Zdhhc19 Cas9-CKO Strategy

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Project Overview

Project Name	***Zdhhc19***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

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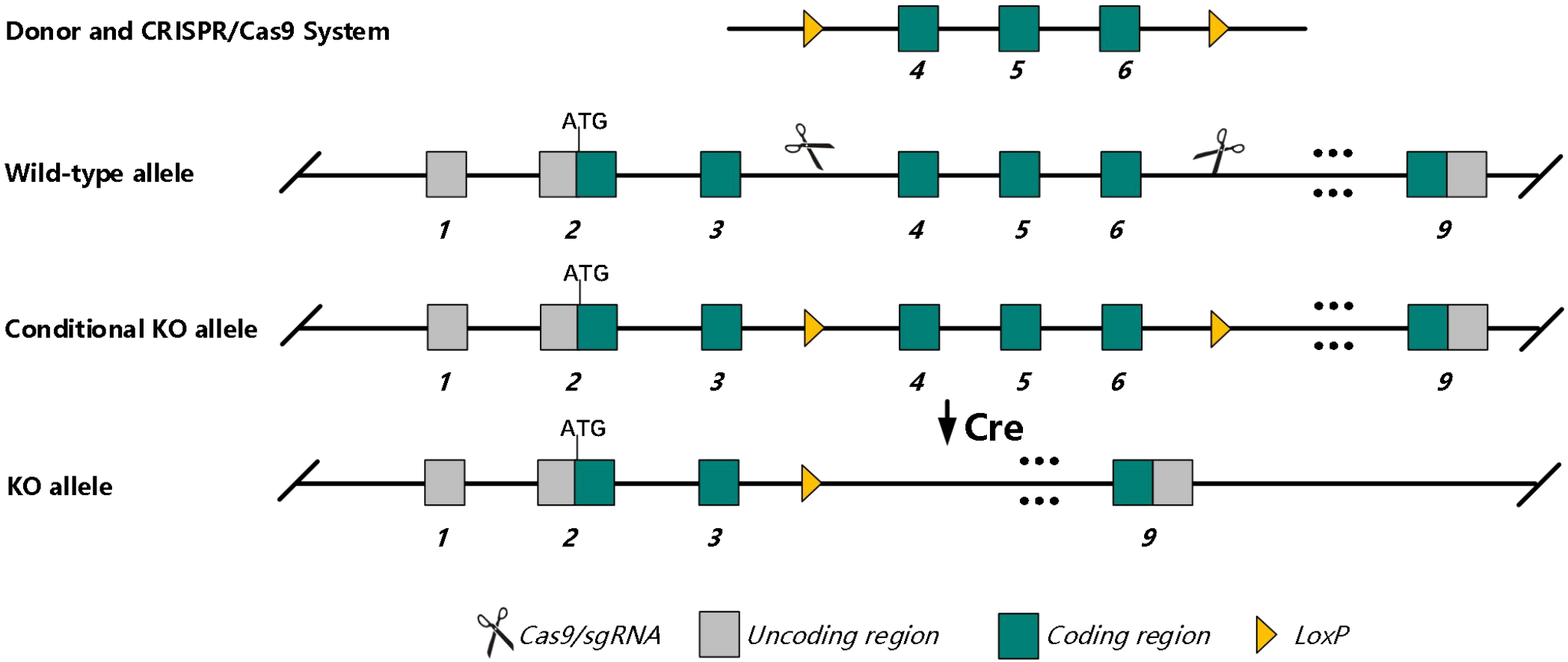
This model will use CRISPR/Cas9 technology to edit the *Zdhhc19* gene. The schematic diagram is as follows:



Technical routes

- The *Zdhhc19* gene has 5 transcripts. According to the structure of *Zdhhc19* gene, exon4-exon6 of *Zdhhc19-201* (ENSMUST00000064192.7) transcript is recommended as the knockout region.The region contains 419bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Zdhhc19* 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 *Zdhhc19* gene is located on the Chr16. 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）

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Zdhhc19 zinc finger, DHHC domain containing 19 [*Mus musculus* (house mouse)]

Gene ID: 245308, updated on 13-Mar-2020

Summary

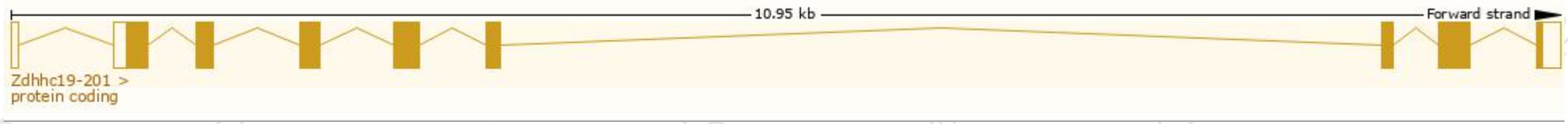
Official Symbol	Zdhhc19 provided by MGI
Official Full Name	zinc finger, DHHC domain containing 19 provided by MGI
Primary source	MGI:MGI:2682948
See related	Ensembl:ENSMUSG00000052363
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm616; Gm1744
Expression	Restricted expression toward testis adult (RPKM 76.6) See more
Orthologs	human all

Transcript information（Ensembl）

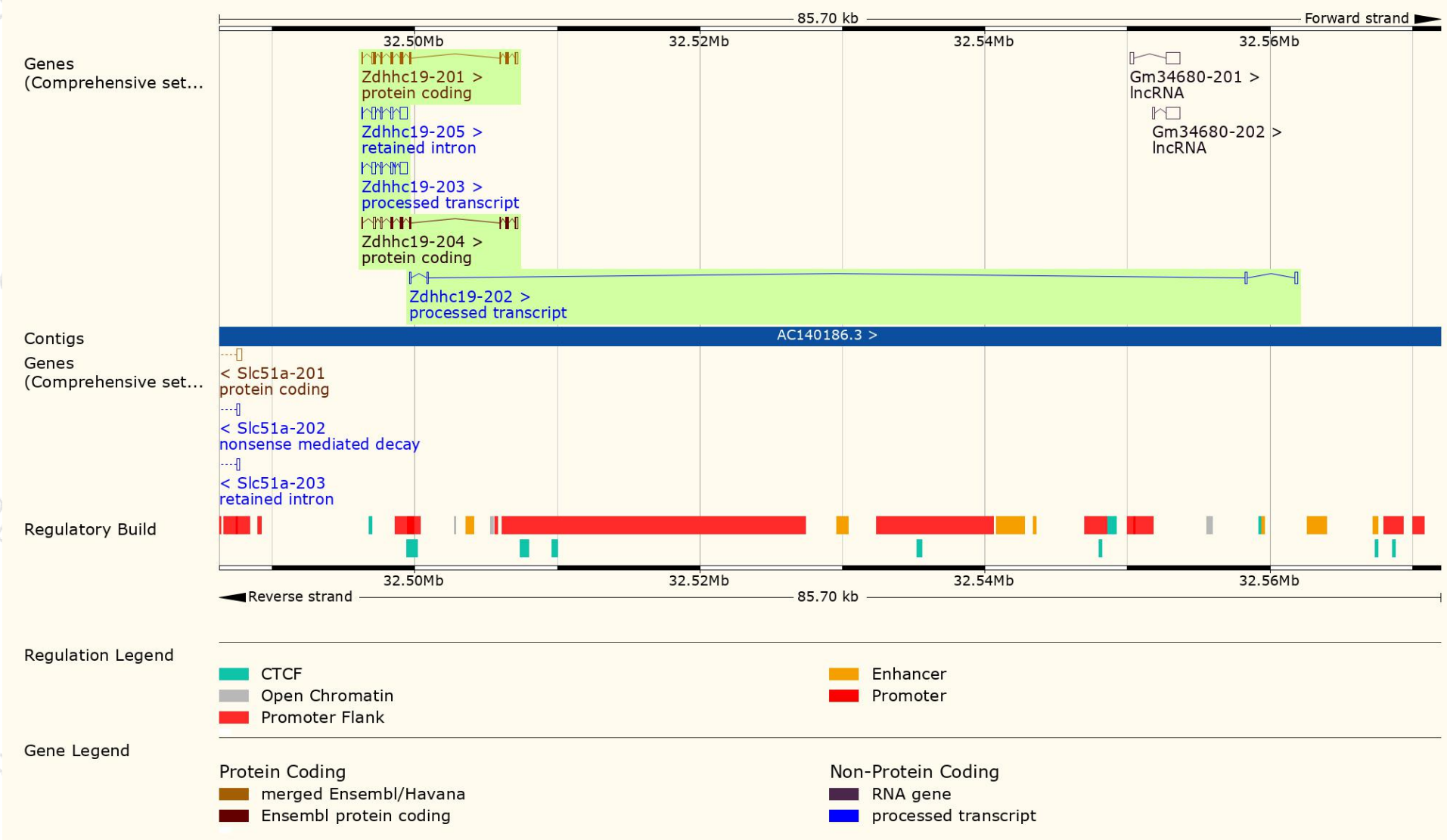
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zdhhc19-201	ENSMUST00000064192.7	1323	347aa	Protein coding	CCDS28122	Q810M5	TSL:1 GENCODE basic APPRIS P2
Zdhhc19-202	ENSMUST00000160832.1	631	No protein	Processed transcript	-	-	TSL:3
Zdhhc19-203	ENSMUST00000231293.1	1098	No protein	Processed transcript	-	-	-
Zdhhc19-204	ENSMUST00000231510.1	1181	251aa	Protein coding	-	A0A338P7I3	GENCODE basic APPRIS ALT2
Zdhhc19-205	ENSMUST00000232434.1	1067	No protein	Retained intron	-	-	-

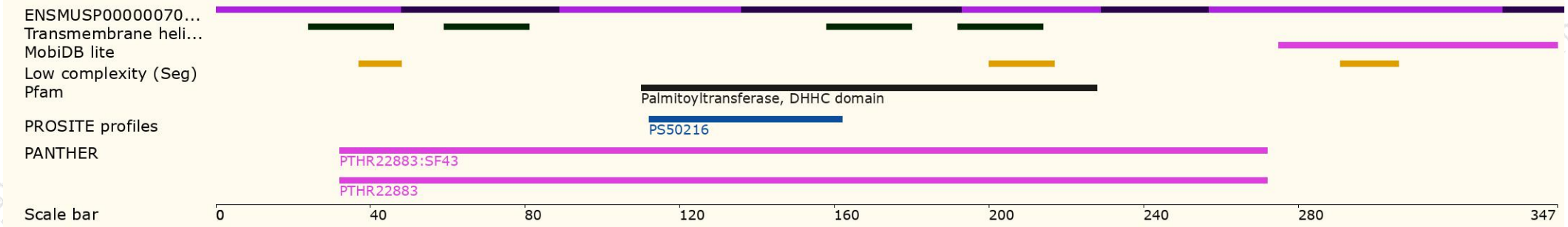
The strategy is based on the design of *Zdhhc19-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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