

Zfp827 Cas9-CKO Strategy

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Project Overview

Project Name

Zfp827

Project type

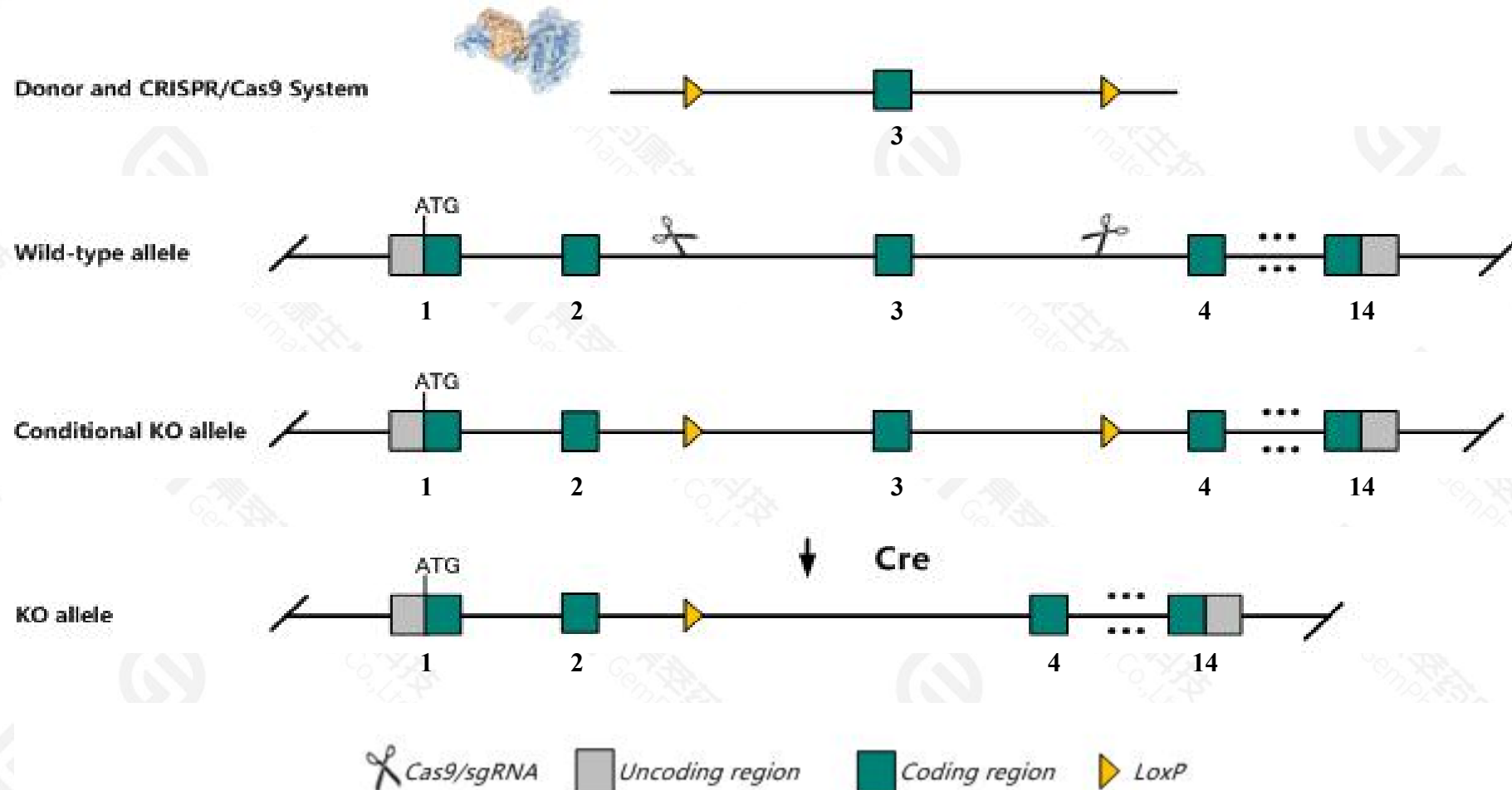
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp827* gene. The schematic diagram is as follows:



Technical routes

- The *Zfp827* gene has 9 transcripts. According to the structure of *Zfp827* gene, exon3 of *Zfp827-202*(ENSMUST00000098614.9) transcript is recommended as the knockout region. The region contains 173bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp827* 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 *Zfp827* 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)

Zfp827 zinc finger protein 827 [Mus musculus (house mouse)]

Gene ID: 622675, updated on 17-Dec-2020

Summary



Official Symbol	Zfp827 provided by MGI
Official Full Name	zinc finger protein 827 provided by MGI
Primary source	MGI:MGI:2444807
See related	Ensembl:ENSMUSG00000071064
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	2810449M09Rik, D630040G17Rik, Znf827
Expression	Ubiquitous expression in limb E14.5 (RPKM 3.9), whole brain E14.5 (RPKM 3.4) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

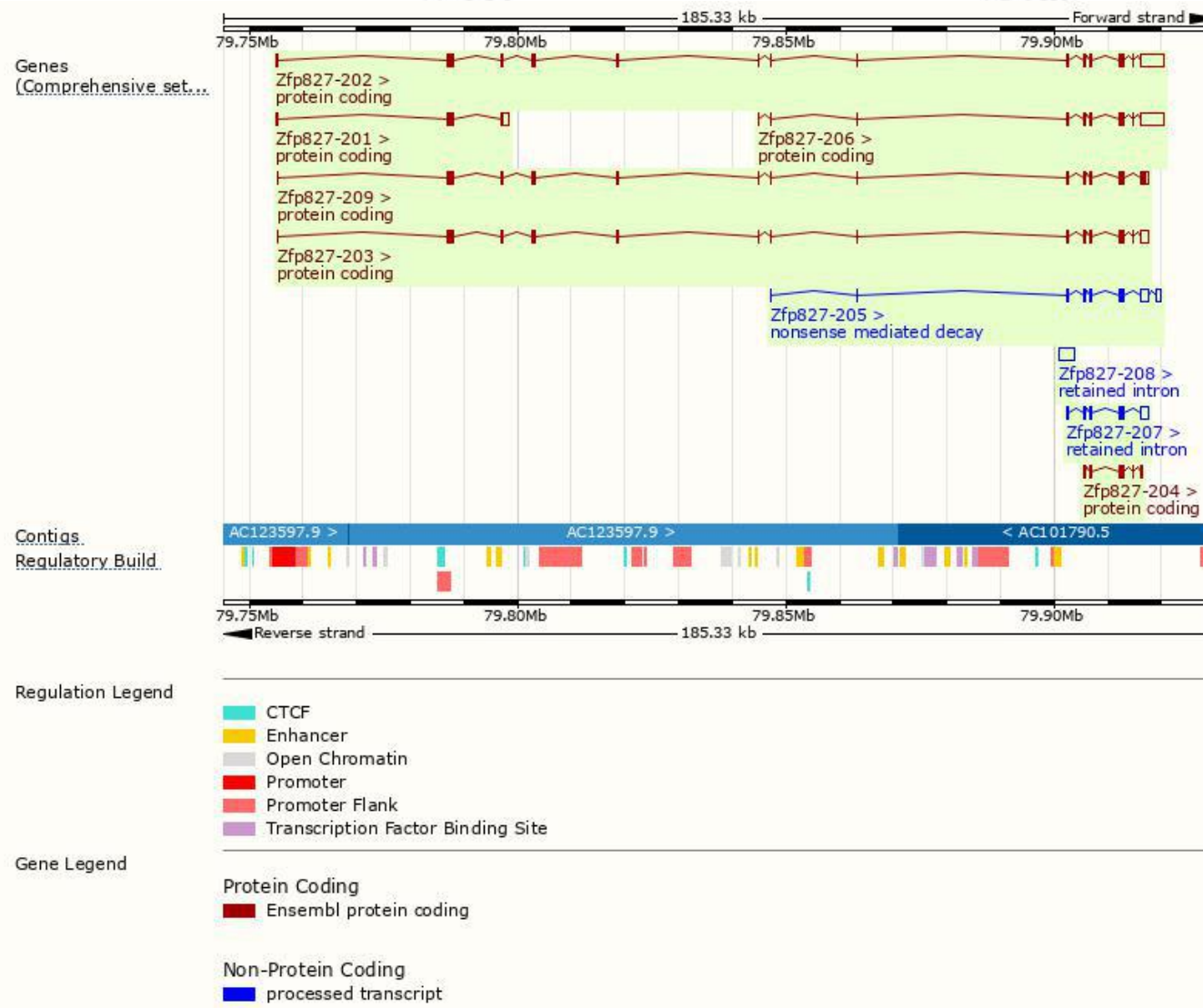
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp827-202	ENSMUST00000098614.9	7581	1078aa	Protein coding	CCDS52604		TSL:1 , GENCODE basic ,
Zfp827-203	ENSMUST00000119254.8	4549	1074aa	Protein coding	CCDS80900		TSL:1 , GENCODE basic ,
Zfp827-206	ENSMUST00000148713.8	5230	370aa	Protein coding	-		CDS 5' incomplete , TSL:1 ,
Zfp827-209	ENSMUST00000238669.2	4511	1346aa	Protein coding	-		GENCODE basic , APPRIS P1 ,
Zfp827-201	ENSMUST00000087927.11	2801	459aa	Protein coding	-		TSL:1 , GENCODE basic ,
Zfp827-204	ENSMUST00000129613.2	765	223aa	Protein coding	-		CDS 5' incomplete , TSL:3 ,
Zfp827-205	ENSMUST00000145827.8	3115	343aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:5 ,
Zfp827-208	ENSMUST00000211475.2	2979	No protein	Retained intron	-		TSL:NA ,
Zfp827-207	ENSMUST00000155960.8	2058	No protein	Retained intron	-		TSL:1 ,

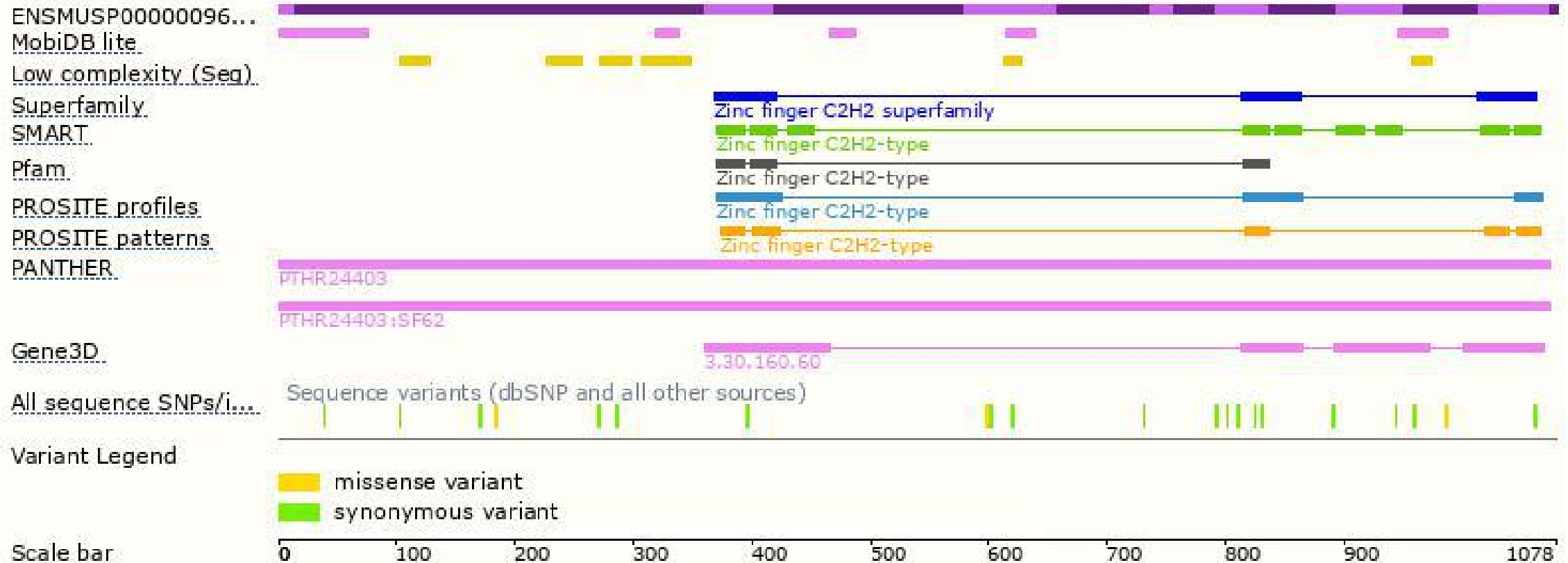
The strategy is based on the design of *Zfp827-202* transcript,the transcription is shown below:



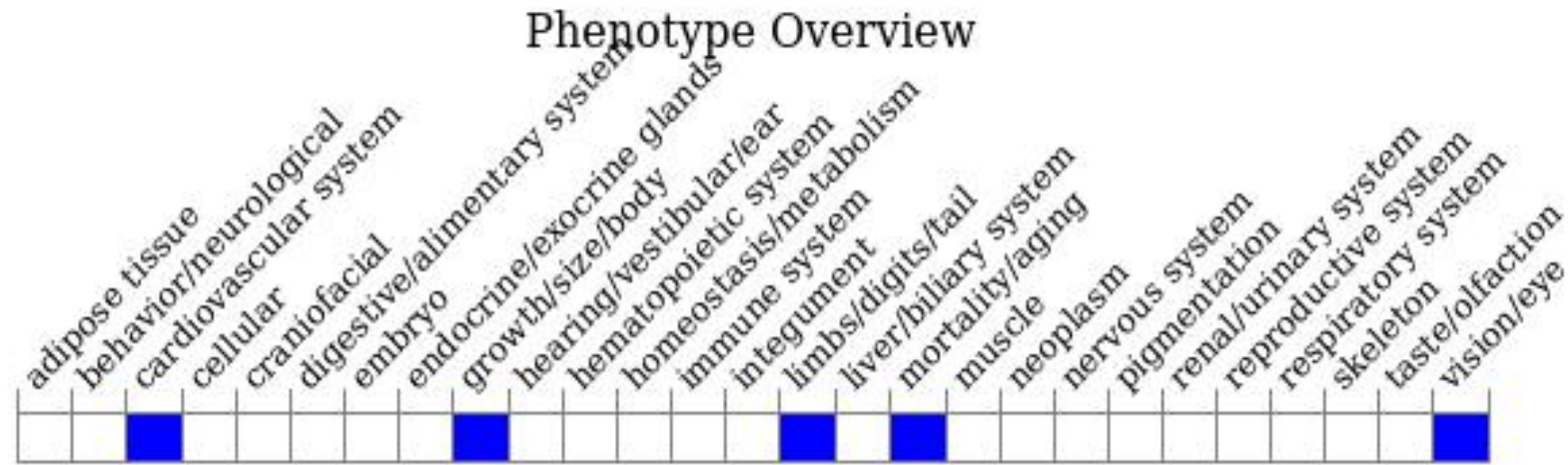
Genomic location distribution



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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