

Zdhhc2 Cas9-CKO Strategy

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Project Overview

Project Name

Zdhhc2

Project type

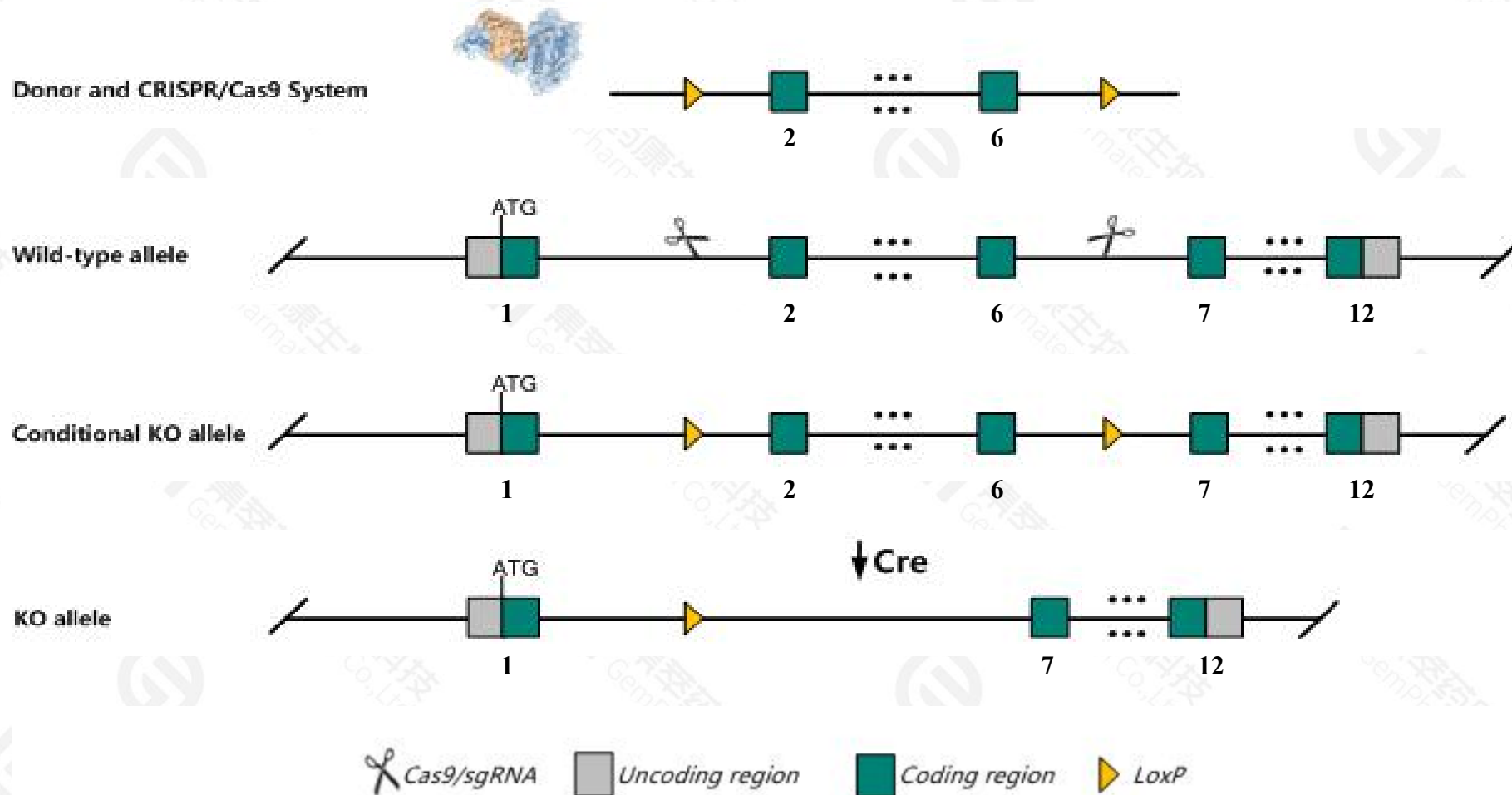
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zdhhc2* gene. The schematic diagram is as follows:



- The *Zdhhc2* gene has 6 transcripts. According to the structure of *Zdhhc2* gene, exon2-exon6 of *Zdhhc2*-201(ENSMUST00000049389.11) transcript is recommended as the knockout region. The region contains 346bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zdhhc2* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor was constructed. Cas9, sgRNA 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 was 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 *Zdhhc2* gene is located on the Chr8. 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)

Zdhhc2 zinc finger, DHHC domain containing 2 [Mus musculus (house mouse)]

Gene ID: 70546, updated on 17-Feb-2021

Summary



Official Symbol Zdhhc2 provided by [MGI](#)

Official Full Name zinc finger, DHHC domain containing 2 provided by [MGI](#)

Primary source [MGI:MGI:1923452](#)

See related [Ensembl:ENSMUSG00000039470](#)

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 5730415P04Rik, 6430583A19Rik, DHHC-2

Expression Broad expression in CNS E18 (RPKM 7.5), cortex adult (RPKM 6.3) and 21 other tissues [See more](#)

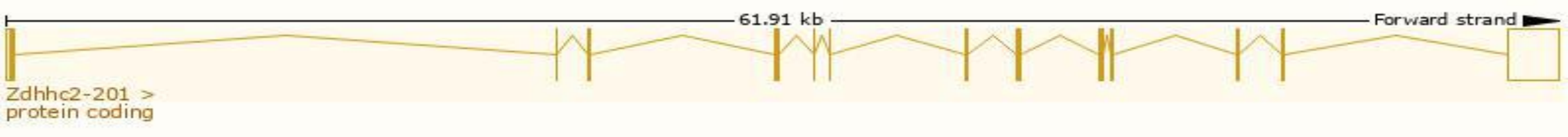
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

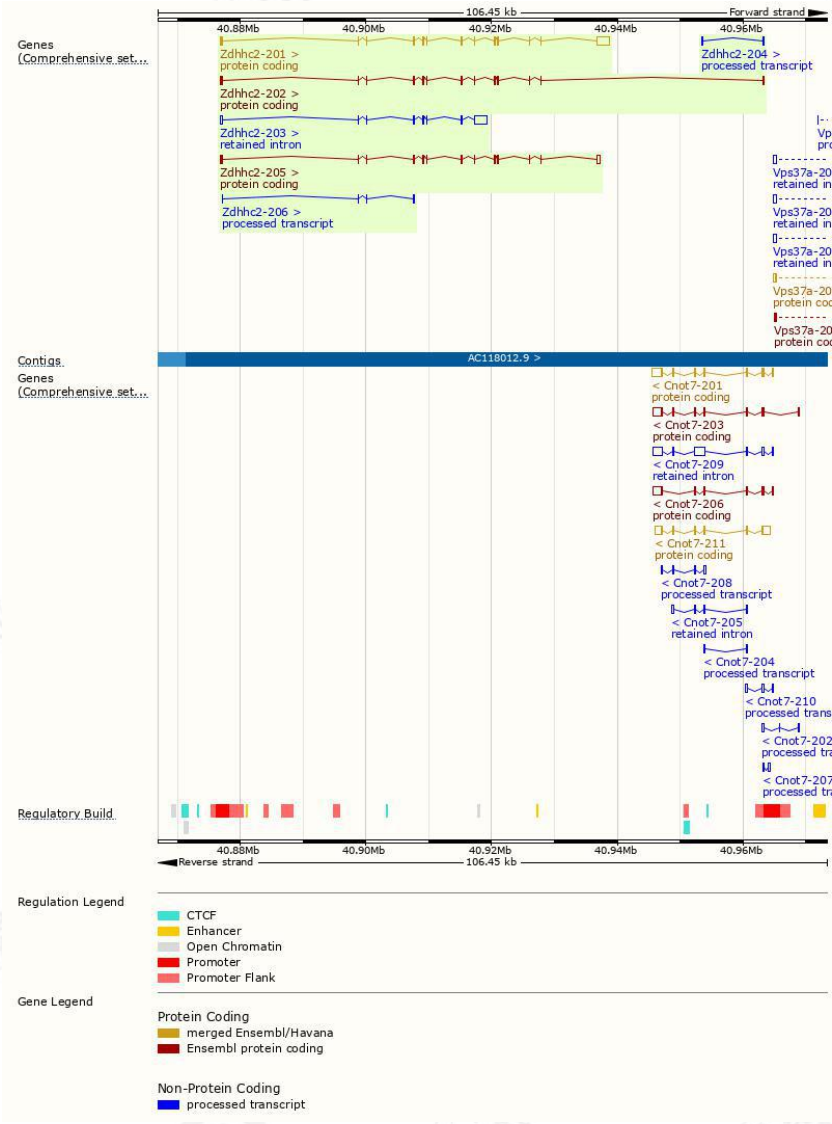
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zdhhc2-201	ENSMUST00000049389.11	3381	366aa	Protein coding	CCDS22252		TSL:1 , GENCODE basic , APPRIS P1 ,
Zdhhc2-205	ENSMUST00000167766.2	1759	366aa	Protein coding	CCDS22252		TSL:1 , GENCODE basic , APPRIS P1 ,
Zdhhc2-202	ENSMUST00000128166.8	1547	366aa	Protein coding	CCDS22252		TSL:1 , GENCODE basic , APPRIS P1 ,
Zdhhc2-206	ENSMUST00000168799.2	287	No protein	Processed transcript	-		TSL:1 ,
Zdhhc2-204	ENSMUST00000164934.2	247	No protein	Processed transcript	-		TSL:5 ,
Zdhhc2-203	ENSMUST00000131672.9	2848	No protein	Retained intron	-		TSL:1 ,

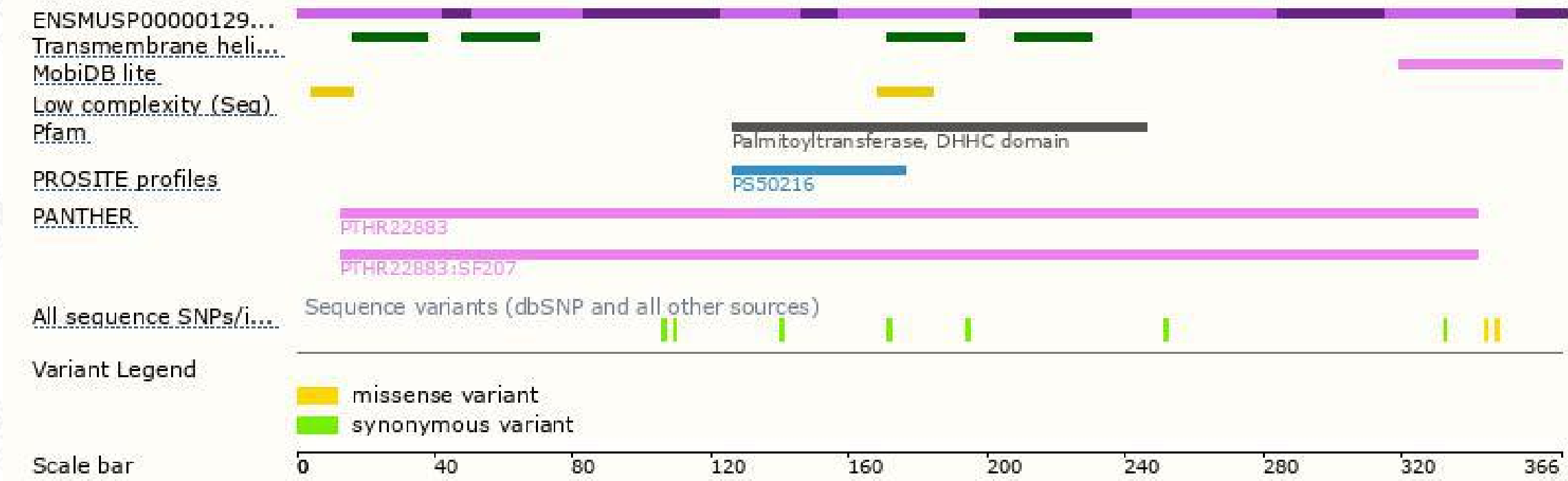
The strategy is based on the design of *Zdhhc2-201* transcript,the transcription is shown below:



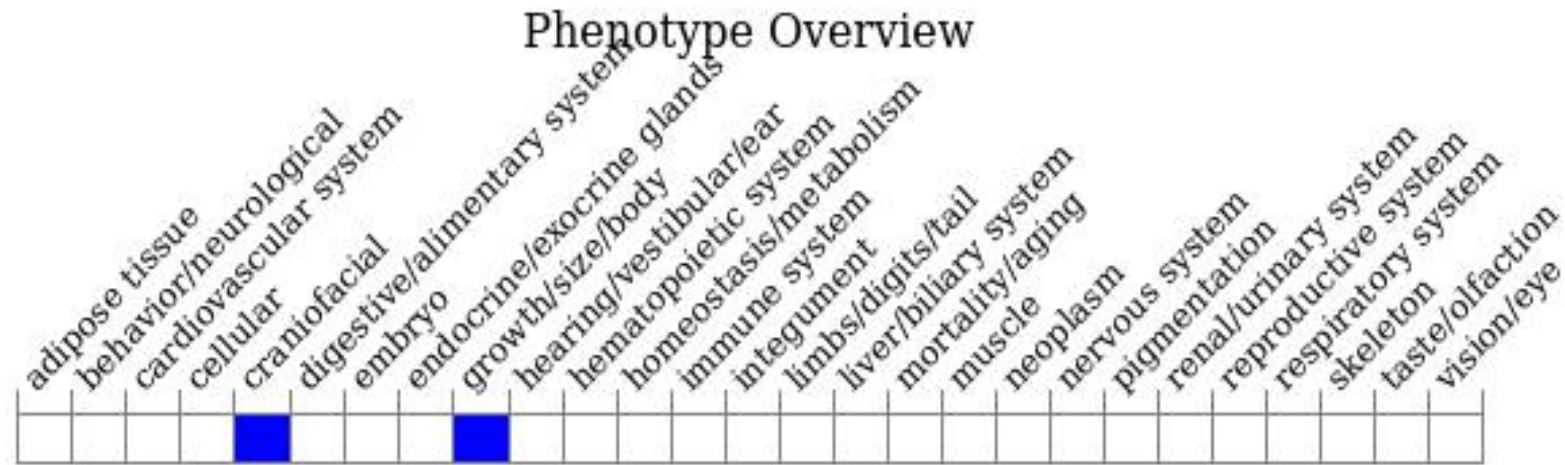
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



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

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

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