

Zfand1 Cas9-CKO Strategy

Designer: Jia Yu

Reviewer: Xiaojing Li

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Project Overview

Project Name

Zfand1

Project type

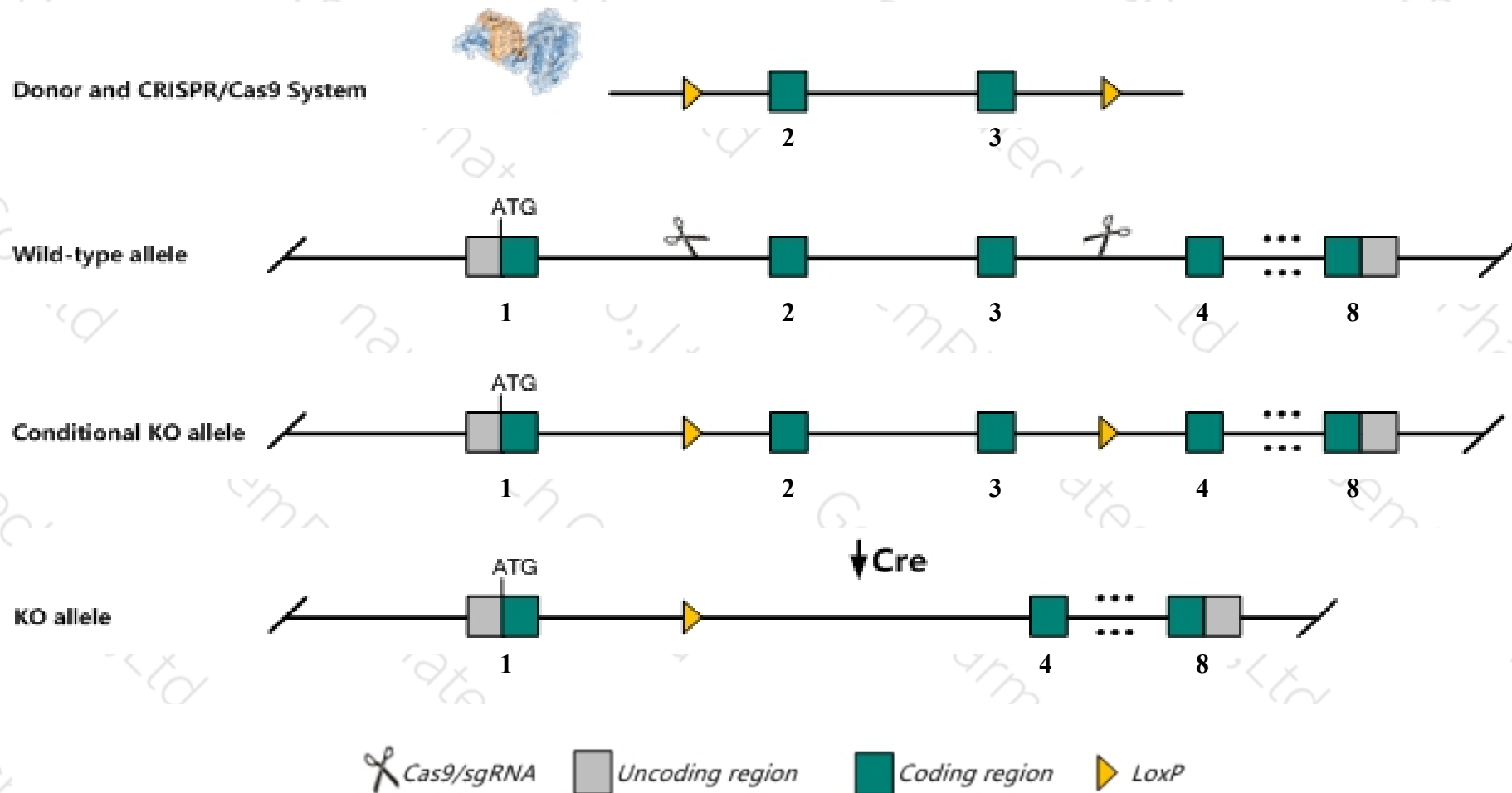
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfand1* gene. The schematic diagram is as follows:



- The *Zfand1* gene has 8 transcripts. According to the structure of *Zfand1* gene, exon2-exon3 of *Zfand1*-201(ENSMUST00000037839.11) transcript is recommended as the knockout region. The region contains 83bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfand1* 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 *Zfand1* gene is located on the Chr3. 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)

Zfand1 zinc finger, AN1-type domain 1 [Mus musculus (house mouse)]

Gene ID: 66361, updated on 13-Mar-2020

Summary



Official Symbol	Zfand1 provided by MGI
Official Full Name	zinc finger, AN1-type domain 1 provided by MGI
Primary source	MGI:MGI:1913611
See related	Ensembl:ENSMUSG00000039795
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	2310008M20Rik, AW048890
Expression	Ubiquitous expression in bladder adult (RPKM 10.1), CNS E11.5 (RPKM 8.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

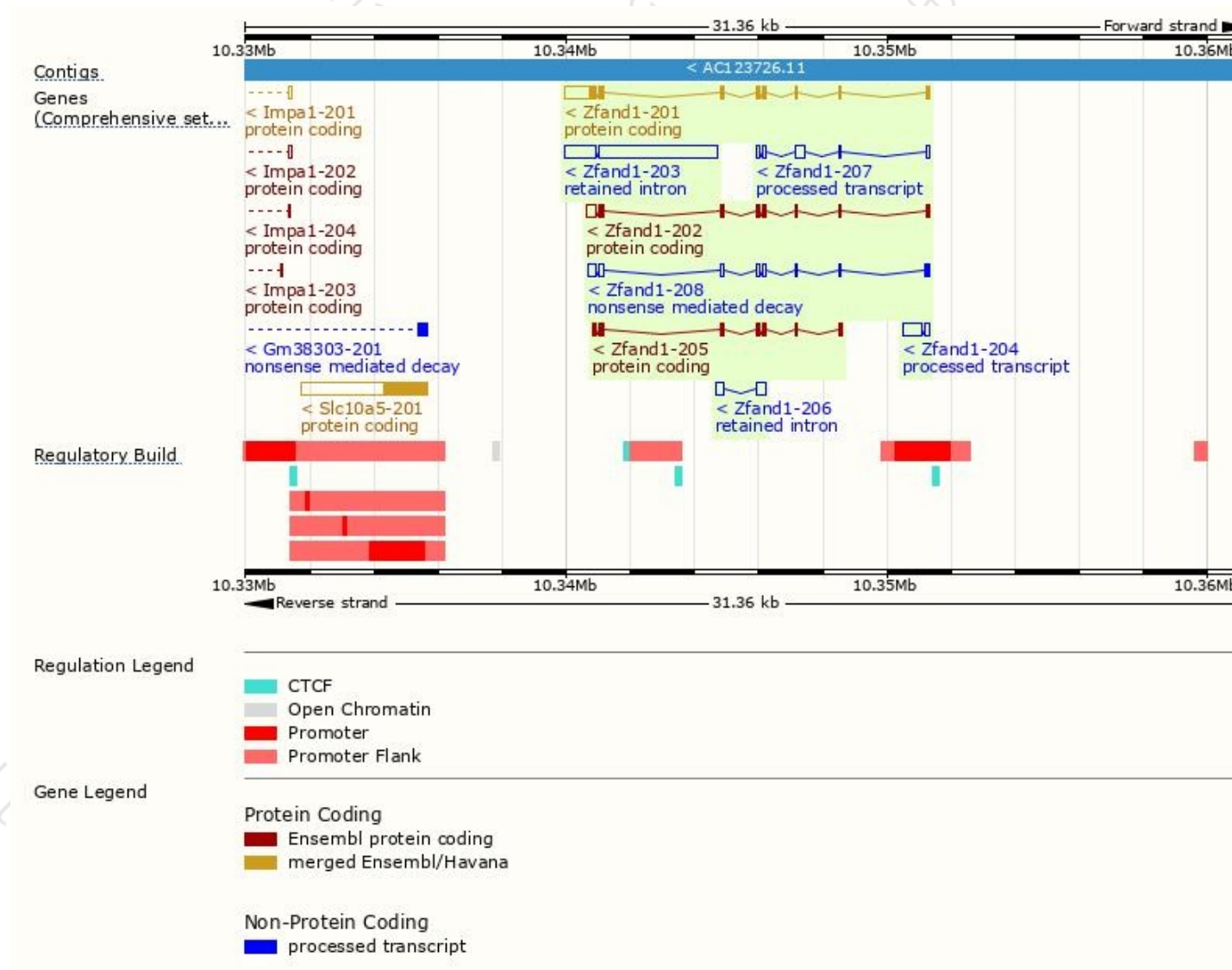
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfand1-201	ENSMUST00000037839.11	1610	268aa	Protein coding	CCDS17242	Q8BFR6	TSL:1 GENCODE basic APPRIS P1
Zfand1-202	ENSMUST00000108377.7	936	207aa	Protein coding	-	D3Z7G5	TSL:1 GENCODE basic
Zfand1-205	ENSMUST00000140634.1	743	247aa	Protein coding	-	F7CFT1	CDS 5' and 3' incomplete TSL:5
Zfand1-208	ENSMUST00000184644.7	954	49aa	Nonsense mediated decay	-	V9GXT9	TSL:3
Zfand1-204	ENSMUST00000127313.1	715	No protein	Processed transcript	-	-	TSL:3
Zfand1-207	ENSMUST00000183798.1	586	No protein	Processed transcript	-	-	TSL:5
Zfand1-203	ENSMUST00000125734.1	4685	No protein	Retained intron	-	-	TSL:2
Zfand1-206	ENSMUST00000156414.1	542	No protein	Retained intron	-	-	TSL:2

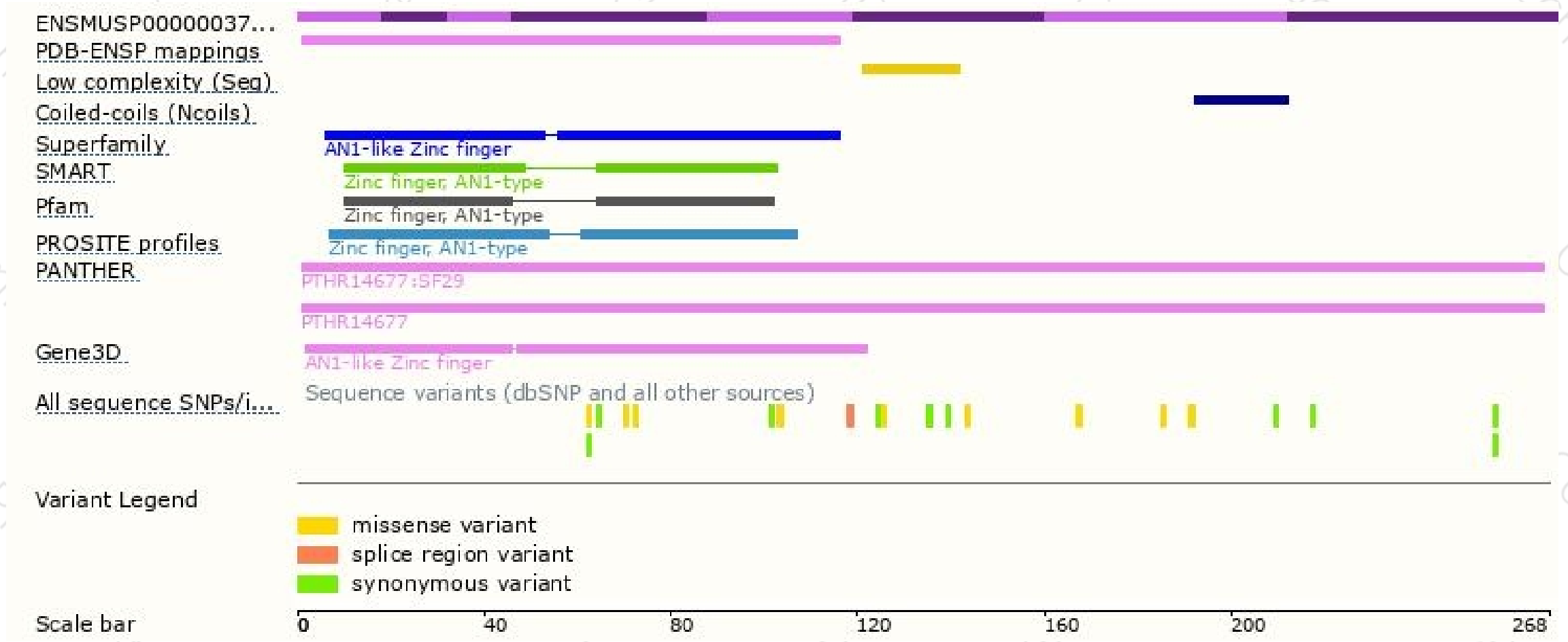
The strategy is based on the design of *Zfand1-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

