

Zdhhc9 Cas9-CKO Strategy

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Project Overview

Project Name

Zdhhc9

Project type

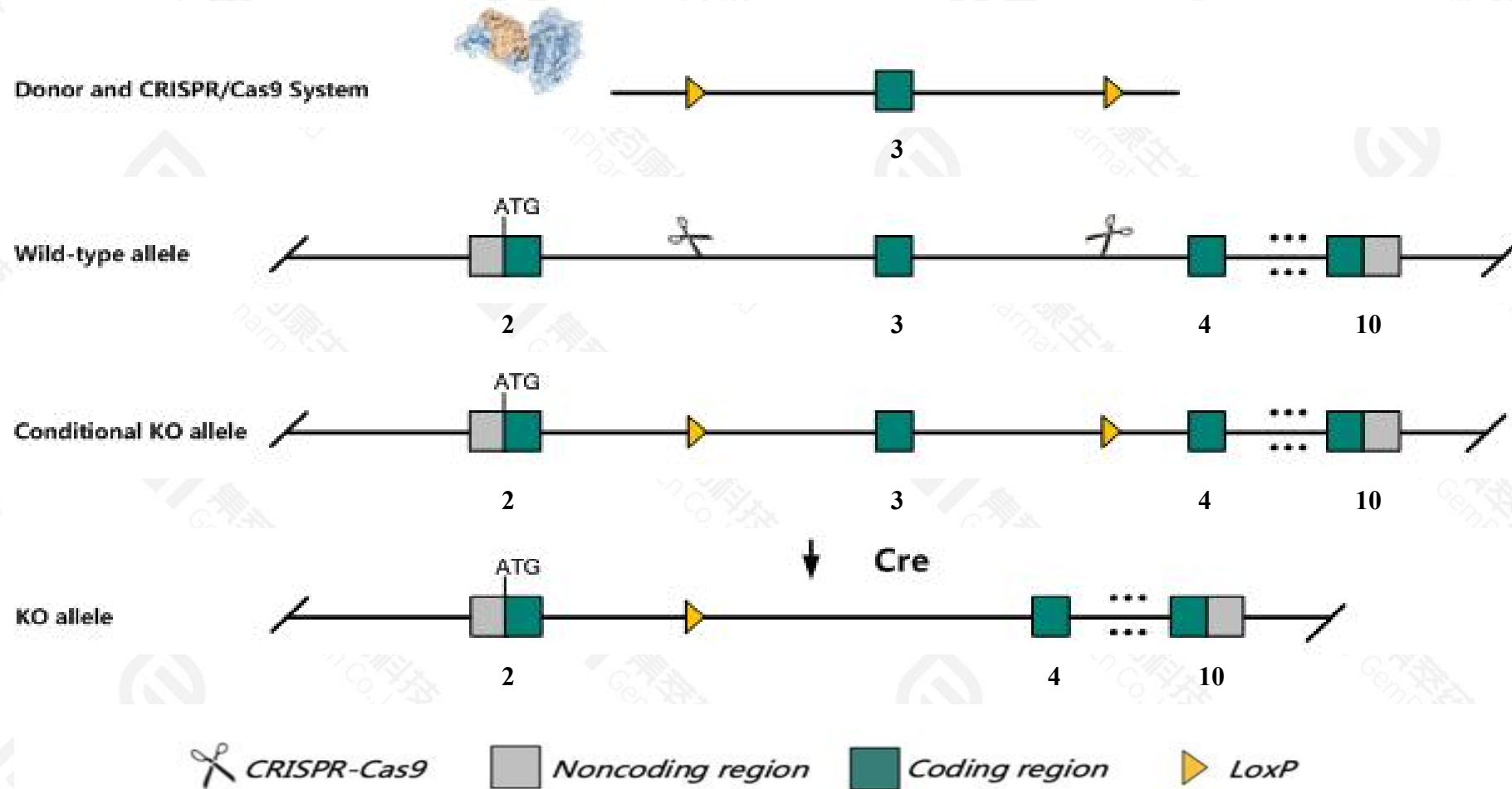
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR-Cas9 technology to edit the *Zdhhc9* gene. The schematic diagram is as follows:



- The *Zdhhc9* gene has 6 transcripts. According to the structure of *Zdhhc9* gene, exon3 of *Zdhhc9*-201(ENSMUST00000037960.11) transcript is recommended as the knockout region. The region contains 161bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Zdhhc9* 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, null males exhibit decreased body weight, hypotonia, decreased anxiety, spatial learning deficits, decreased acoustic startle response and decreased corpus callosum volume.
- The *Zdhhc9* 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)

Zdhhc9 zinc finger, DHHC domain containing 9 [Mus musculus (house mouse)]

Gene ID: 208884, updated on 24-Apr-2022

Summary



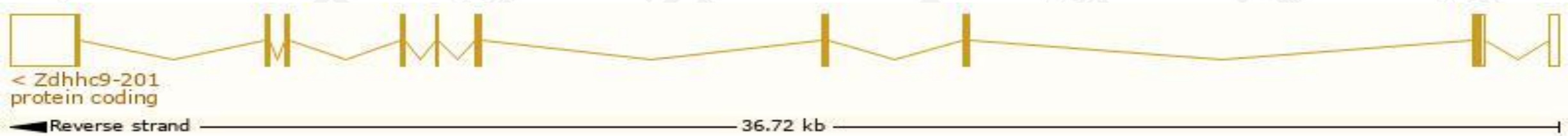
Official Symbol	Zdhhc9 provided by MGI
Official Full Name	zinc finger, DHHC domain containing 9 provided by MGI
Primary source	MGI:MGI:2444393
See related	Ensembl:ENSMUSG00000036985
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	6430508G22, 9530098M12Rik
Expression	Ubiquitous expression in kidney adult (RPKM 25.5), liver adult (RPKM 24.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

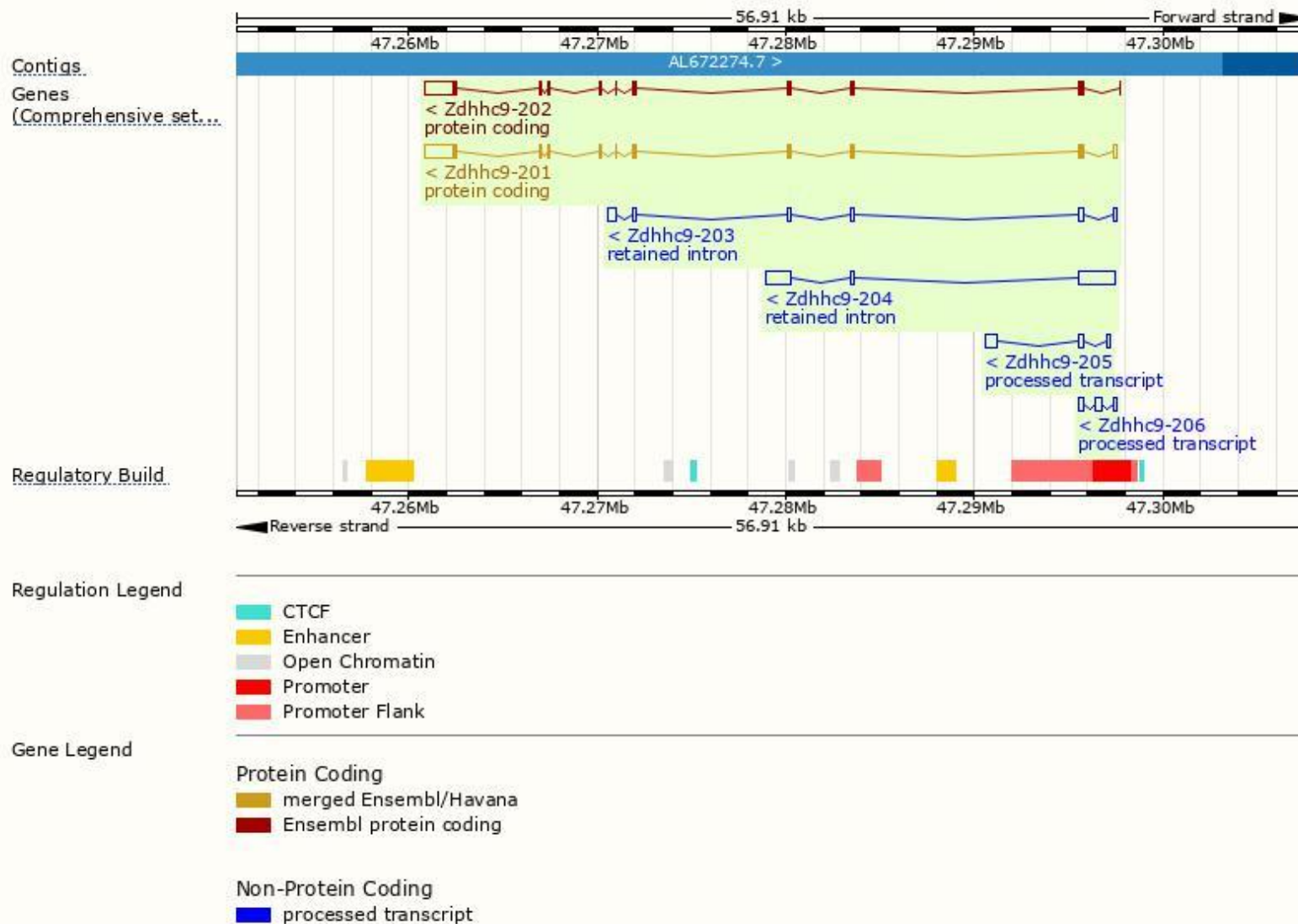
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zdhhc9-201	ENSMUST00000037960.11	2982	364aa	Protein coding	CCDS40960		TSL:1 , GENCODE basic , APPRIS P1 ,
Zdhhc9-202	ENSMUST00000088935.4	2815	364aa	Protein coding	CCDS40960		TSL:1 , GENCODE basic , APPRIS P1 ,
Zdhhc9-205	ENSMUST00000132652.8	1102	No protein	Processed transcript	-		TSL:1 ,
Zdhhc9-206	ENSMUST00000149416.2	866	No protein	Processed transcript	-		TSL:3 ,
Zdhhc9-204	ENSMUST00000127440.2	3432	No protein	Retained intron	-		TSL:1 ,
Zdhhc9-203	ENSMUST00000123054.8	1388	No protein	Retained intron	-		TSL:1 ,

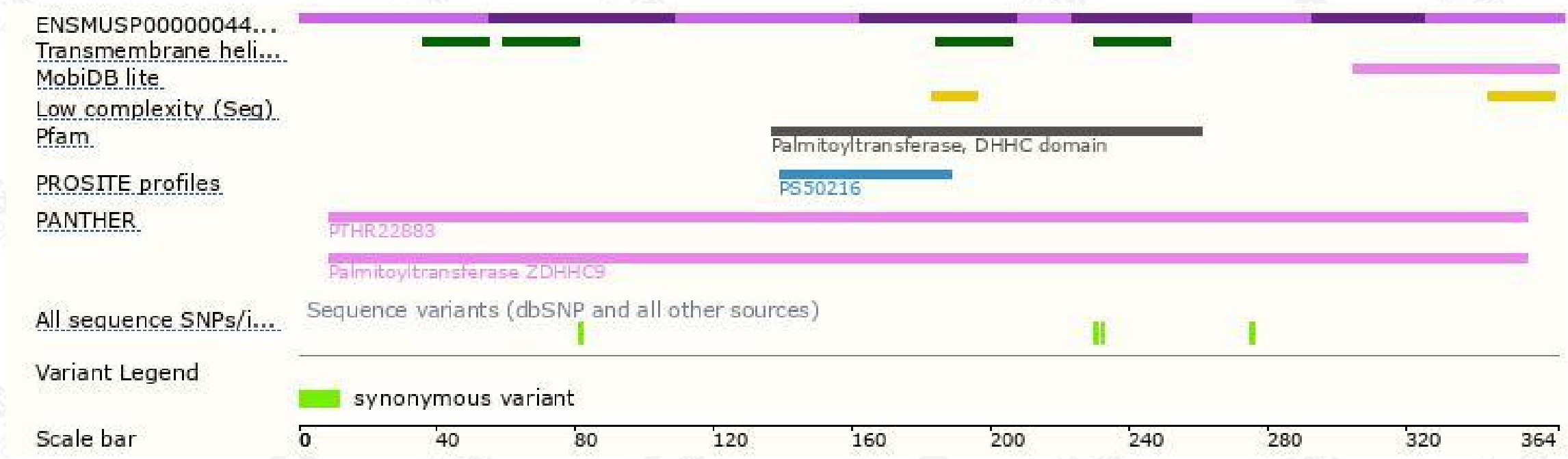
The strategy is based on the design of *Zdhhc9-201* transcript,the transcription is shown below:



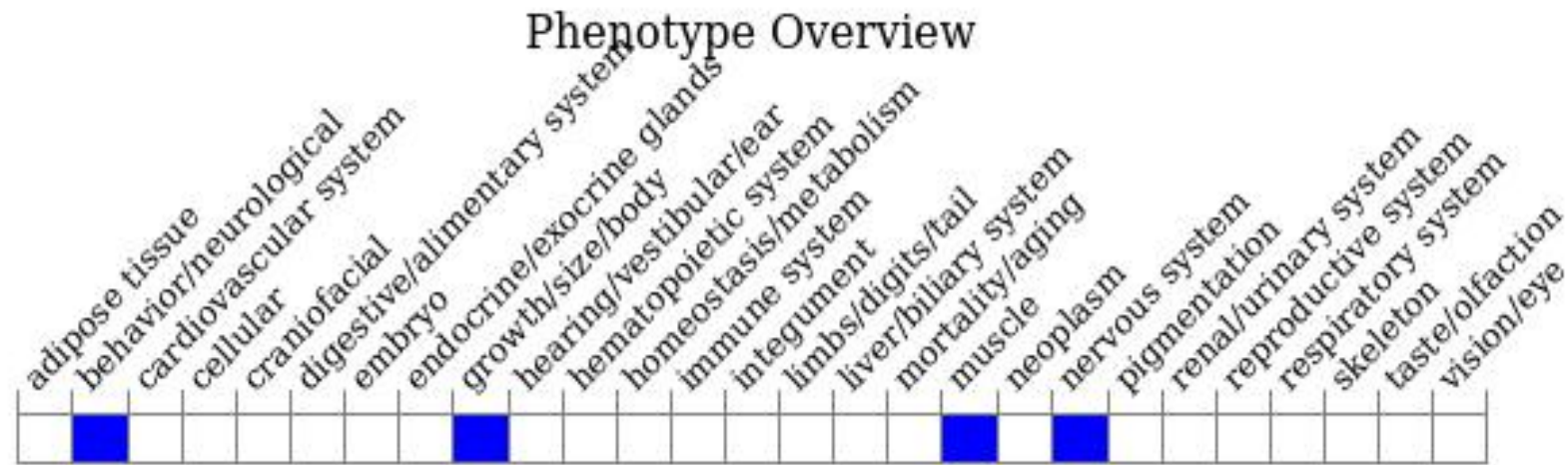
Genomic location distribution



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/>).

According to the existing MGI data, null males exhibit decreased body weight, hypotonia, decreased anxiety, spatial learning deficits, decreased acoustic startle response and decreased corpus callosum volume.

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