

***Zdhhc15* Cas9-CKO Strategy**

Designer:Xiaojing Li

Reviewer:JiaYu

Design Date:2020-3-24

Project Overview

Project Name

Zdhhc15

Project type

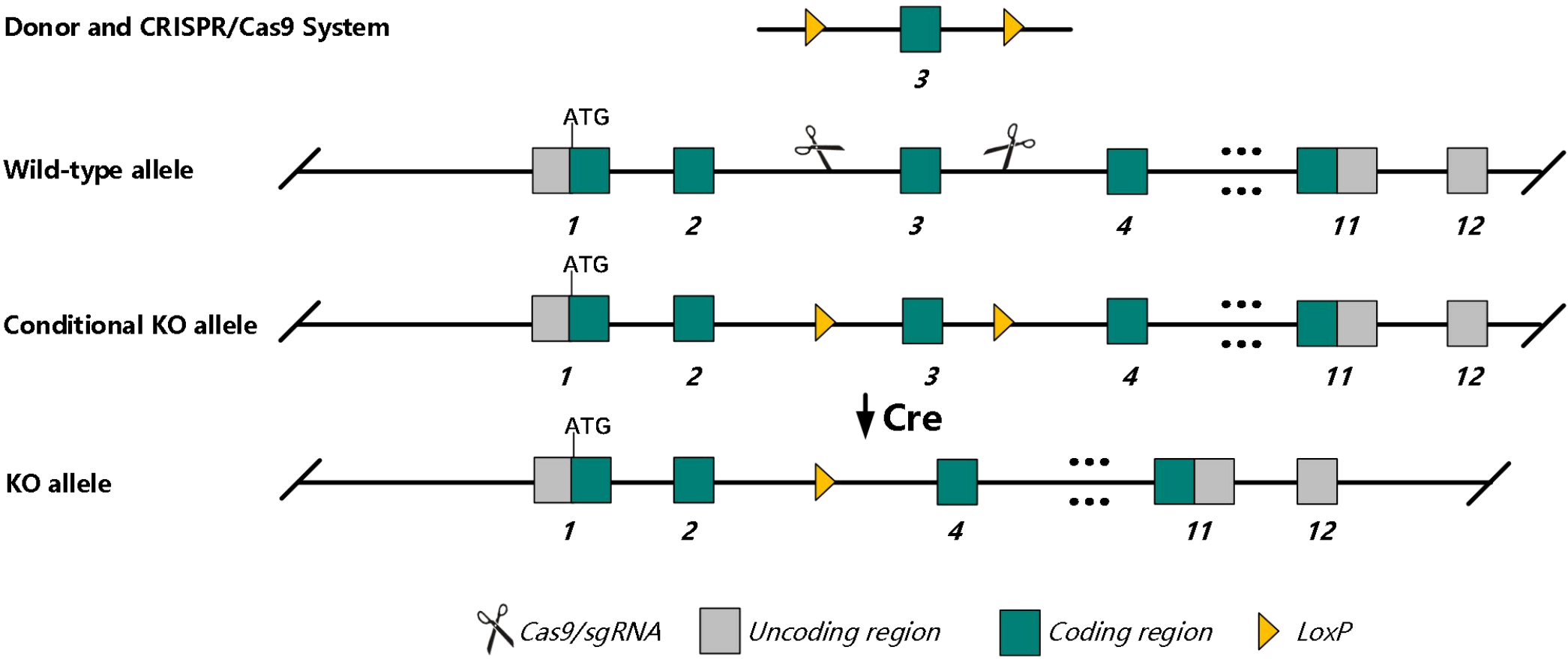
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zdhhc15* gene. The schematic diagram is as follows:



- The *Zdhhc15* gene has 1 transcript. According to the structure of *Zdhhc15* gene, exon3 of *Zdhhc15-201* (ENSMUST00000042070.5) transcript is recommended as the knockout region. The region contains 95bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zdhhc15* 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.

- According to the existing MGI data, Male chimeras hemizygous for a gene trapped allele exhibit a severe developmental delay and neural tube defects.
- The *Zdhhc15* gene is located on the ChrX. 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)

Zdhhc15 zinc finger, DHHC domain containing 15 [*Mus musculus* (house mouse)]

Gene ID: 108672, updated on 13-Mar-2020

Summary

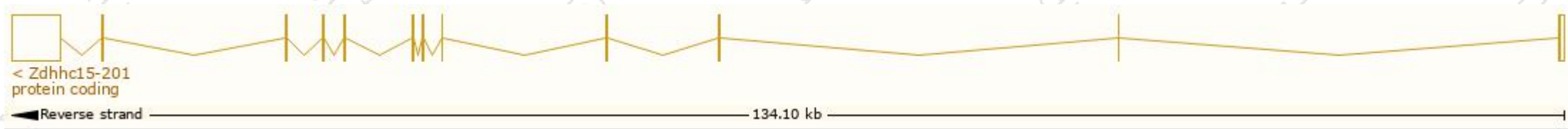
Official Symbol	Zdhhc15 provided by MGI
Official Full Name	zinc finger, DHHC domain containing 15 provided by MGI
Primary source	MGI:MGI:1915336
See related	Ensembl:ENSMUSG000000033906
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	6030457O13Rik
Expression	Broad expression in limb E14.5 (RPKM 3.1), CNS E11.5 (RPKM 2.2) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

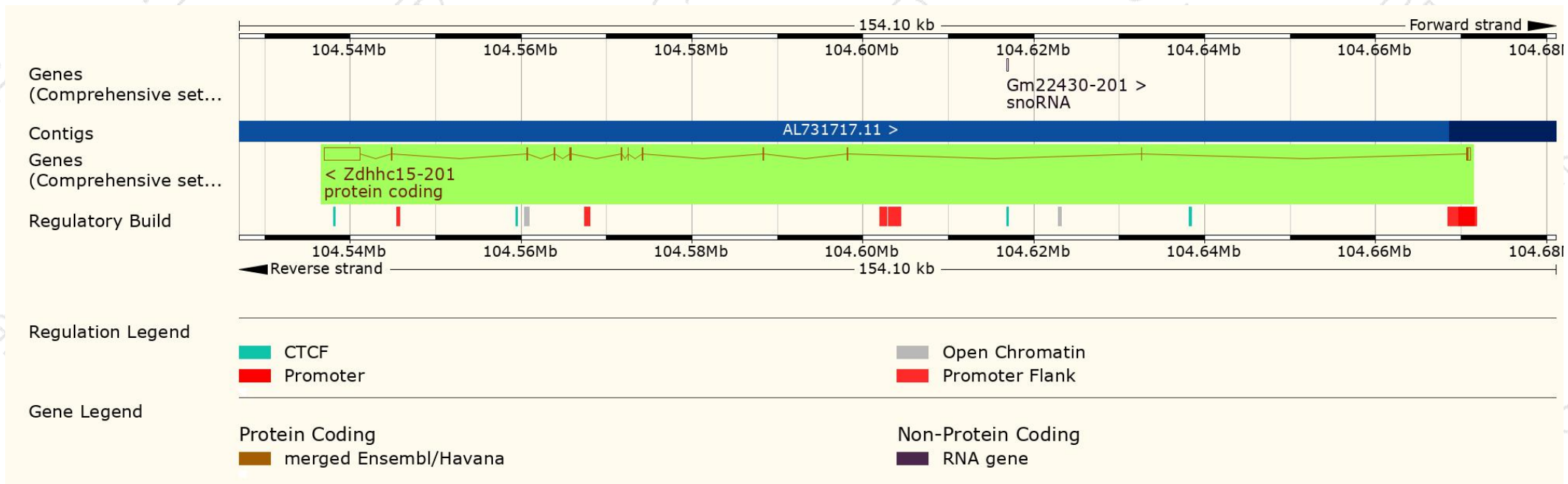
The gene has 1 transcript,all transcripts are shown below:

Name ▲	Transcript ID ▲	bp ▲	Protein ▲	Biotype ▲	CCDS ▲	UniProt ▲	Flags ▲
Zdhhc15-201	ENSMUST00000042070.5	5509	337aa	Protein coding	CCDS30332	Q8BGJ0	TSL:1 Gencode basic APPRIS P1

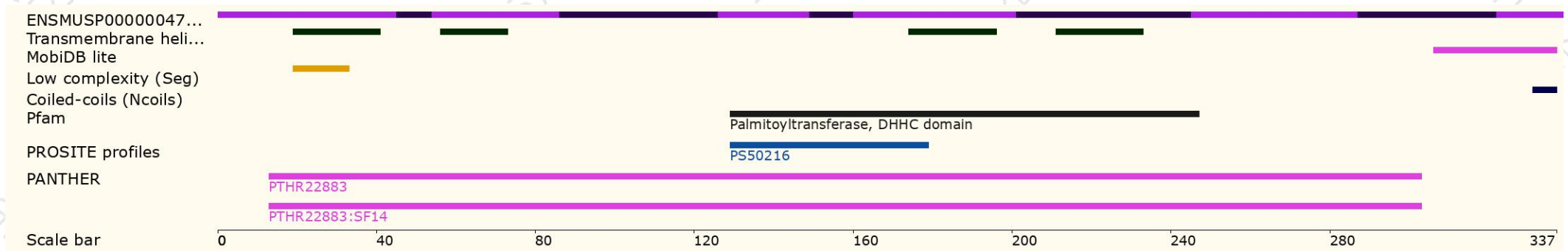
The strategy is based on the design of *Zdhhc15-201* transcript,The transcription is shown below



Genomic location distribution

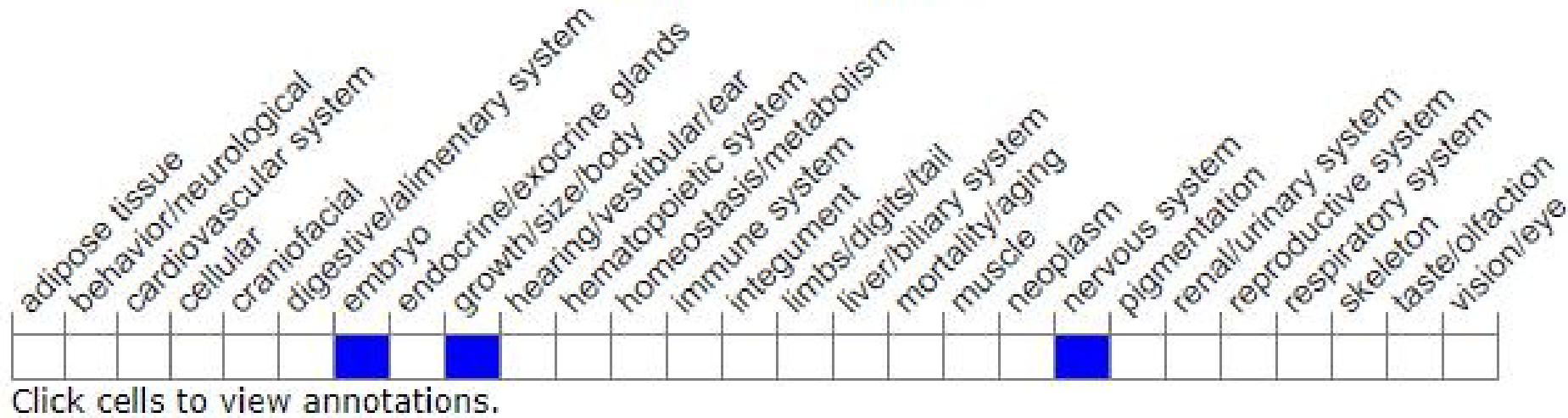


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

Male chimeras hemizygous for a gene trapped allele exhibit a severe developmental delay and neural tube defects.

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

Tel: 400-9660890

