

***Zfp287* Cas9-CKO Strategy**

Designer:Fengjuan Wang

Reviewer:Shilei Zhu

Design Date:

Project Overview

Project Name

Zfp287

Project type

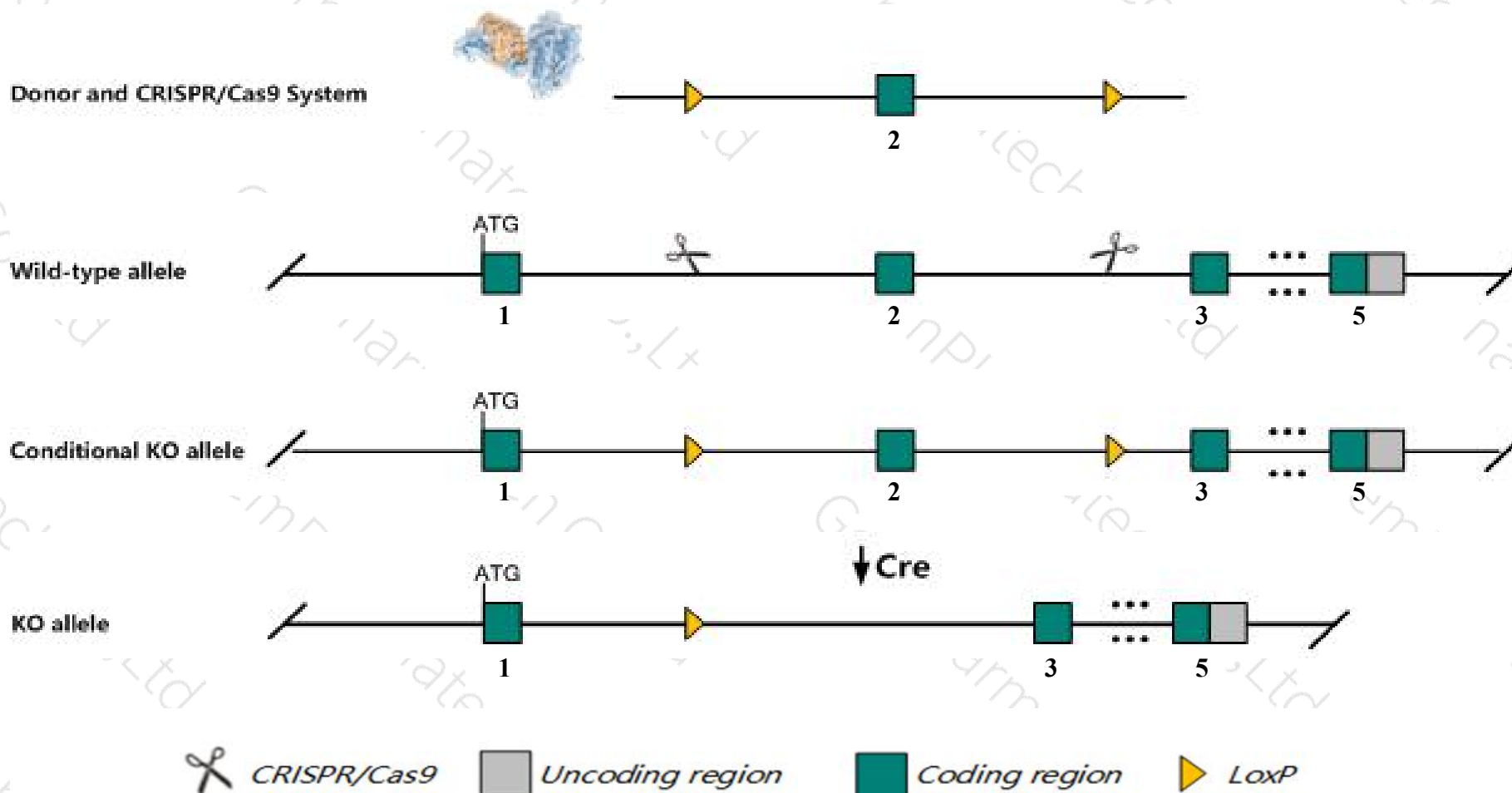
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp287* gene. The schematic diagram is as follows:



- The *Zfp287* gene has 6 transcripts. According to the structure of *Zfp287* gene, exon2 of *Zfp287-206* (ENSMUST00000185656.6) transcript is recommended as the knockout region. The region contains 104bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp287* 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 *Zfp287* gene is located on the Chr11. 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)

Zfp287 zinc finger protein 287 [Mus musculus (house mouse)]

Gene ID: 170740, updated on 31-Jan-2019

Summary



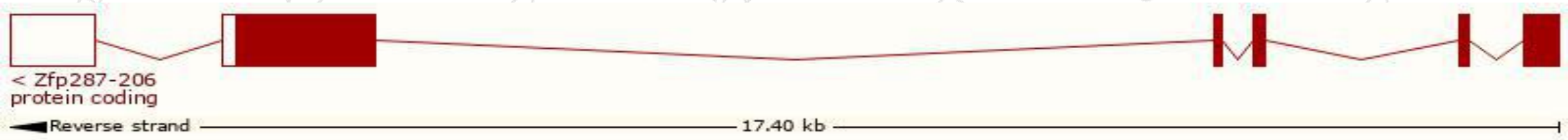
Official Symbol	Zfp287 provided by MGI
Official Full Name	zinc finger protein 287 provided by MGI
Primary source	MGI:MGI:2176561
See related	Ensembl:ENSMUSG00000005267
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	B230333C16Rik, SKAT-2, Skat2, Znf287, mszf16, mszf74, zfp-287
Expression	Broad expression in CNS E18 (RPKM 1.9), CNS E14 (RPKM 1.8) and 21 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

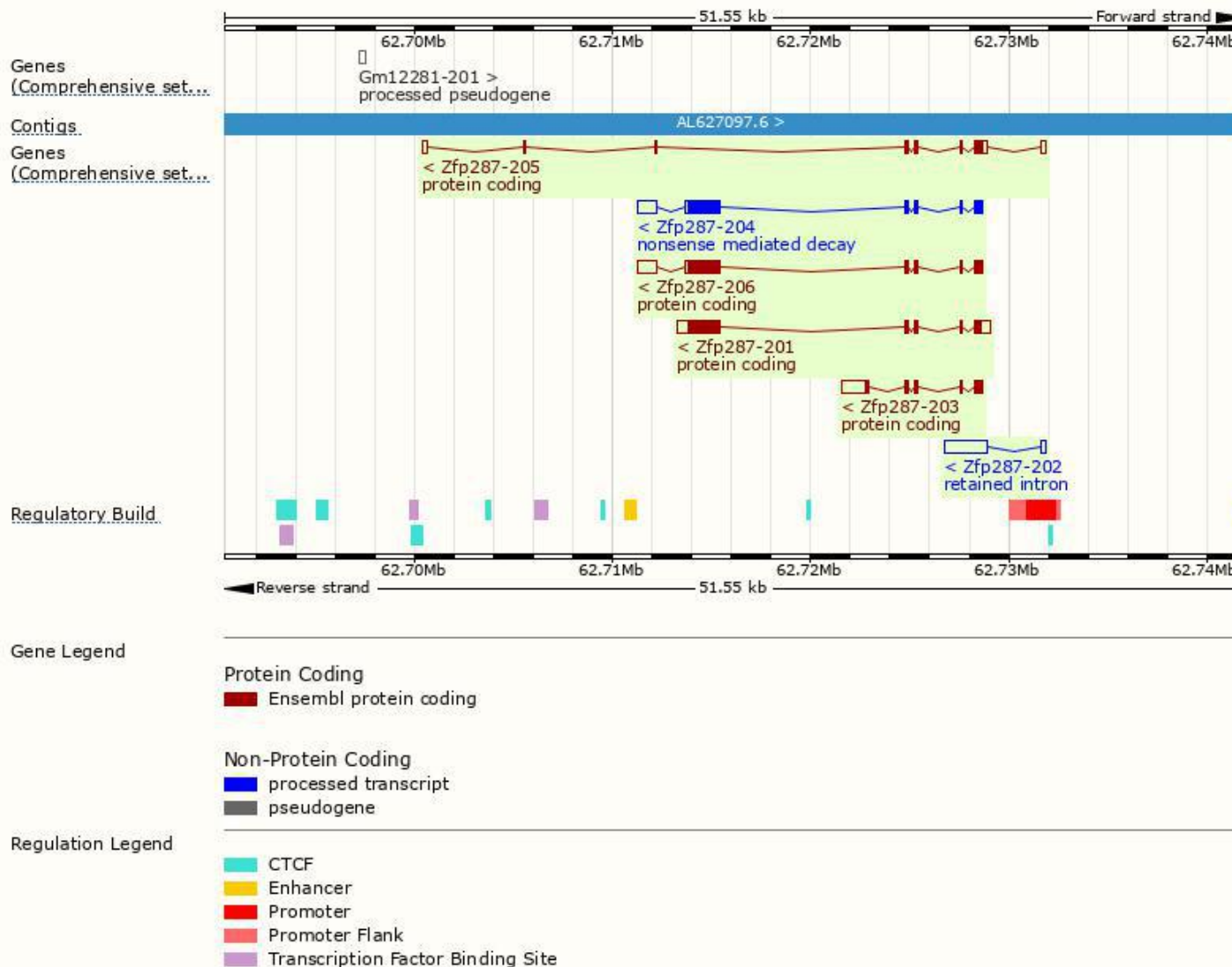
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp287-206	ENSMUST00000185656.6	3370	759aa	Protein coding	CCDS24830	Q9EQB9	TSL:1 GENCODE basic APPRIS P2
Zfp287-201	ENSMUST00000005399.9	3220	748aa	Protein coding	-	Q5SVS9	TSL:1 GENCODE basic APPRIS ALT2
Zfp287-203	ENSMUST00000128370.1	2062	274aa	Protein coding	-	B7ZC81	TSL:1 GENCODE basic
Zfp287-205	ENSMUST00000150336.7	1605	297aa	Protein coding	-	Q3UZW0	TSL:1 GENCODE basic
Zfp287-204	ENSMUST00000149228.7	3391	759aa	Nonsense mediated decay	CCDS24830	Q9EQB9	TSL:1
Zfp287-202	ENSMUST00000127732.1	2403	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Zfp287-206* transcript,The transcription is shown below



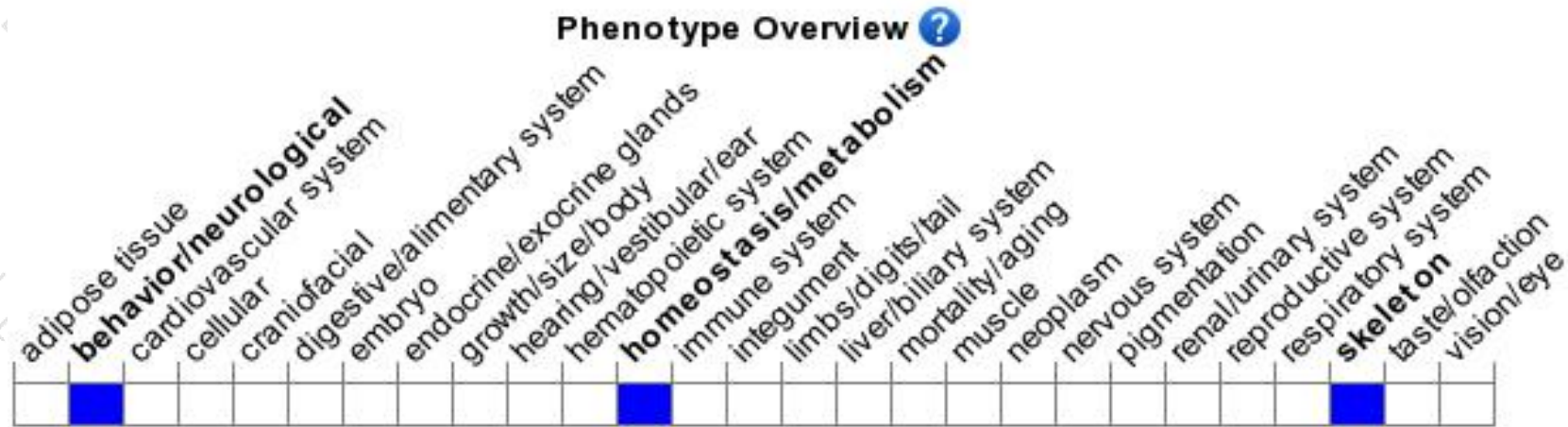
Genomic location distribution



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.

Tel: 400-9660890

