

Zfp787 Cas9-CKO Strategy

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Project Overview

Project Name

Zfp787

Project type

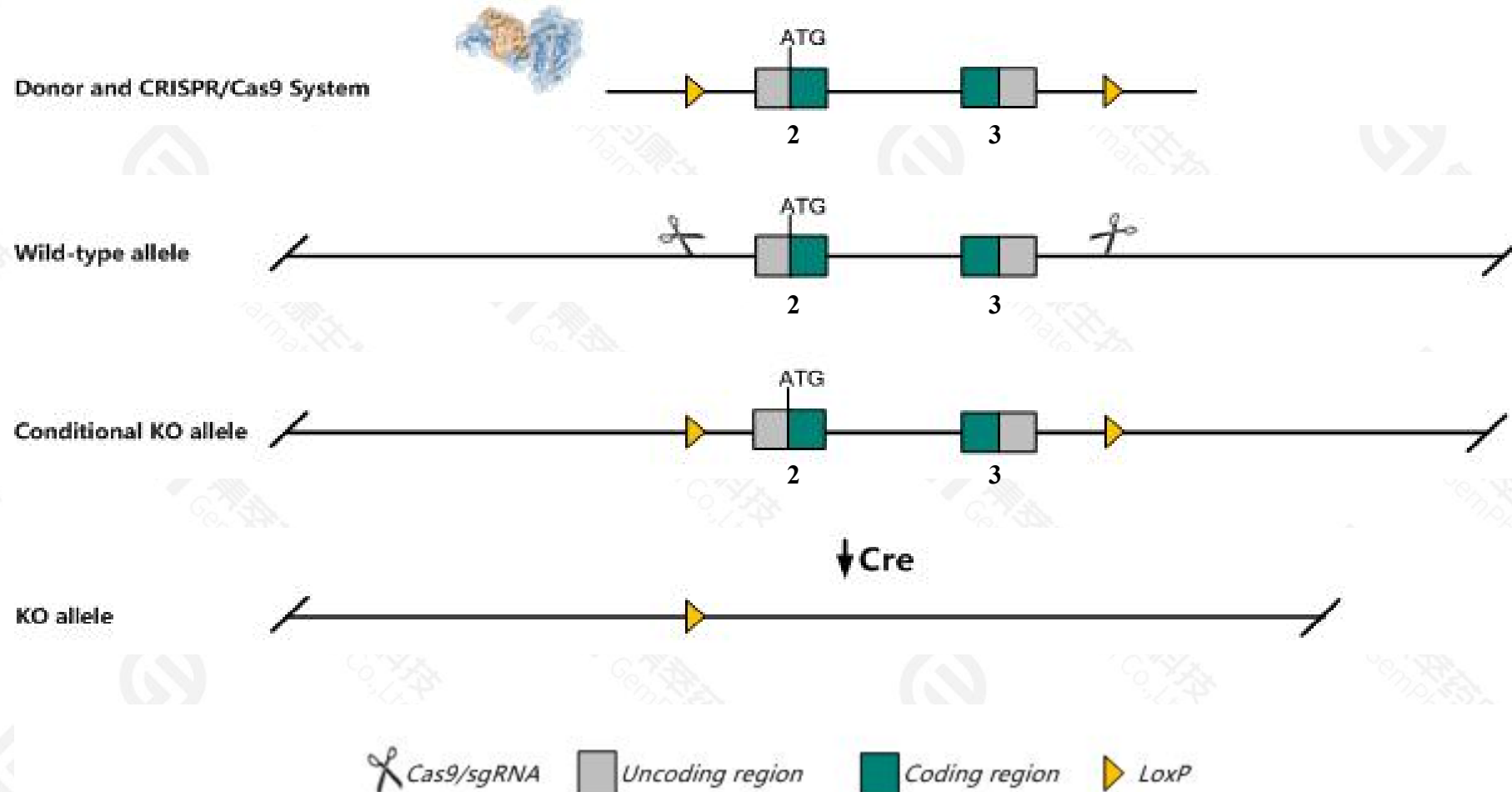
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp787* gene. The schematic diagram is as follows:



- The *Zfp787* gene has 7 transcripts. According to the structure of *Zfp787* gene, exon2-exon3 of *Zfp787-201*(ENSMUST00000094870.3) transcript is recommended as the knockout region. The region contains all 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 *Zfp787* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor 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 *Zfp787* 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)

Zfp787 zinc finger protein 787 [Mus musculus (house mouse)]

Gene ID: 67109, updated on 17-Feb-2021

Summary



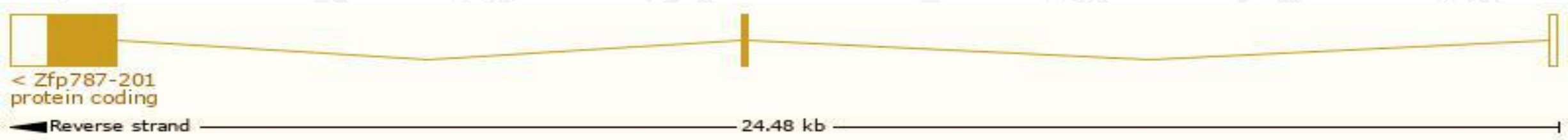
Official Symbol	Zfp787 provided by MGI
Official Full Name	zinc finger protein 787 provided by MGI
Primary source	MGI:MGI:1914359
See related	Ensembl:ENSMUSG00000046792
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2210018M03Rik, Znf787
Expression	Ubiquitous expression in ovary adult (RPKM 27.5), adrenal adult (RPKM 22.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

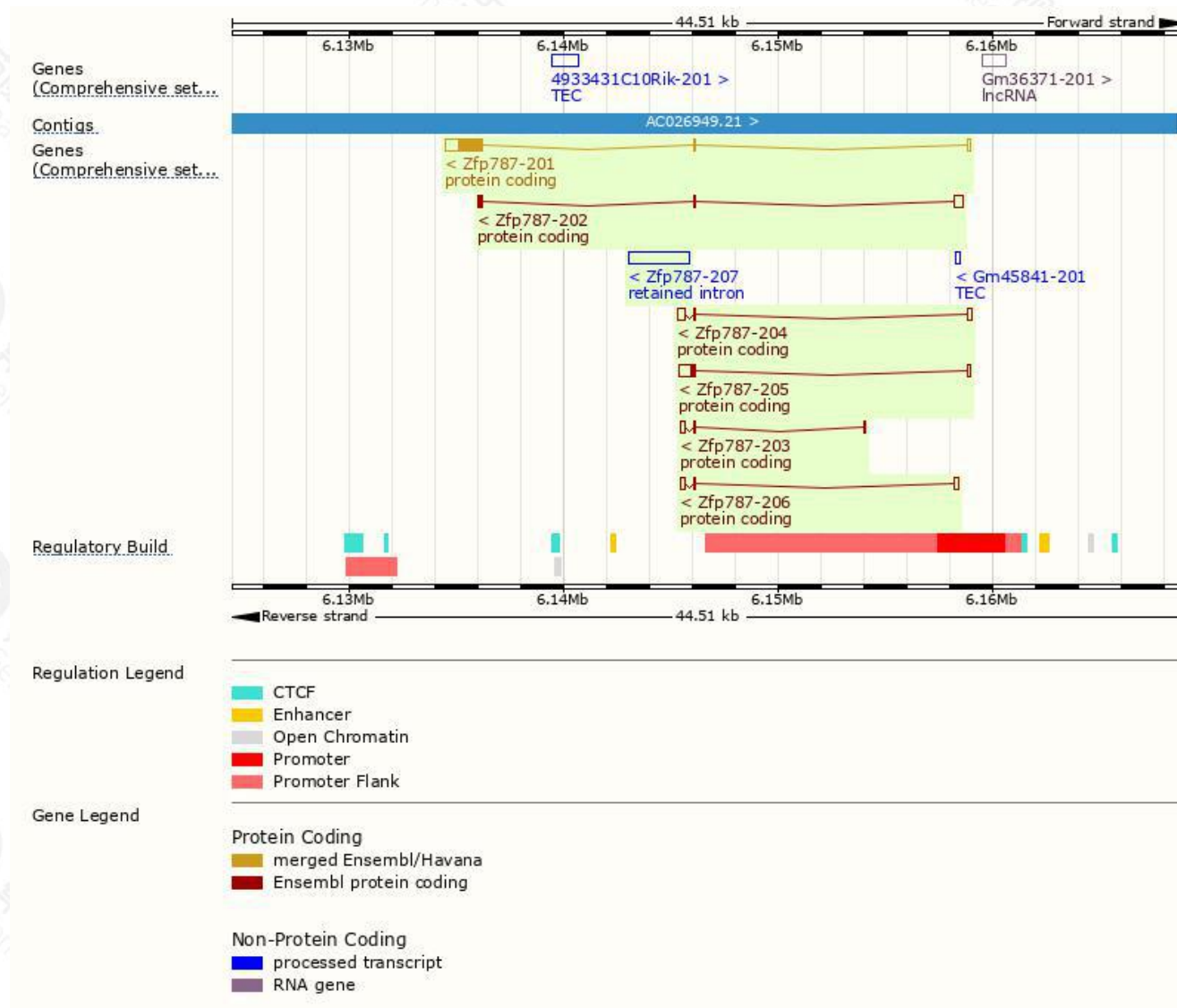
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp787-201	ENSMUST00000094870.3	1897	381aa	Protein coding	CCDS20769		TSL:1 , GENCODE basic , APPRIS P1 ,
Zfp787-205	ENSMUST00000207957.2	880	69aa	Protein coding	-		TSL:5 , GENCODE basic ,
Zfp787-202	ENSMUST00000207315.2	696	98aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Zfp787-204	ENSMUST00000207628.2	576	30aa	Protein coding	-		TSL:1 , GENCODE basic ,
Zfp787-206	ENSMUST00000208746.2	535	30aa	Protein coding	-		TSL:2 , GENCODE basic ,
Zfp787-203	ENSMUST00000207331.2	376	30aa	Protein coding	-		TSL:1 , GENCODE basic ,
Zfp787-207	ENSMUST00000208894.2	2845	No protein	Retained intron	-		TSL:NA ,

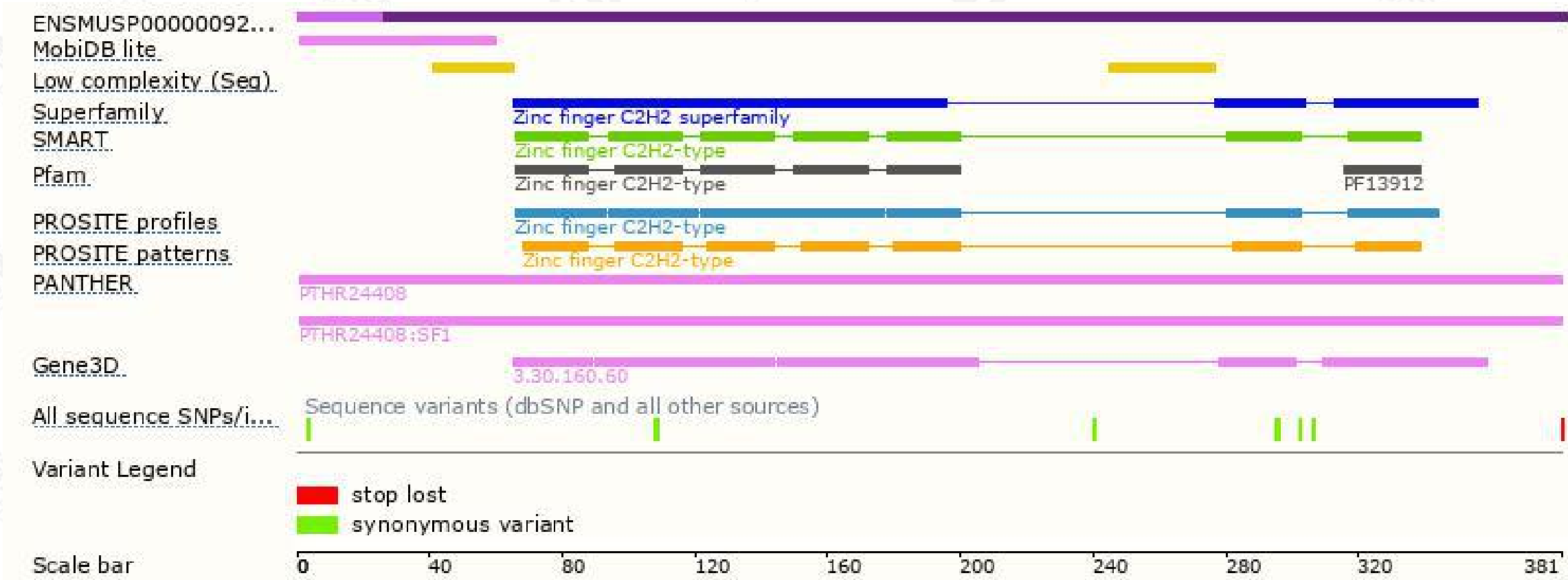
The strategy is based on the design of *Zfp787-201* transcript,the transcription is shown below:



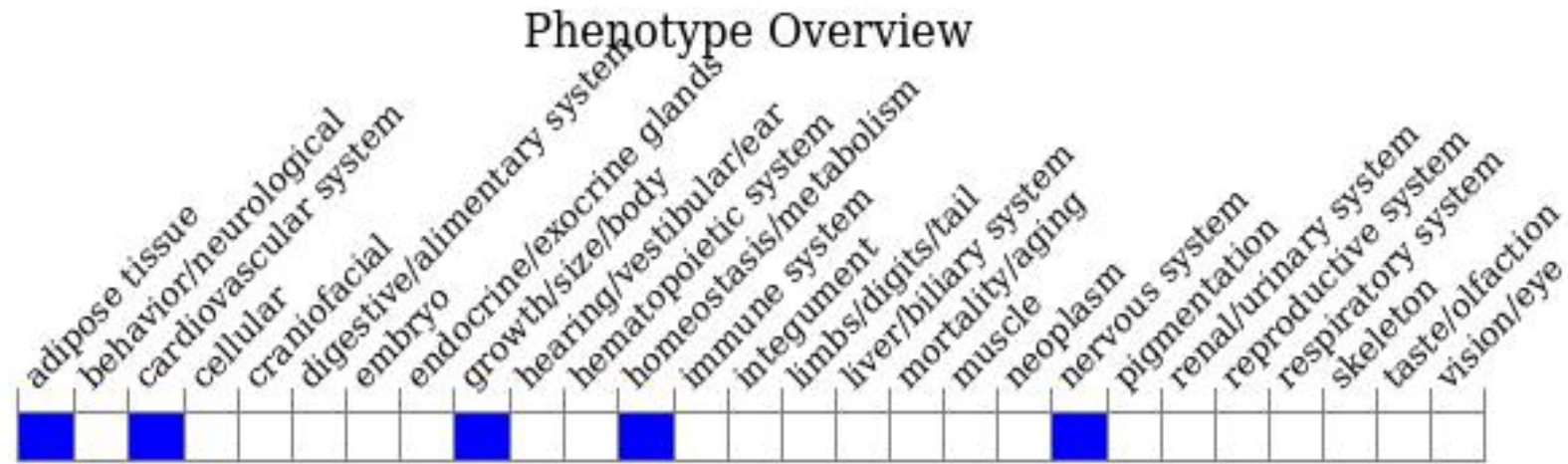
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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