

Phf12 Cas9-CKO Strategy

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Project Overview

Project Name

Phf12

Project type

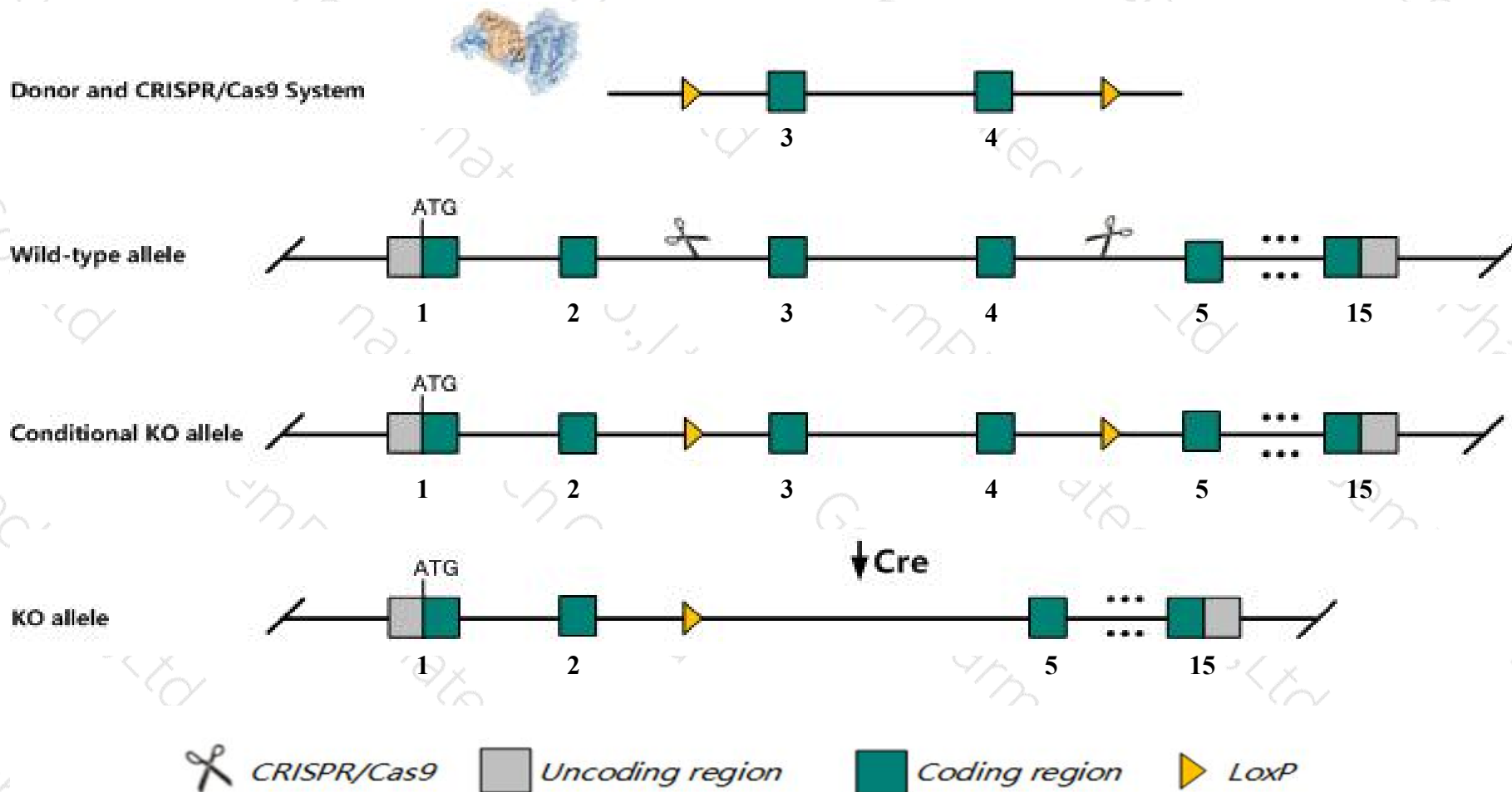
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Phf12* gene. The schematic diagram is as follows:



Technical routes

- The *Phf12* gene has 8 transcripts. According to the structure of *Phf12* gene, exon3-exon4 of *Phf12-201* (ENSMUST00000049167.13) transcript is recommended as the knockout region. The region contains 467bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Phf12* 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

- Transcript *Phf12-207* may not be affected.
- The *Phf12* 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)

Phf12 PHD finger protein 12 [Mus musculus (house mouse)]

Gene ID: 268448, updated on 13-Mar-2020

Summary



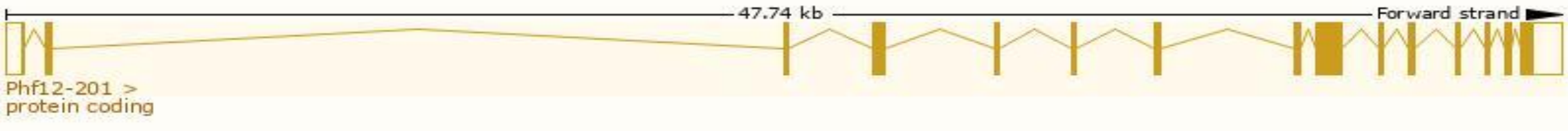
Official Symbol	Phf12 provided by MGI
Official Full Name	PHD finger protein 12 provided by MGI
Primary source	MGI:MGI:1924057
See related	Ensembl:ENSMUSG000000037791
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410142K10Rik, F630045O13, PF1, mKIAA1523
Expression	Ubiquitous expression in thymus adult (RPKM 26.0), spleen adult (RPKM 20.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Phf12-201	ENSMUST00000049167.13	4410	1003aa	Protein coding	CCDS48855	Q3U2C9 Q5SPL2	TSL:1 GENCODE basic APPRIS P1
Phf12-202	ENSMUST00000108360.7	3047	788aa	Protein coding	-	Q5SPL2	TSL:1 GENCODE basic
Phf12-207	ENSMUST00000153428.1	873	278aa	Protein coding	-	Q5SS87	CDS 5' incomplete TSL:1
Phf12-208	ENSMUST00000153747.7	670	73aa	Nonsense mediated decay	-	F7AXU7	CDS 5' incomplete TSL:3
Phf12-205	ENSMUST00000131680.1	636	50aa	Nonsense mediated decay	-	F6U3I4	CDS 5' incomplete TSL:5
Phf12-203	ENSMUST00000123662.1	413	43aa	Nonsense mediated decay	-	F7AKS4	CDS 5' incomplete TSL:3
Phf12-204	ENSMUST00000125079.1	600	No protein	Retained intron	-	-	TSL:2
Phf12-206	ENSMUST00000141620.1	576	No protein	Retained intron	-	-	TSL:3

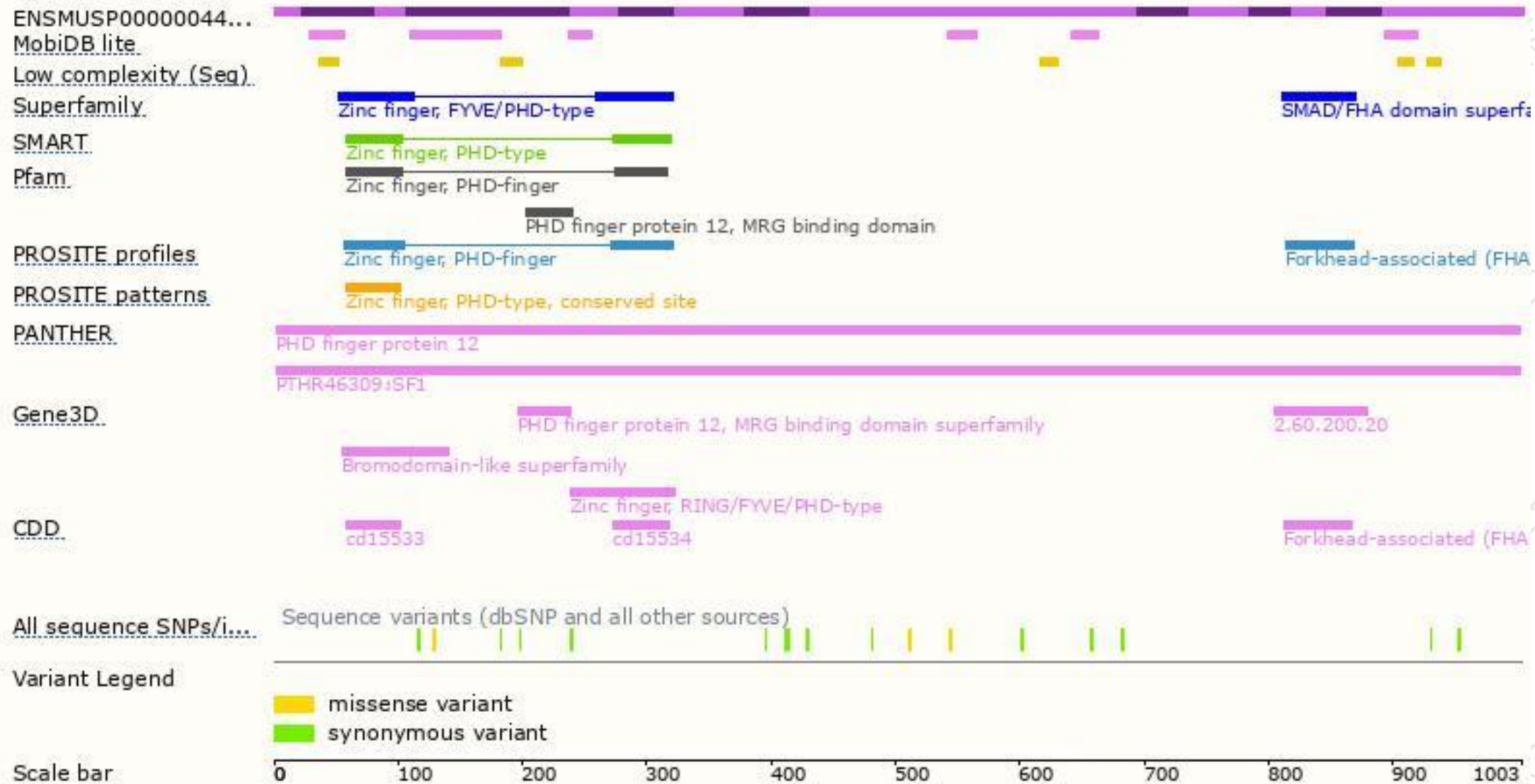
The strategy is based on the design of *Phf12-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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