

Phf20l1 Cas9-CKO Strategy

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Reviewer:

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Design Date:

2020-2-12

Project Overview

Project Name

Phf20l1

Project type

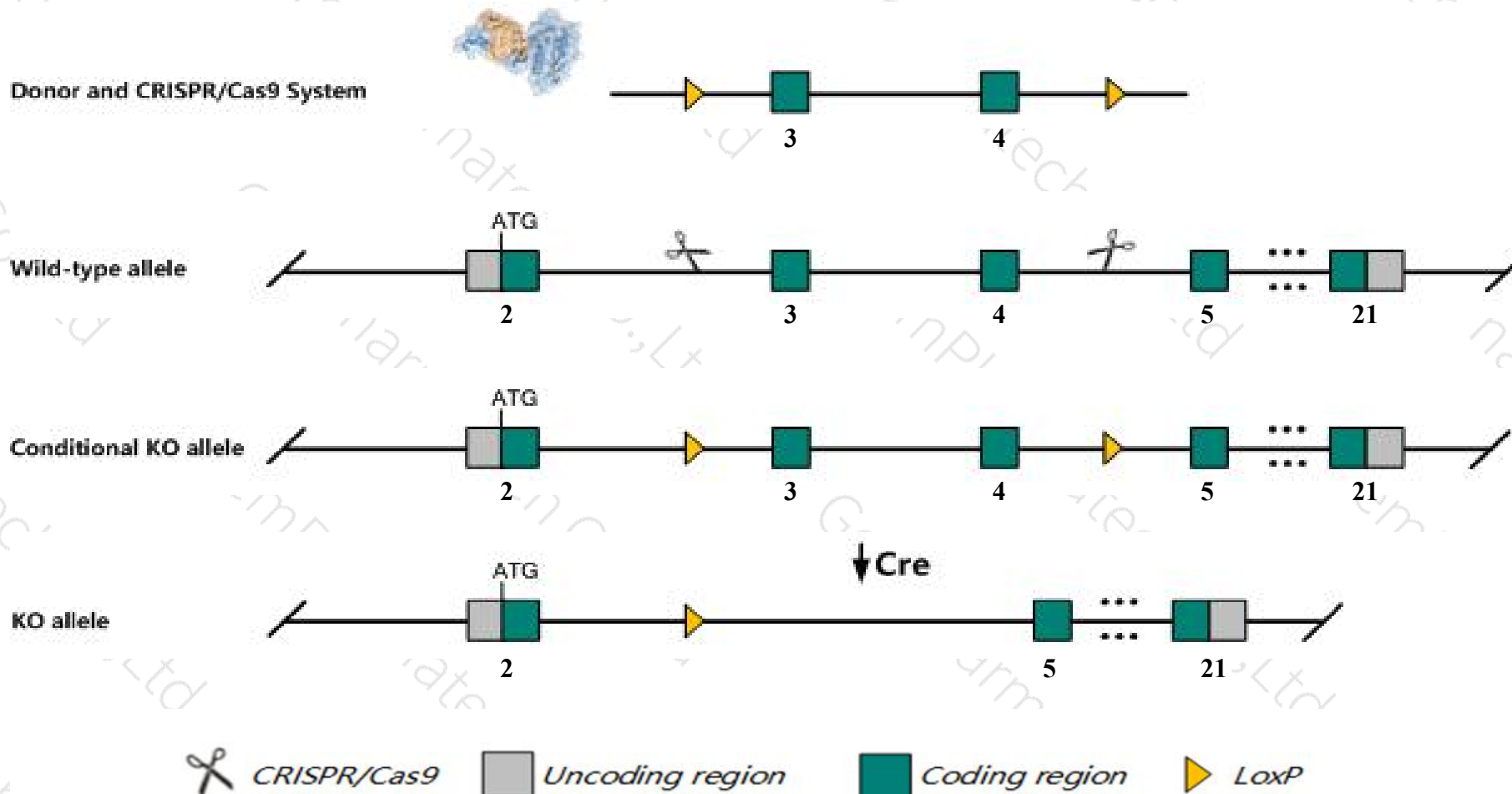
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Phf20l1* gene. The schematic diagram is as follows:



- The *Phf20l1* gene has 12 transcripts. According to the structure of *Phf20l1* gene, exon3-exon4 of *Phf20l1-203* (ENSMUST00000229160.1) transcript is recommended as the knockout region. The region contains 257bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Phf20l1* 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 *Phf2011* gene is located on the Chr15. 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)

Phf20l1 PHD finger protein 20-like 1 [Mus musculus (house mouse)]

Gene ID: 239510, updated on 31-Jan-2019

Summary



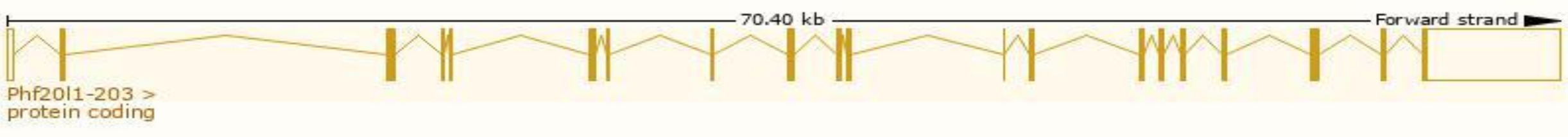
Official Symbol	Phf20l1 provided by MGI
Official Full Name	PHD finger protein 20-like 1 provided by MGI
Primary source	MGI:MGI:2444412
See related	Ensembl:ENSMUSG00000072501
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CGI-72, E130113K22Rik
Expression	Broad expression in CNS E18 (RPKM 6.6), CNS E14 (RPKM 6.2) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

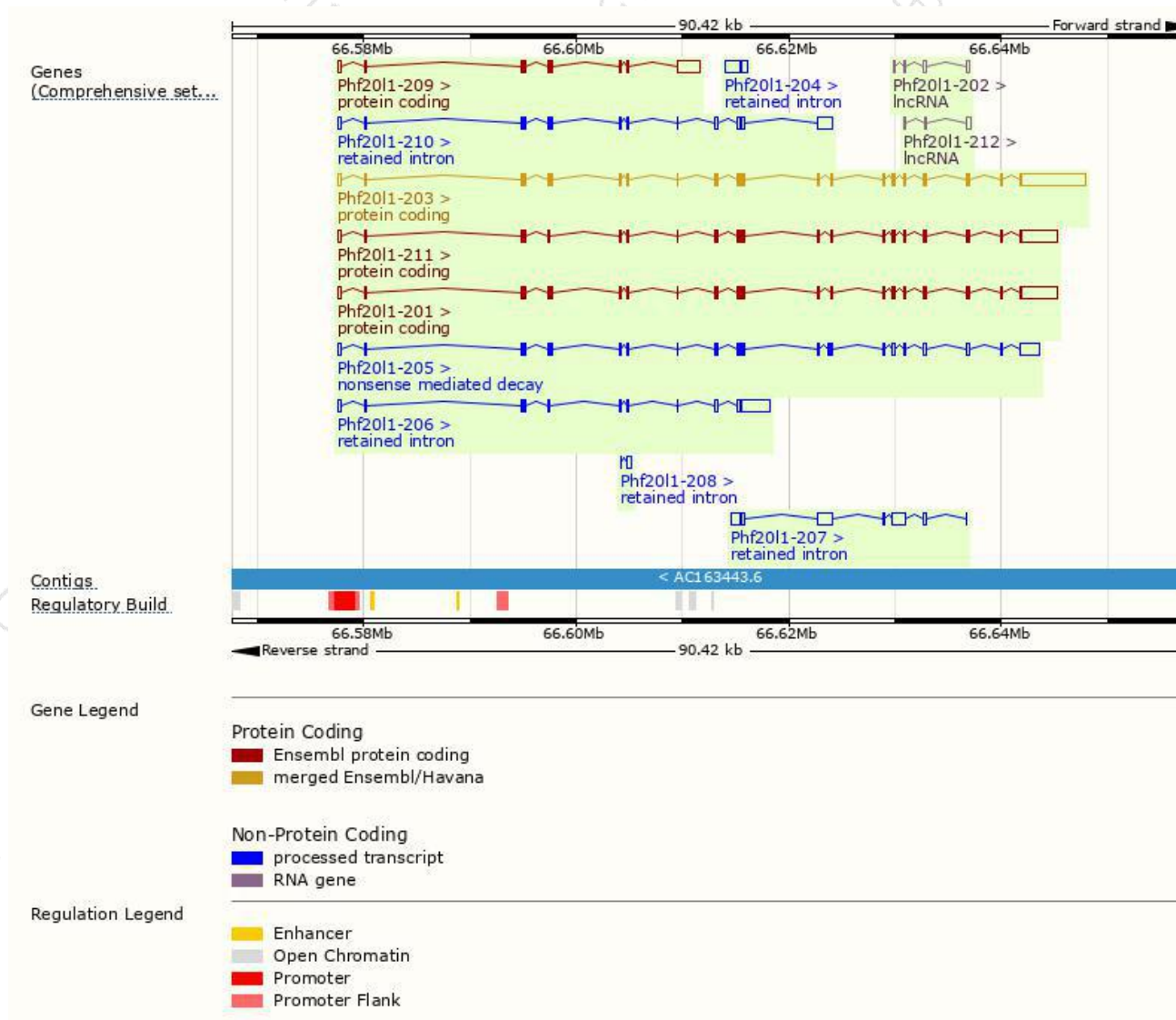
The gene has 12 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Phf201l-203	ENSMUST00000229160.1	9383	1013aa	Protein coding	CCDS49621	Q8CCJ9	GENCODE basic APPRIS P2
Phf201l-201	ENSMUST00000048188.9	6665	1014aa	Protein coding	-	-	TSL:5 GENCODE basic APPRIS ALT2
Phf201l-211	ENSMUST00000230948.1	6584	987aa	Protein coding	-	A0A2R8VHV1	GENCODE basic APPRIS ALT2
Phf201l-209	ENSMUST00000230882.1	3263	311aa	Protein coding	-	Q8CCJ9	GENCODE basic
Phf201l-205	ENSMUST00000229576.1	5094	567aa	Nonsense mediated decay	-	A0A2R8VKH6	
Phf201l-206	ENSMUST00000229590.1	4174	No protein	Retained intron	-	-	
Phf201l-207	ENSMUST00000230250.1	3933	No protein	Retained intron	-	-	
Phf201l-210	ENSMUST00000230915.1	3203	No protein	Retained intron	-	-	
Phf201l-204	ENSMUST00000229486.1	1752	No protein	Retained intron	-	-	
Phf201l-208	ENSMUST00000230584.1	500	No protein	Retained intron	-	-	
Phf201l-202	ENSMUST00000229033.1	796	No protein	lncRNA	-	-	
Phf201l-212	ENSMUST00000231177.1	664	No protein	lncRNA	-	-	

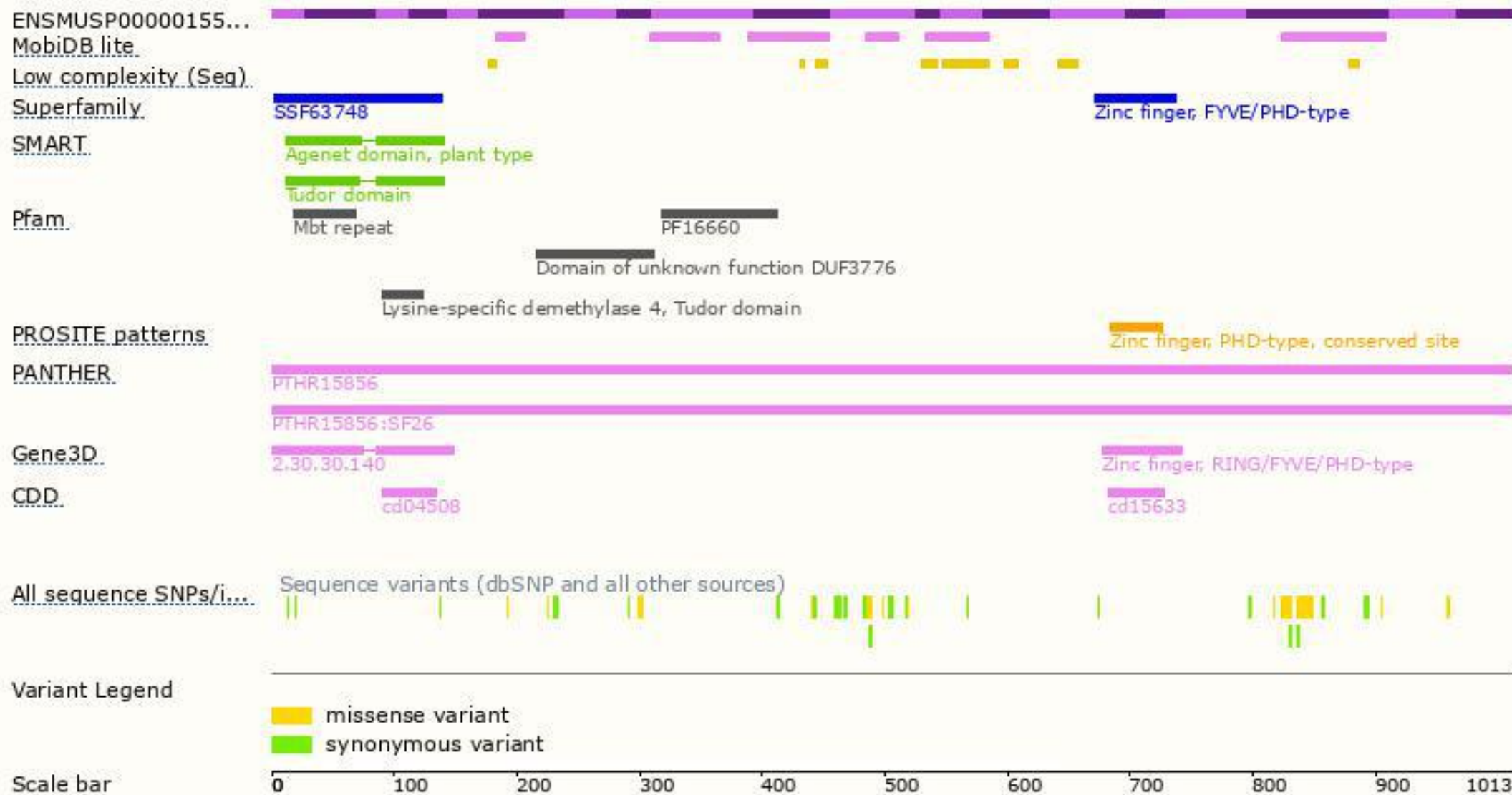
The strategy is based on the design of *Phf201l-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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