

***Zdhhc12* Cas9-CKO Strategy**

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Reviewer:JiaYu

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Project Overview

Project Name

Zdhhc12

Project type

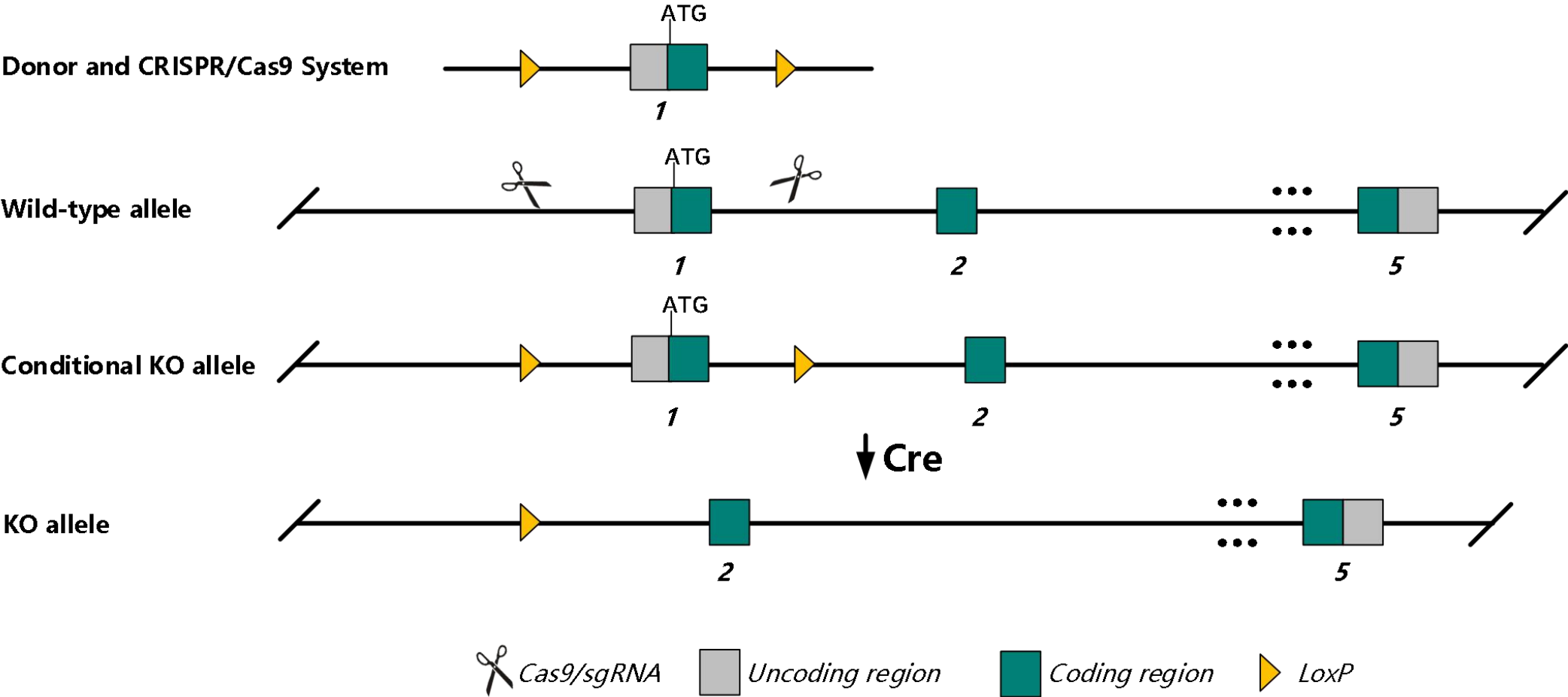
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zdhhc12* gene. The schematic diagram is as follows:



Technical routes

- The *Zdhhc12* gene has 4 transcripts. According to the structure of *Zdhhc12* gene, exon1 of *Zdhhc12-201* (ENSMUST00000081838.6) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zdhhc12* 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 *Zdhhc12* 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)

Zdhhc12 zinc finger, DHHC domain containing 12 [*Mus musculus* (house mouse)]

Gene ID: 66220, updated on 13-Mar-2020

Summary

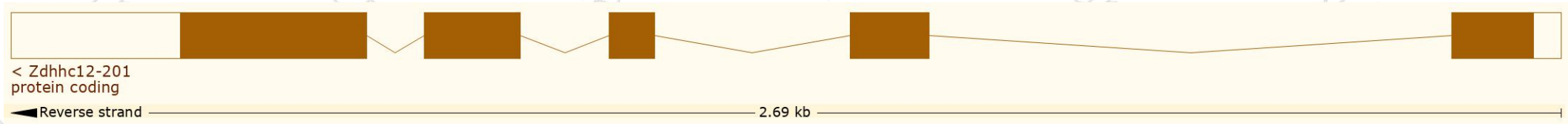
Official Symbol	Zdhhc12 provided by MGI
Official Full Name	zinc finger, DHHC domain containing 12 provided by MGI
Primary source	MGI:MGI:1913470
See related	Ensembl:ENSMUSG00000015335
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1190004A01Rik
Expression	Ubiquitous expression in duodenum adult (RPKM 53.0), testis adult (RPKM 52.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

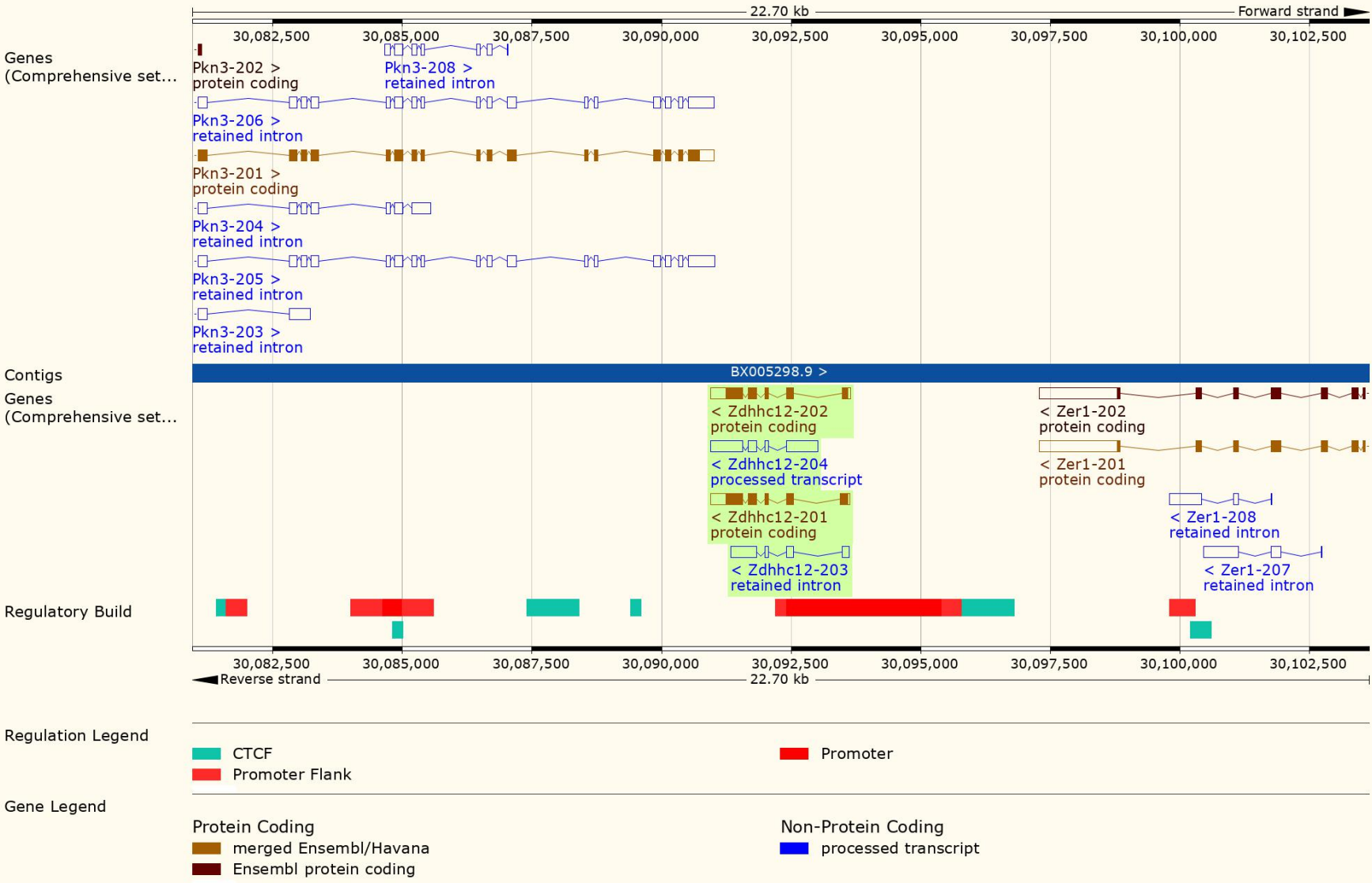
The gene has 4 transcripts,all transcripts are shown below:

Name ▲	Transcript ID ▲	bp ▲	Protein ▲	Biotype ▲	CCDS ▲	UniProt ▲	Flags ▲
Zdhhc12-201	ENSMUST00000081838.6	1187	281aa	Protein coding	CCDS15869	Q8VC90	TSL:1 GENCODE basic
Zdhhc12-202	ENSMUST00000102865.10	1165	267aa	Protein coding	CCDS15868	Q8VC90	TSL:1 GENCODE basic APPRIS P1
Zdhhc12-203	ENSMUST00000137001.1	846	No protein	Retained intron	-	-	TSL:2
Zdhhc12-204	ENSMUST00000148717.7	1483	No protein	Processed transcript	-	-	TSL:2

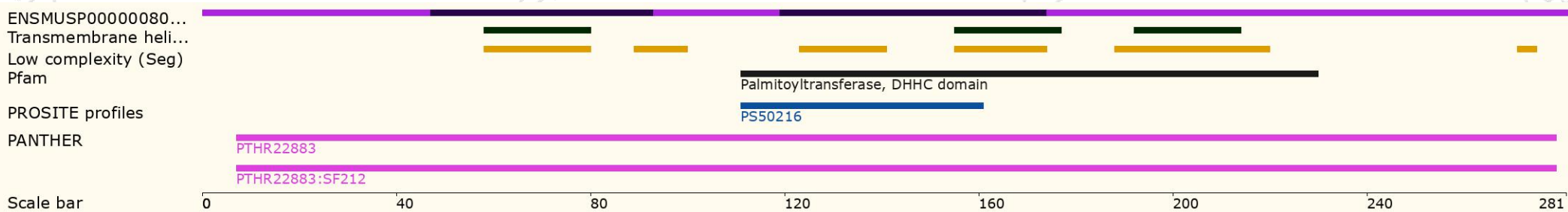
The strategy is based on the design of *Zdhhc12-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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