

Yipf4 Cas9-CKO Strategy

Designer: Shuang Zhang

Reviewer: Yun Li

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Project Overview

Project Name

Yipf4

Project type

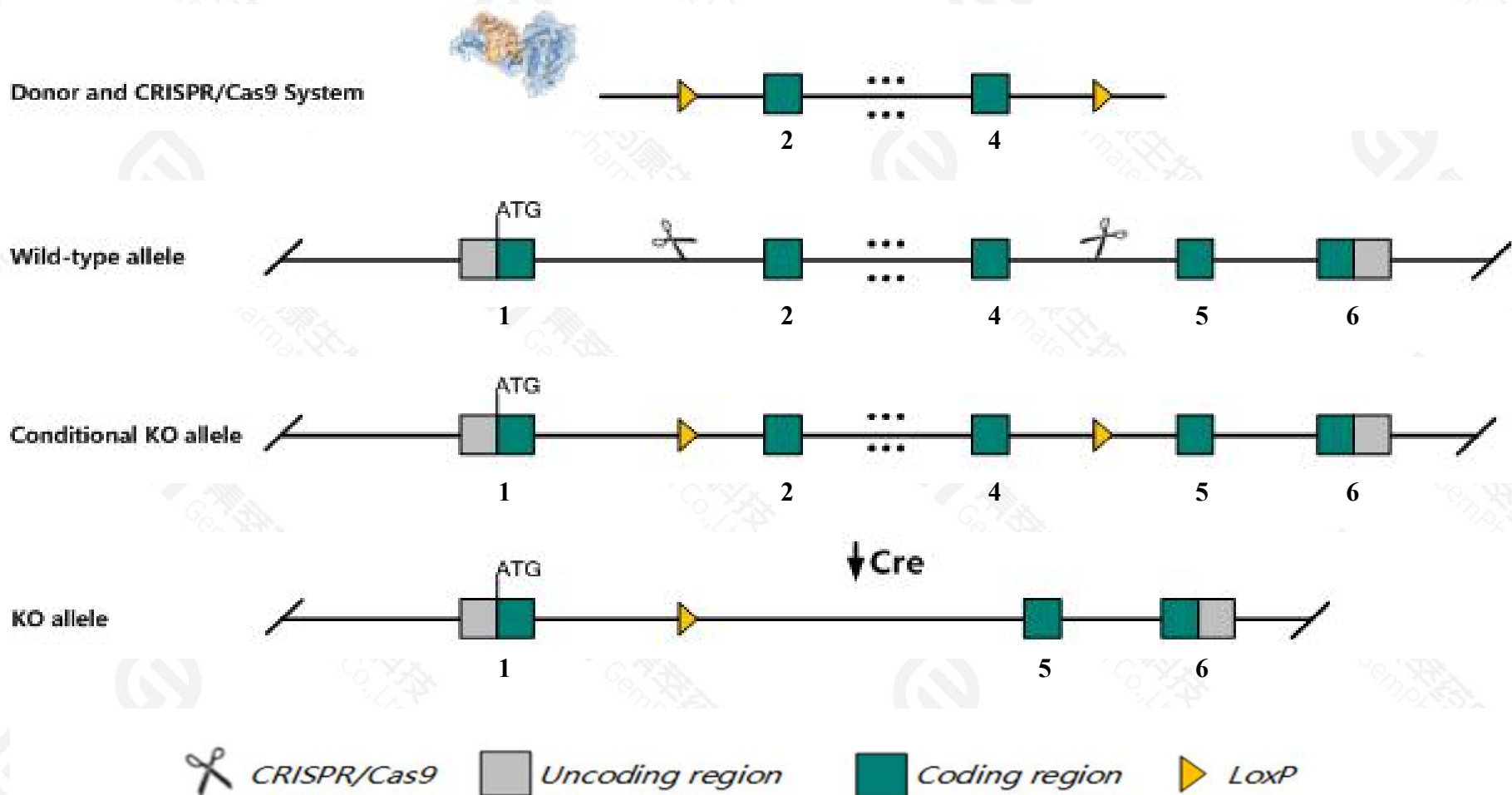
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Yipf4* gene. The schematic diagram is as follows:



- The *Yipf4* gene has 6 transcripts. According to the structure of *Yipf4* gene, exon2-exon4 of *Yipf4*-201(ENSMUST00000024873.7) transcript is recommended as the knockout region. The region contains 410bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Yipf4* 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 *Yipf4* 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)

Yipf4 Yip1 domain family, member 4 [Mus musculus (house mouse)]

Gene ID: 67864, updated on 12-Feb-2021

Summary



Official Symbol Yipf4 provided by [MGI](#)

Official Full Name Yip1 domain family, member 4 provided by [MGI](#)

Primary source [MGI:MGI:1915114](#)

See related [Ensembl:ENSMUSG00000024072](#)

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 2310034L04Rik

Expression Ubiquitous expression in adrenal adult (RPKM 43.1), duodenum adult (RPKM 26.4) and 28 other tissues [See more](#)

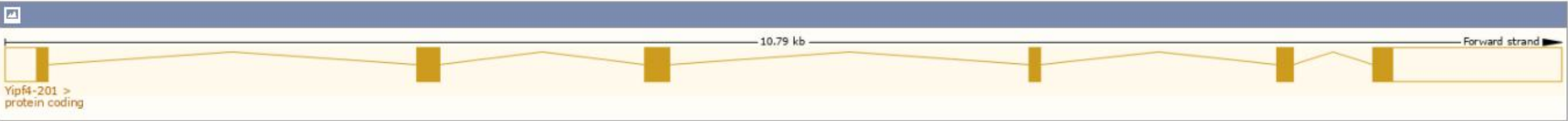
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

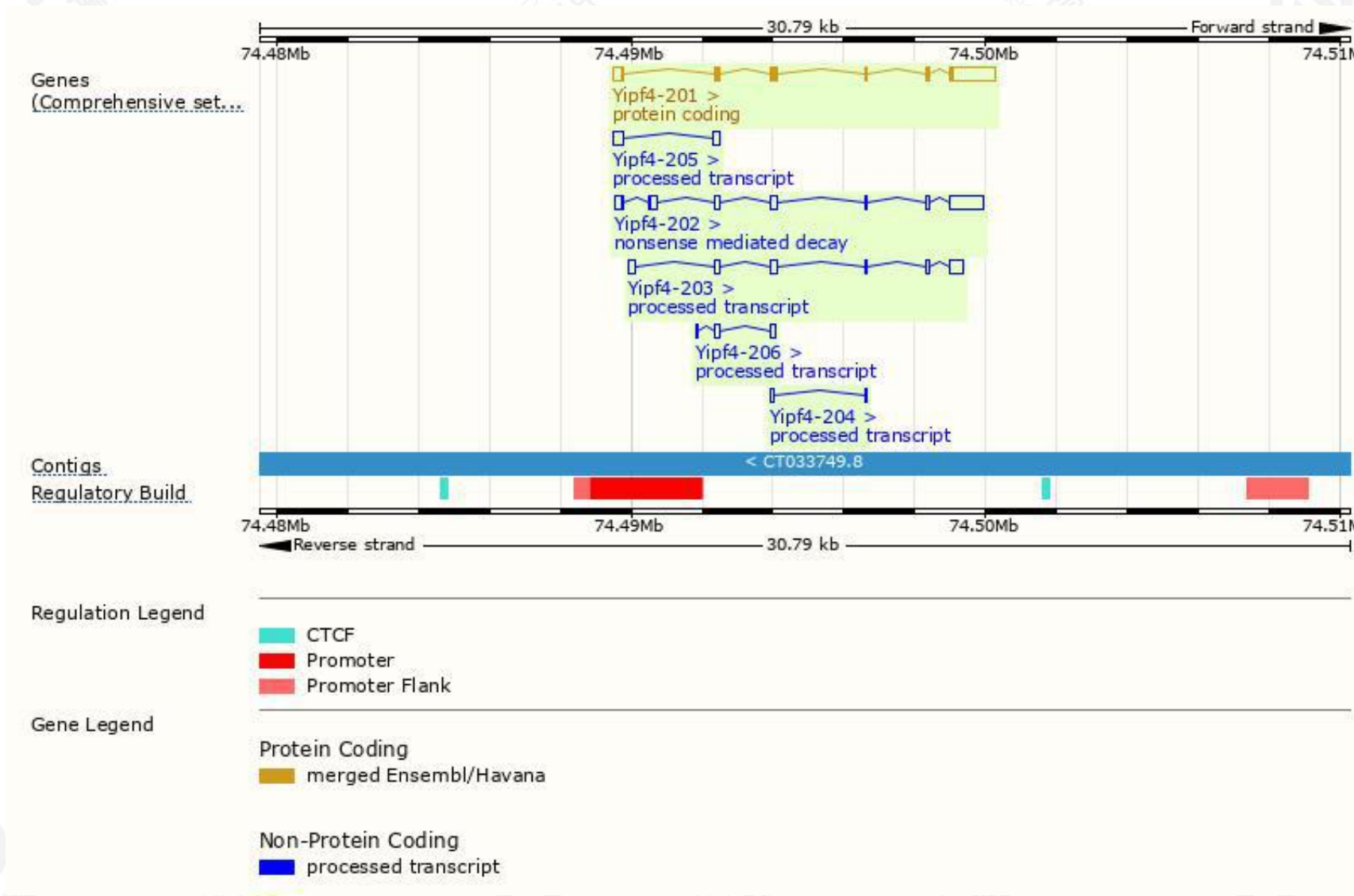
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Yipf4-201	ENSMUST00000024873.7	2133	246aa	Protein coding	CCDS28971		TSL:1 , GENCODE basic , APPRIS P1 ,
Yipf4-202	ENSMUST000000234432.2	1991	39aa	Nonsense mediated decay	-		
Yipf4-203	ENSMUST000000234448.2	1082	No protein	Processed transcript	-		
Yipf4-205	ENSMUST000000234939.2	481	No protein	Processed transcript	-		
Yipf4-206	ENSMUST000000235064.2	343	No protein	Processed transcript	-		
Yipf4-204	ENSMUST000000234853.2	166	No protein	Processed transcript	-		

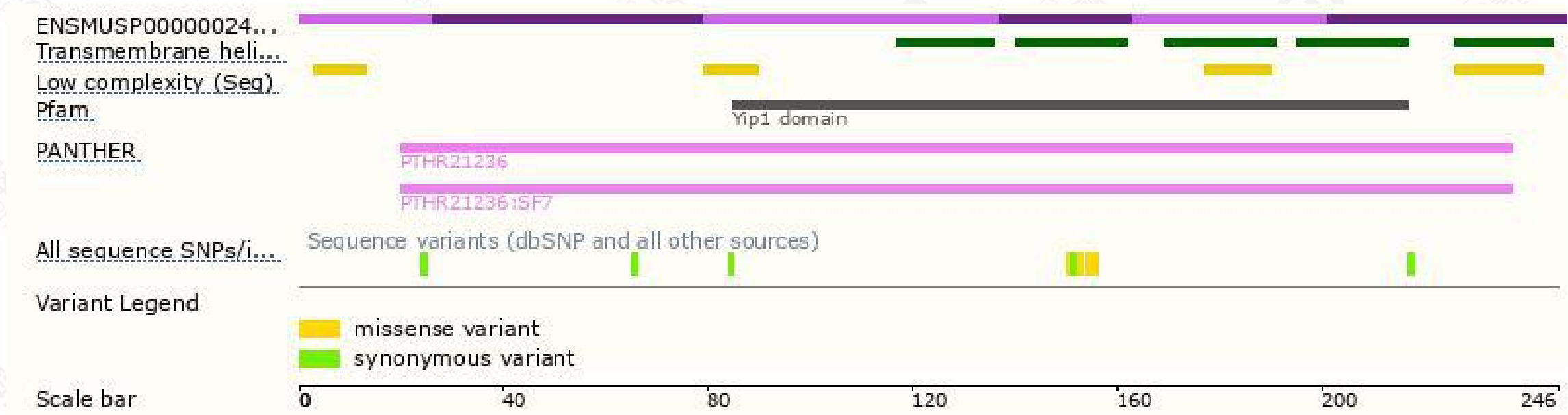
The strategy is based on the design of *Yipf4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.
Tel: 400-9660890

