

Zfp184 Cas9-CKO Strategy

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Reviewer:

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Design Date:

2019-11-05

Project Overview

Project Name

Zfp184

Project type

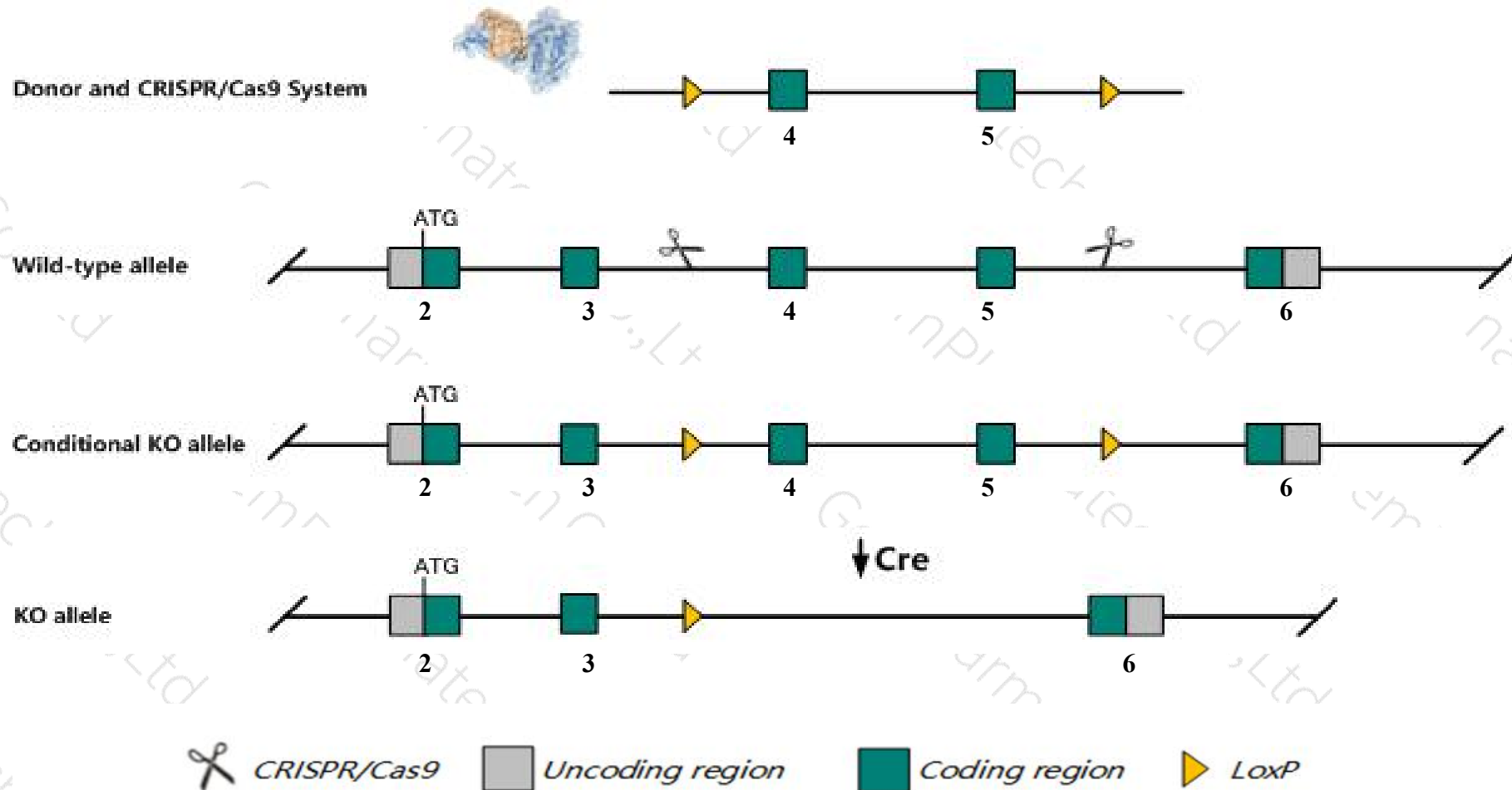
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp184* gene. The schematic diagram is as follows:



- The *Zfp184* gene has 6 transcripts. According to the structure of *Zfp184* gene, exon4-exon5 of *Zfp184-202* (ENSMUST00000102978.7) transcript is recommended as the knockout region. The region contains 223bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp184* 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.

- Transcript 203 is incomplete and effect is unknown.
- The *Zfp184* gene is located on the Chr13. 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)

Zfp184 zinc finger protein 184 (Kruppel-like) [*Mus musculus* (house mouse)]

Gene ID: 193452, updated on 12-Aug-2019

Summary

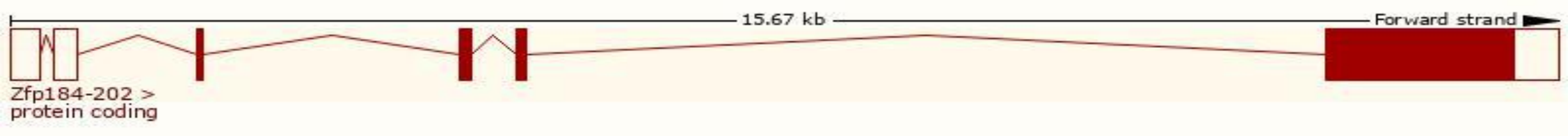
Official Symbol	Zfp184 provided by MGI
Official Full Name	zinc finger protein 184 (Kruppel-like) provided by MGI
Primary source	MGI:MGI:1922244
See related	Ensembl:ENSMUSG00000006720
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4930500C15Rik
Expression	Biased expression in CNS E11.5 (RPKM 4.6), CNS E14 (RPKM 3.7) and 12 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

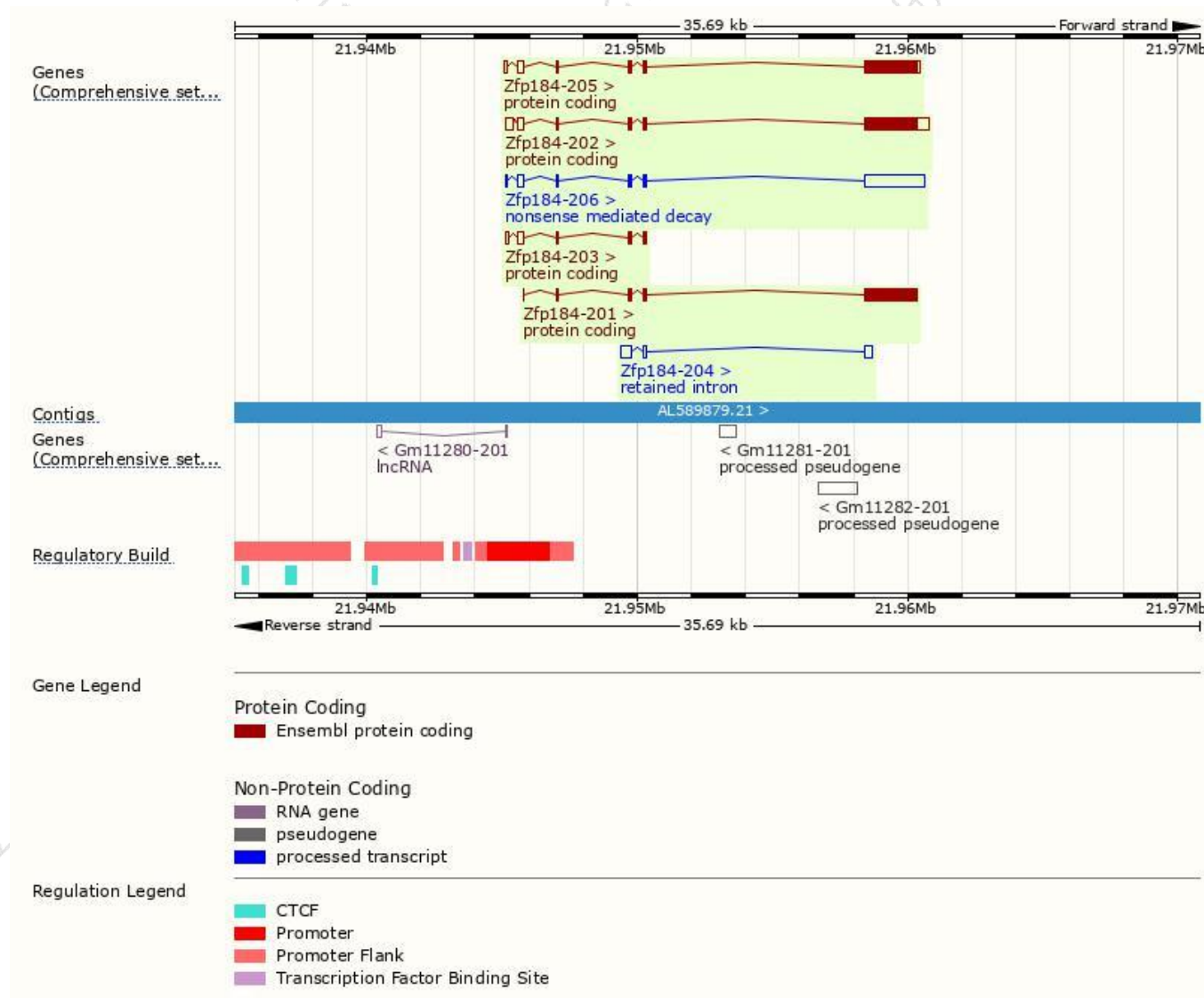
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp184-202	ENSMUST00000102978.7	3198	737aa	Protein coding	CCDS26302	Q5SZM8 Q7TSH9	TSL:5 GENCODE basic APPRIS P1
Zfp184-205	ENSMUST00000176511.7	2703	737aa	Protein coding	CCDS26302	Q5SZM8 Q7TSH9	TSL:1 GENCODE basic APPRIS P1
Zfp184-201	ENSMUST00000006903.7	2214	737aa	Protein coding	CCDS26302	Q5SZM8 Q7TSH9	TSL:5 GENCODE basic APPRIS P1
Zfp184-203	ENSMUST00000152258.8	628	99aa	Protein coding	-	H3BJS2	CDS 3' incomplete TSL:5
Zfp184-206	ENSMUST00000176580.7	2834	84aa	Nonsense mediated decay	-	H3BK15	TSL:1
Zfp184-204	ENSMUST00000176003.1	777	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Zfp184-202* transcript,The transcription is shown below

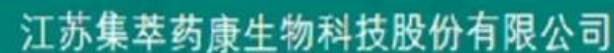


Genomic location distribution

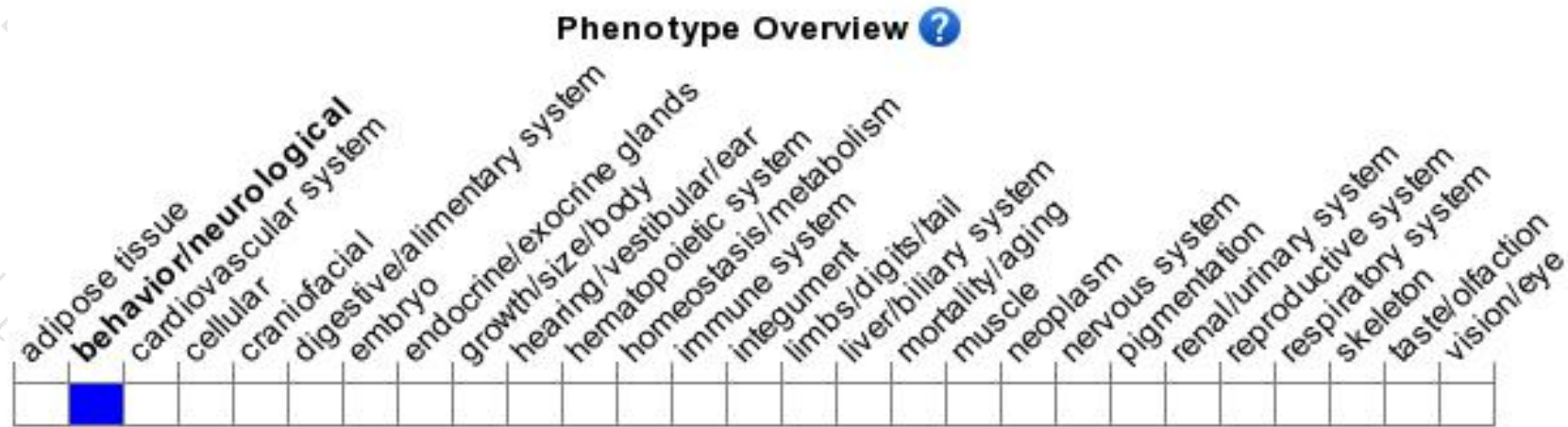




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Mouse phenotype description(MGI)



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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