

Phf10 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Phf10

Project type

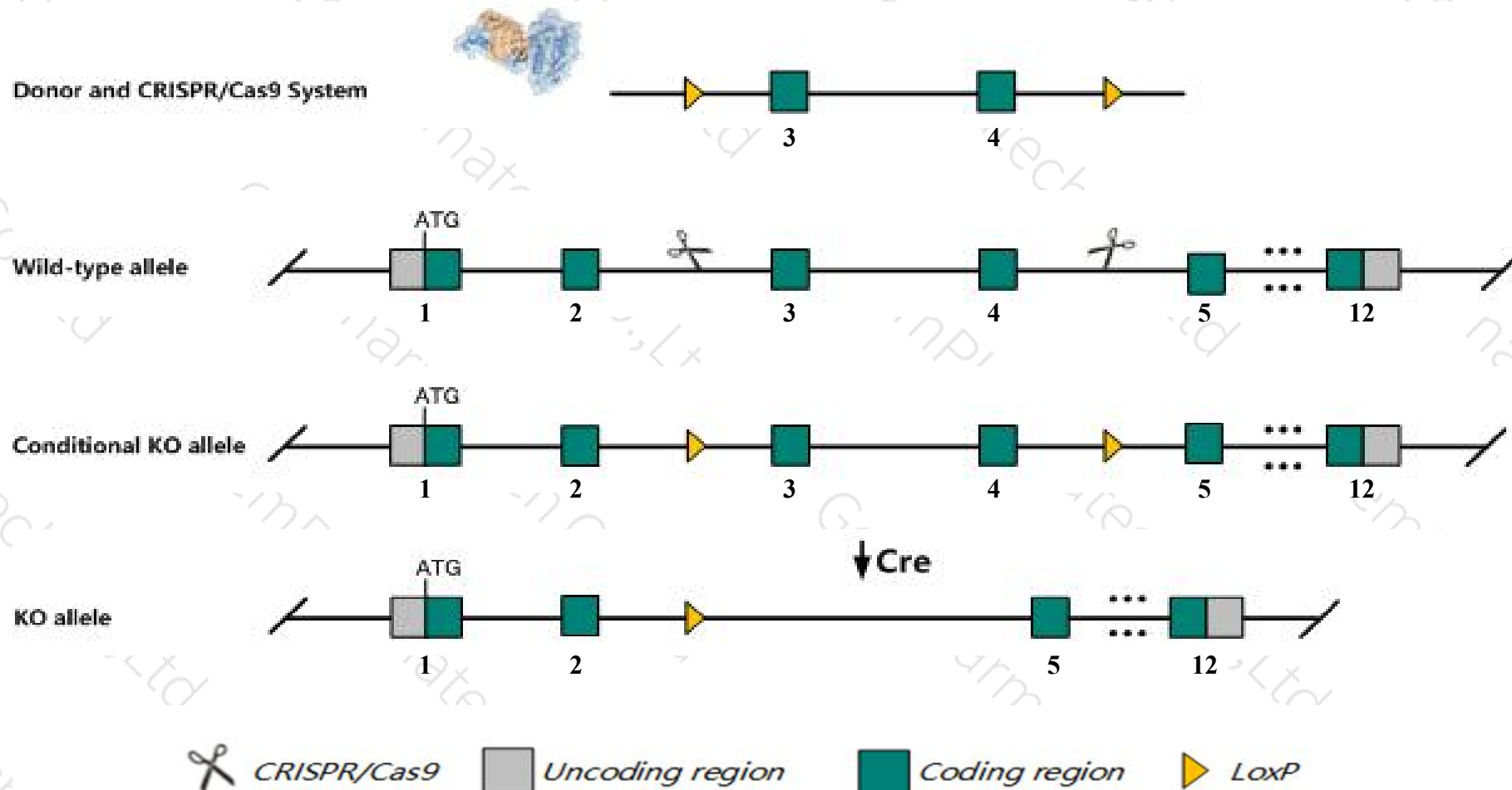
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Phf10* gene. The schematic diagram is as follows:



- The *Phf10* gene has 5 transcripts. According to the structure of *Phf10* gene, exon3-exon4 of *Phf10-201* (ENSMUST00000024657.11) transcript is recommended as the knockout region. The region contains 215bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Phf10* 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.

- According to the existing MGI data, Mice homozygous for a floxed allele are viable and fertile.
- The KO region contains functional region of the *1600012H06Rik* gene. Knockout the region may affect the function of *1600012H06Rik* gene.
- The *Phf10* gene is located on the Chr17. 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)

Phf10 PHD finger protein 10 [Mus musculus (house mouse)]

Gene ID: 72057, updated on 19-Feb-2019

Summary



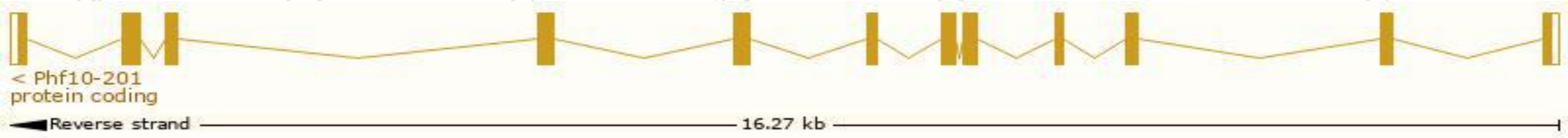
Official Symbol	Phf10 provided by MGI
Official Full Name	PHD finger protein 10 provided by MGI
Primary source	MGI:MGI:1919307
See related	Ensembl:ENSMUSG00000023883
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810055P05Rik, AV024533
Expression	Ubiquitous expression in liver E14 (RPKM 29.8), liver E14.5 (RPKM 23.5) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

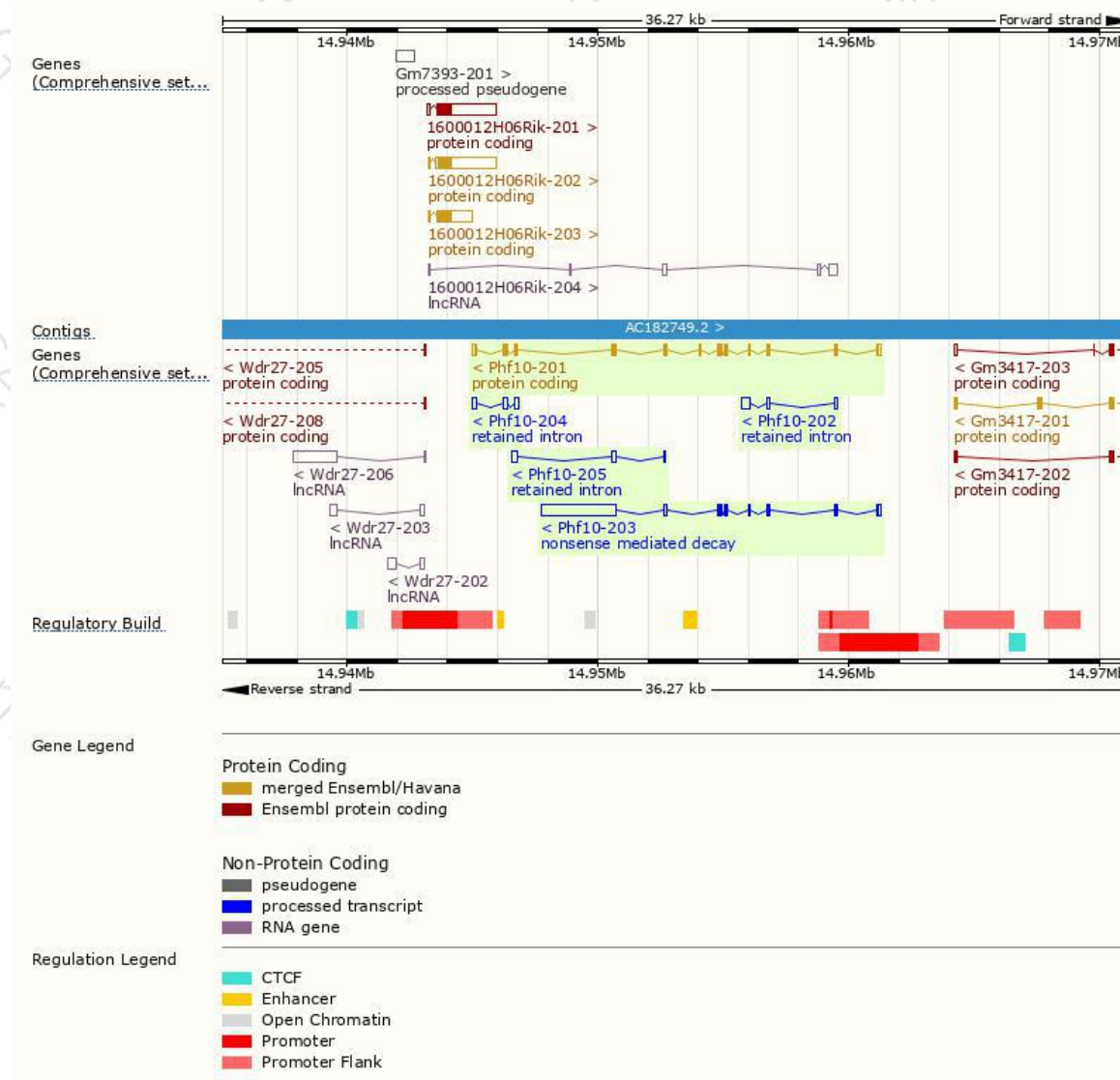
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Phf10-201	ENSMUST00000024657.11	1663	497aa	Protein coding	CCDS28407	K4DI61	TSL:1 GENCODE basic APPRIS P1
Phf10-203	ENSMUST00000168938.2	3901	234aa	Nonsense mediated decay	-	E9Q5L7	TSL:5
Phf10-202	ENSMUST00000167805.1	597	No protein	Retained intron	-	-	TSL:5
Phf10-204	ENSMUST00000171526.1	534	No protein	Retained intron	-	-	TSL:2
Phf10-205	ENSMUST00000172054.1	441	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Phf10-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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