

Phf8 Cas9-CKO Strategy

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Project Overview

Project Name

Phf8

Project type

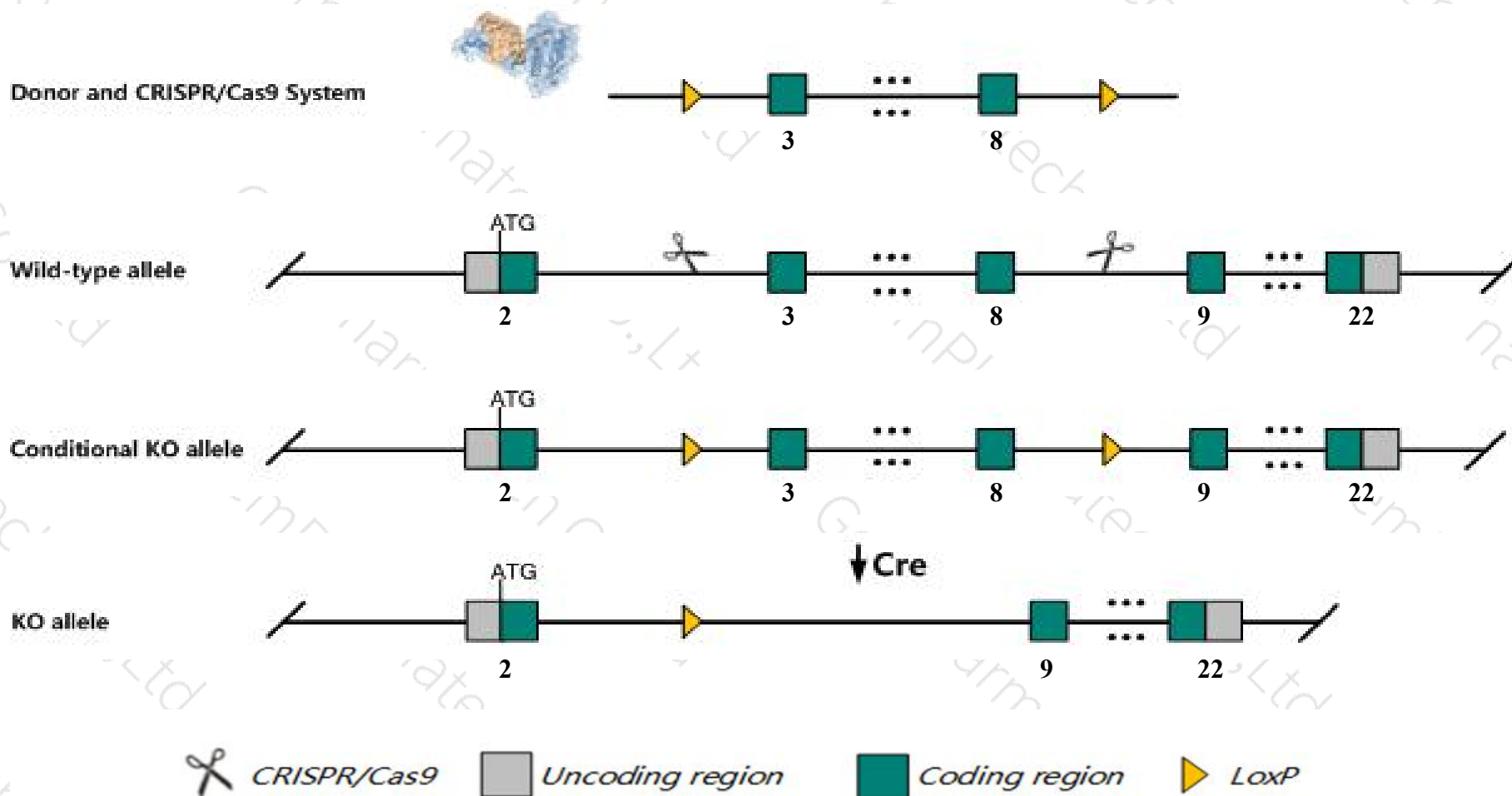
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Phf8* gene. The schematic diagram is as follows:



Technical routes

- The *Phf8* gene has 11 transcripts. According to the structure of *Phf8* gene, exon3-exon8 of *Phf8-211* (ENSMUST00000168501.7) transcript is recommended as the knockout region. The region contains 848bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Phf8* 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 *Phf8* gene is located on the ChrX. 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)

Phf8 PHD finger protein 8 [Mus musculus (house mouse)]

Gene ID: 320595, updated on 17-Mar-2019

Summary



Official Symbol	Phf8 provided by MGI
Official Full Name	PHD finger protein 8 provided by MGI
Primary source	MGI:MGI:2444341
See related	Ensembl:ENSMUSG00000041229
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	9830141C09Rik, mKIAA1111
Expression	Ubiquitous expression in genital fat pad adult (RPKM 7.8), thymus adult (RPKM 4.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

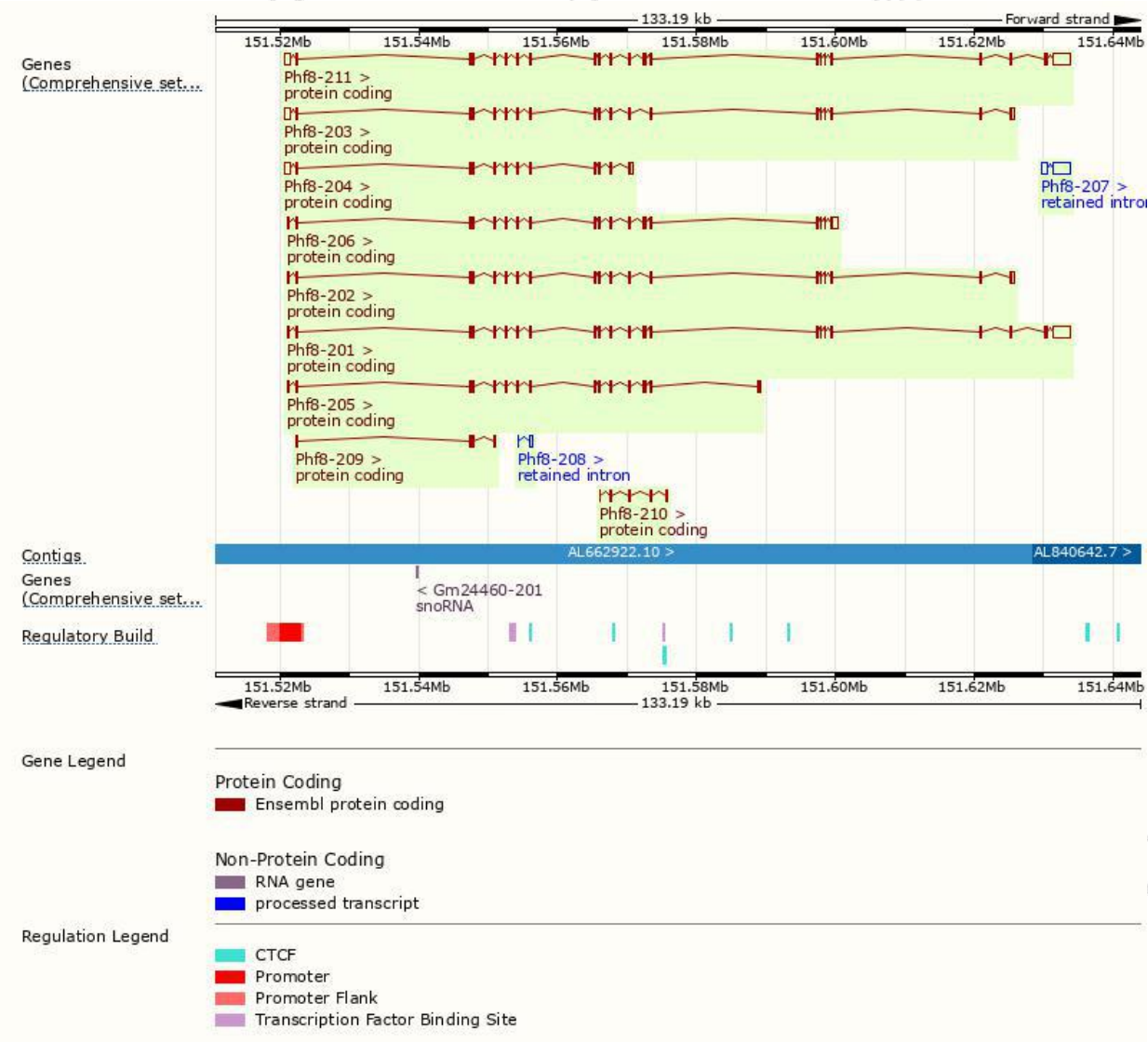
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Phf8-211	ENSMUST00000168501.7	6359	1023aa	Protein coding	CCDS53223	Q80TJ7	TSL:5 GENCODE basic APPRIS ALT 2
Phf8-201	ENSMUST00000046950.12	5728	1023aa	Protein coding	CCDS53223	Q80TJ7	TSL:5 GENCODE basic APPRIS ALT 2
Phf8-203	ENSMUST00000112662.8	3732	795aa	Protein coding	CCDS30470	A2ABV3 Q80TJ7	TSL:5 GENCODE basic APPRIS P3
Phf8-202	ENSMUST00000046962.10	3105	795aa	Protein coding	CCDS30470	A2ABV3 Q80TJ7	TSL:1 GENCODE basic APPRIS P3
Phf8-206	ENSMUST00000112670.7	3484	820aa	Protein coding	-	Z4YL84	TSL:1 GENCODE basic APPRIS ALT 2
Phf8-204	ENSMUST00000112666.7	2556	464aa	Protein coding	-	Q80TJ7	TSL:1 GENCODE basic APPRIS ALT 2
Phf8-205	ENSMUST00000112668.8	2291	602aa	Protein coding	-	A2ABV1	TSL:1 GENCODE basic APPRIS ALT 2
Phf8-209	ENSMUST00000148622.2	573	151aa	Protein coding	-	A2ABU9	CDS 3' incomplete TSL:3
Phf8-210	ENSMUST00000151941.1	516	124aa	Protein coding	-	F7BTQ5	CDS 5' incomplete TSL:3
Phf8-207	ENSMUST00000138318.1	3191	No protein	Retained intron	-	-	TSL:1
Phf8-208	ENSMUST00000141715.1	572	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Phf8-211* transcript,The transcription is shown below



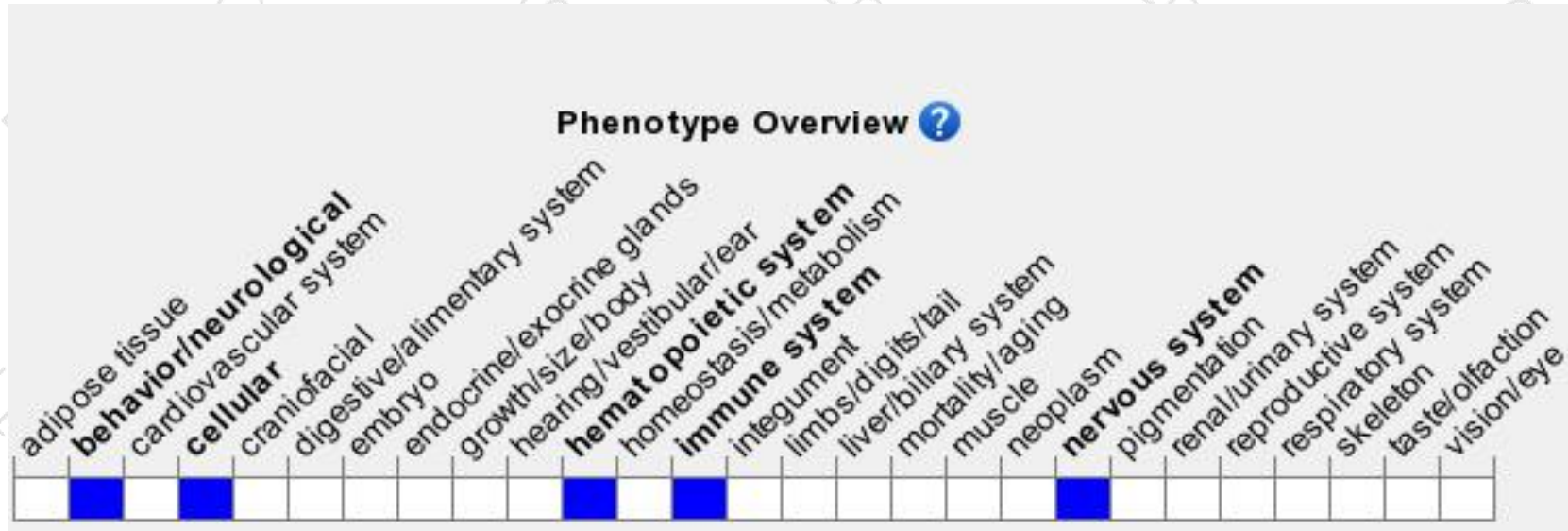
Genomic location distribution



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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