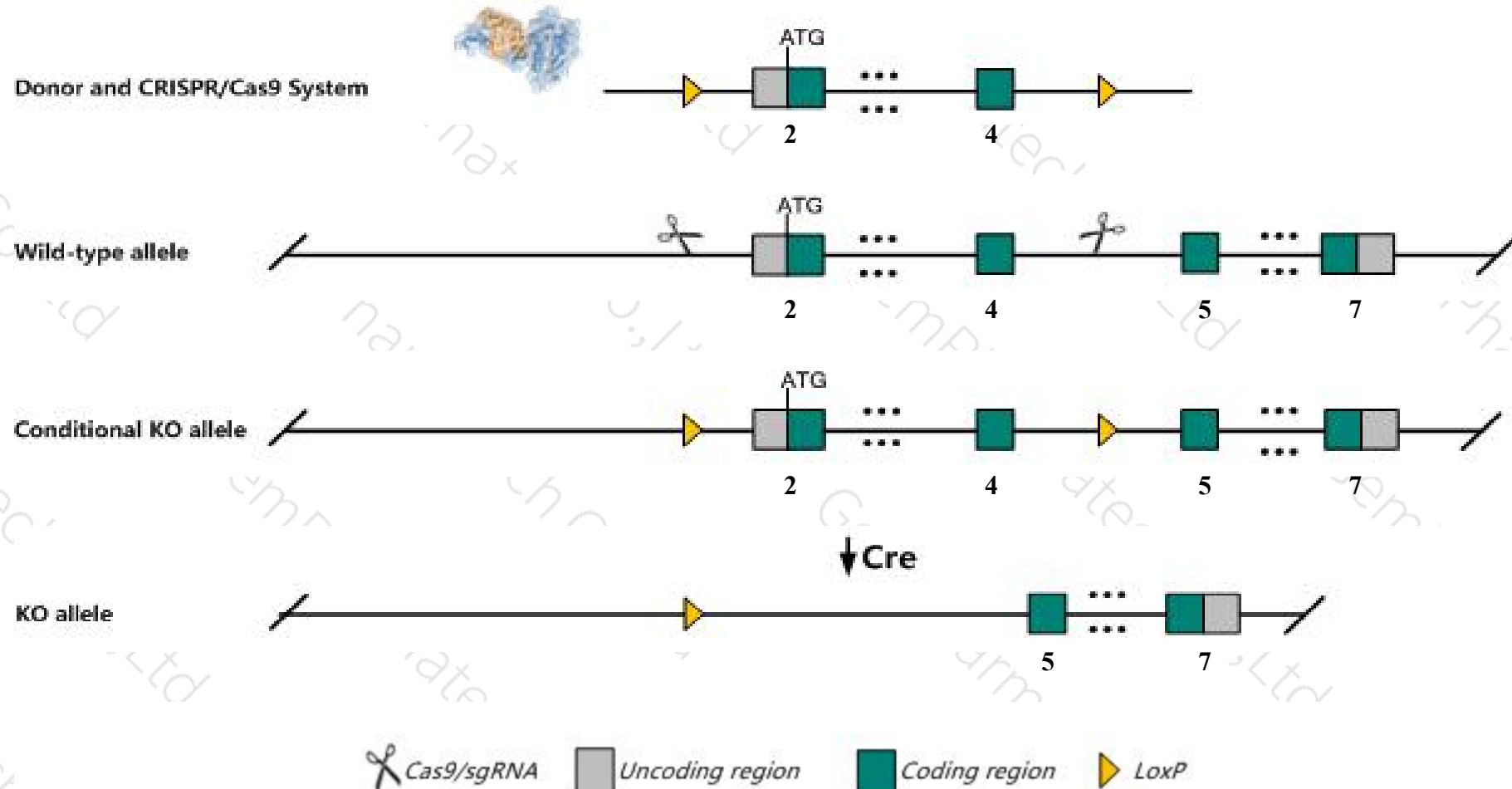
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfand6* gene. The schematic diagram is as follows:



- The *Zfand6* gene has 10 transcripts. According to the structure of *Zfand6* gene, exon2-exon4 of *Zfand6*-208(ENSMUST00000209117.1) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfand6* 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 *Zfand6* gene is located on the Chr7. 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)

Zfand6 zinc finger, AN1-type domain 6 [Mus musculus (house mouse)]

Gene ID: 65098, updated on 13-Mar-2020

Summary



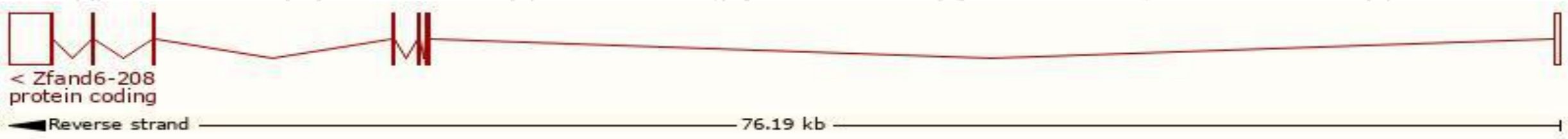
Official Symbol	Zfand6 provided by MGI
Official Full Name	zinc finger, AN1-type domain 6 provided by MGI
Primary source	MGI:MGI:1929510
See related	Ensembl:ENSMUSG00000030629
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	3110005P07Rik, Awp1, Za20d3
Expression	Ubiquitous expression in testis adult (RPKM 49.8), bladder adult (RPKM 34.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

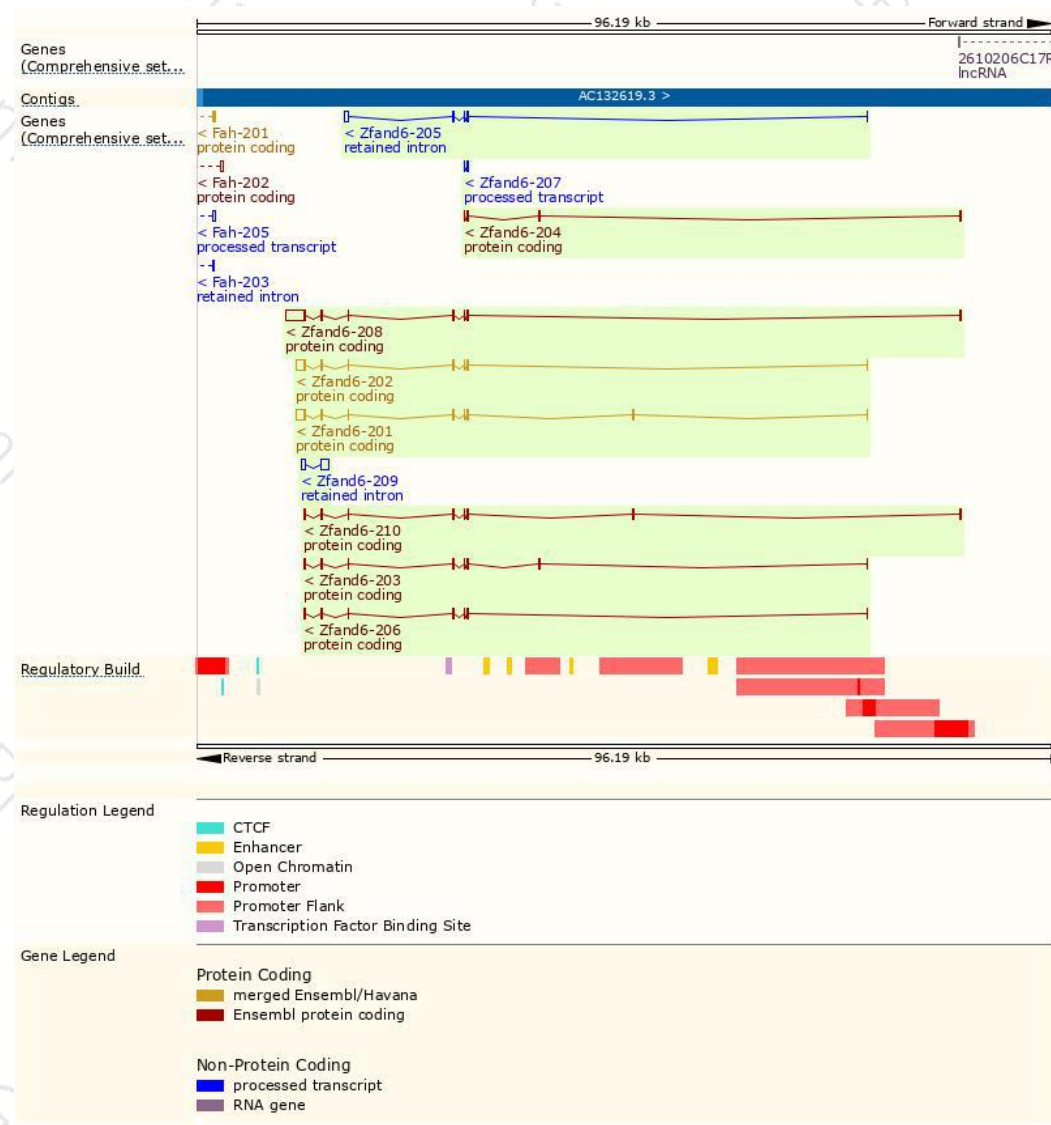
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfand6-208	ENSMUST00000209117.1	2955	223aa	Protein coding	CCDS21419	Q9DCH6	TSL:1 GENCODE basic APPRIS P1
Zfand6-201	ENSMUST00000069537.2	1658	223aa	Protein coding	CCDS21419	Q9DCH6	TSL:1 GENCODE basic APPRIS P1
Zfand6-202	ENSMUST00000178385.8	1538	223aa	Protein coding	CCDS21419	Q9DCH6	TSL:1 GENCODE basic APPRIS P1
Zfand6-210	ENSMUST00000209165.1	967	217aa	Protein coding	-	A0A140LIM2	CDS 3' incomplete TSL:5
Zfand6-203	ENSMUST00000207865.1	792	188aa	Protein coding	-	A0A140LI56	CDS 3' incomplete TSL:5
Zfand6-206	ENSMUST00000208782.1	624	184aa	Protein coding	-	A0A140LJF3	CDS 3' incomplete TSL:3
Zfand6-204	ENSMUST00000207975.1	549	55aa	Protein coding	-	A0A140LHV2	CDS 3' incomplete TSL:5
Zfand6-207	ENSMUST00000208831.1	187	No protein	Processed transcript	-	-	TSL:1
Zfand6-209	ENSMUST00000209140.1	1235	No protein	Retained intron	-	-	TSL:2
Zfand6-205	ENSMUST00000208519.1	899	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Zfand6-208* 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

