

Phf19 Cas9-CKO Strategy

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Project Overview

Project Name

Phf19

Project type

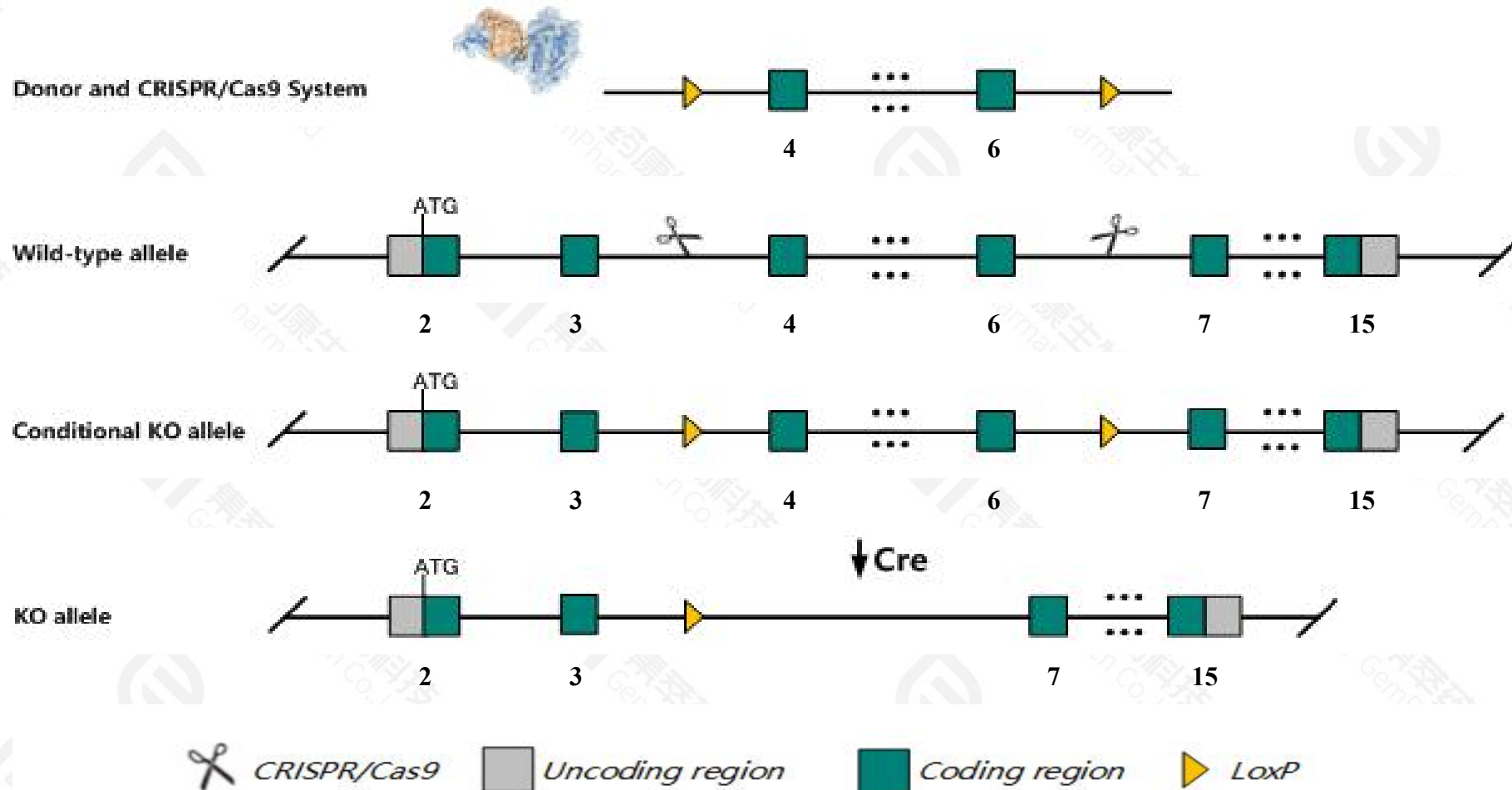
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Phf19* gene. The schematic diagram is as follows:



- The *Phf19* gene has 5 transcripts. According to the structure of *Phf19* gene, exon4-exon6 of *Phf19-201*(ENSMUST00000028232.7) transcript is recommended as the knockout region. The region contains 346bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Phf19* 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.

- The *Phf19* gene is located on the Chr2. 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)

Phf19 PHD finger protein 19 [Mus musculus (house mouse)]

Gene ID: 74016, updated on 17-Dec-2020

Summary



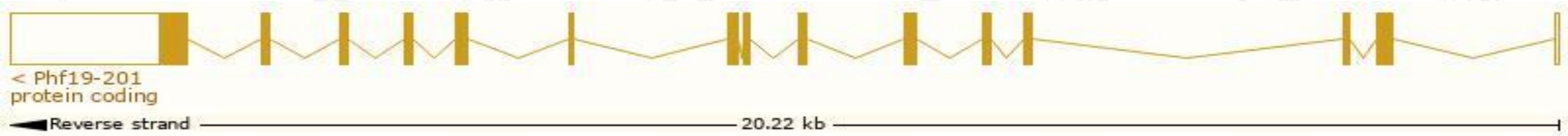
Official Symbol	Phf19 provided by MGI
Official Full Name	PHD finger protein 19 provided by MGI
Primary source	MGI:MGI:1921266
See related	Ensembl:ENSMUSG00000026873
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	3110009G19Rik, 3321402G02Rik
Expression	Broad expression in thymus adult (RPKM 5.0), genital fat pad adult (RPKM 4.1) and 25 other tissues See more
Orthologs	human all

Transcript information （Ensembl）

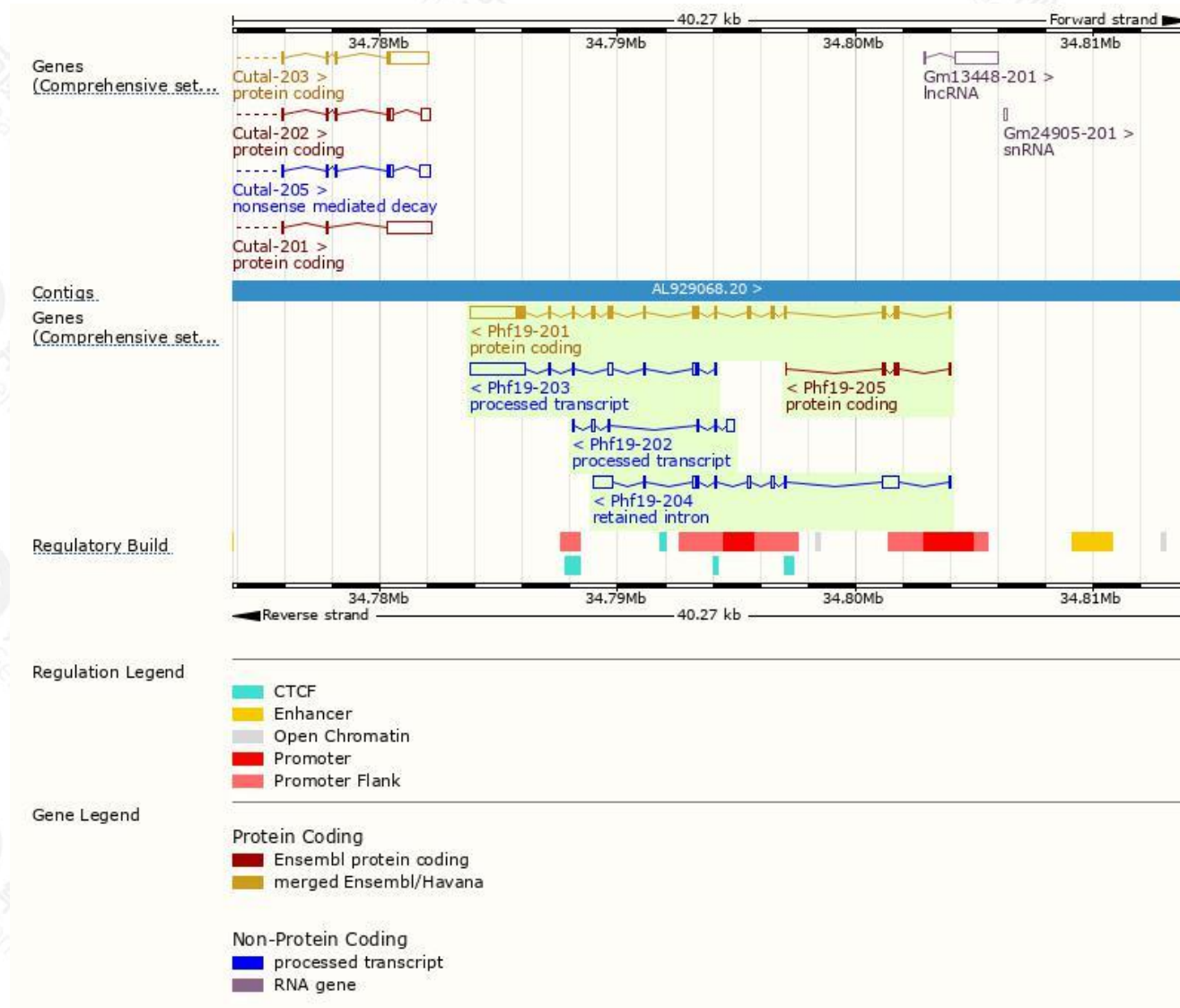
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Phf19-201	ENSMUST00000028232.7	3741	578aa	Protein coding	CCDS15955		TSL:1 , GENCODE basic , APPRIS P1 ,
Phf19-205	ENSMUST00000202907.2	351	88aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Phf19-203	ENSMUST00000128663.8	2978	No protein	Processed transcript	-		TSL:5 ,
Phf19-202	ENSMUST00000128394.8	698	No protein	Processed transcript	-		TSL:5 ,
Phf19-204	ENSMUST00000129911.2	2201	No protein	Retained intron	-		TSL:1 ,

The strategy is based on the design of *Phf19-201* transcript,the transcription is shown below:



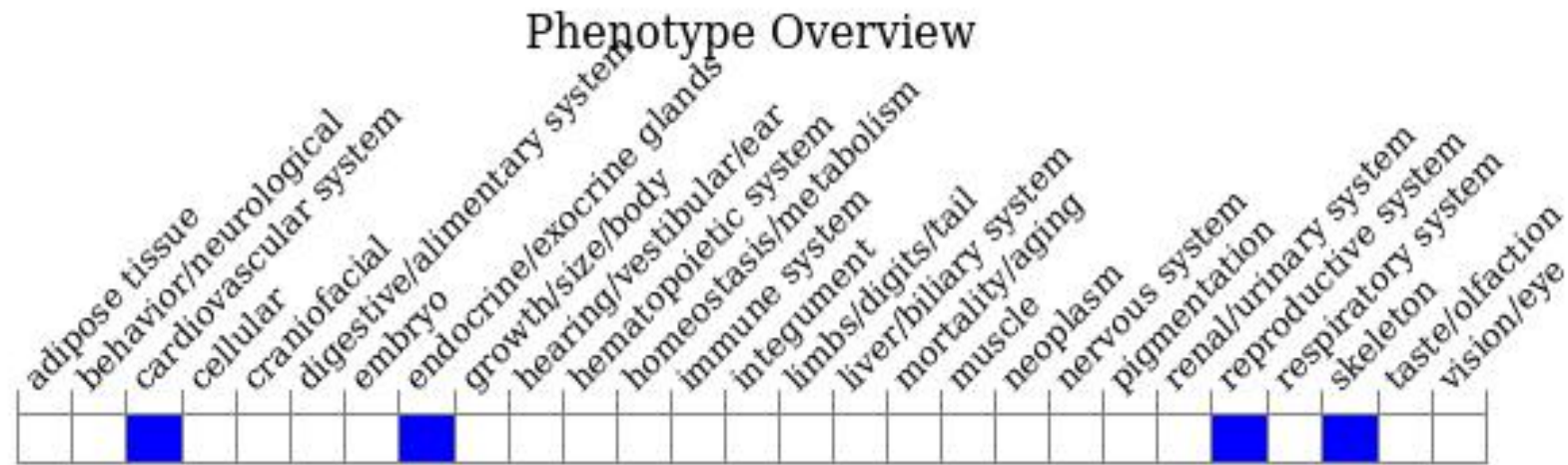
Genomic location distribution



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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