

Zdhhc23 Cas9-KO Strategy

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Project Overview

Project Name

Zdhhc23

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zdhhc23* gene. The schematic diagram is as follows:



- The *Zdhhc23* gene has 4 transcripts. According to the structure of *Zdhhc23* gene, exon3-exon5 of *Zdhhc23*-203(ENSMUST00000231700.1) transcript is recommended as the knockout region. The region contains 1135bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zdhhc23* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Zdhhc23* 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 may affect the 3-terminal regulatory function of *Ccdc191* gene.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Zdhhc23 zinc finger, DHHC domain containing 23 [Mus musculus (house mouse)]

Gene ID: 332175, updated on 20-Mar-2020

Summary



Official Symbol	Zdhhc23 provided by MGI
Official Full Name	zinc finger, DHHC domain containing 23 provided by MGI
Primary source	MGI:MGI:2685625
See related	Ensembl:ENSMUSG00000036304
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	DHHC-23, Gm1751, Gm779, nidd
Expression	Broad expression in cortex adult (RPKM 3.6), frontal lobe adult (RPKM 2.7) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

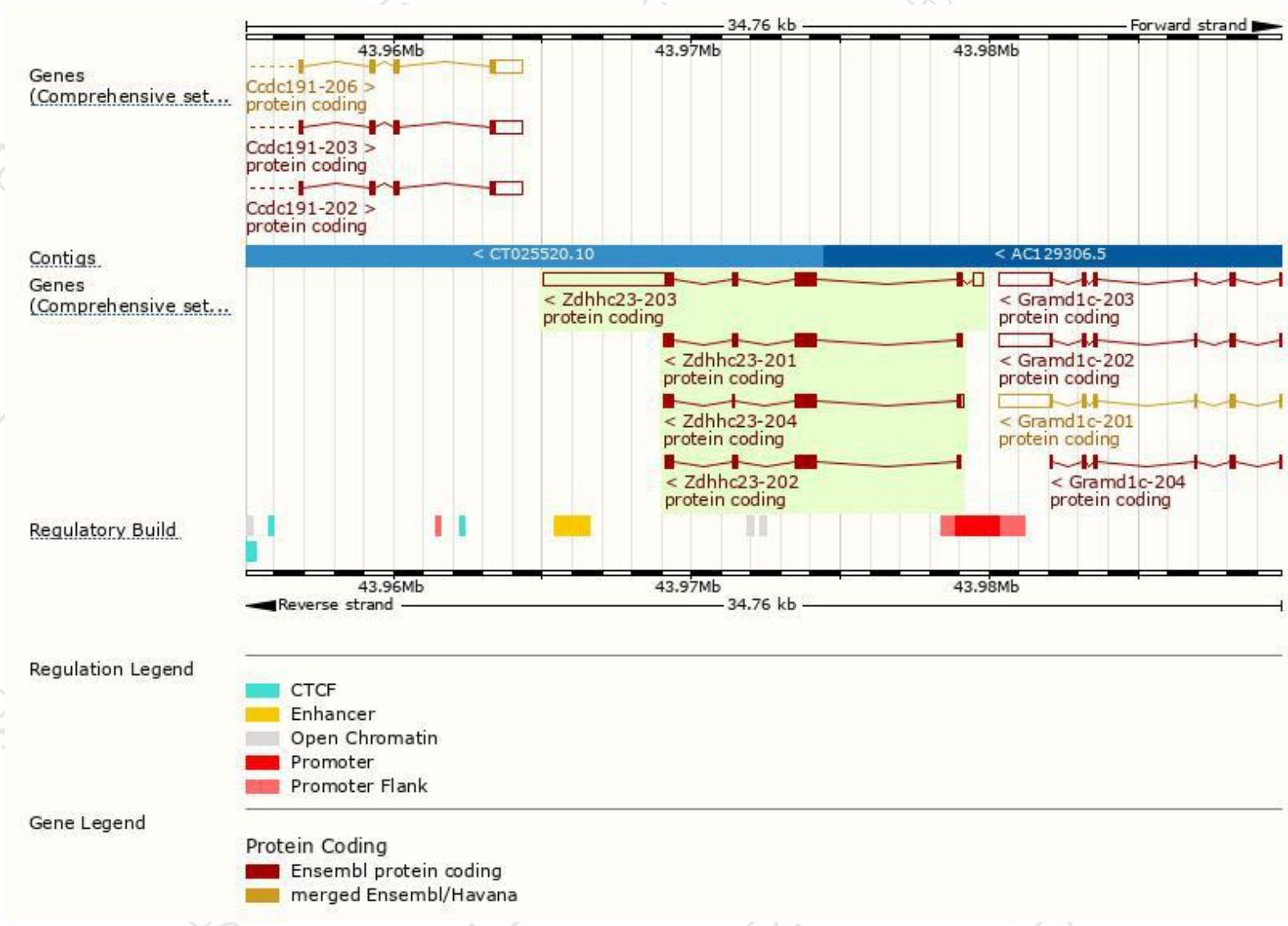
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zdhhc23-203	ENSMUST00000231700.1	5751	425aa	Protein coding	CCDS28180	Q5Y5T3	GENCODE basic APPRIS P1
Zdhhc23-202	ENSMUST00000165648.1	1278	425aa	Protein coding	CCDS28180	Q5Y5T3	TSL:1 GENCODE basic APPRIS P1
Zdhhc23-201	ENSMUST00000036321.13	1380	422aa	Protein coding	-	B7ZNY8	TSL:1 GENCODE basic
Zdhhc23-204	ENSMUST00000232055.1	1347	388aa	Protein coding	-	B7ZNY9	GENCODE basic

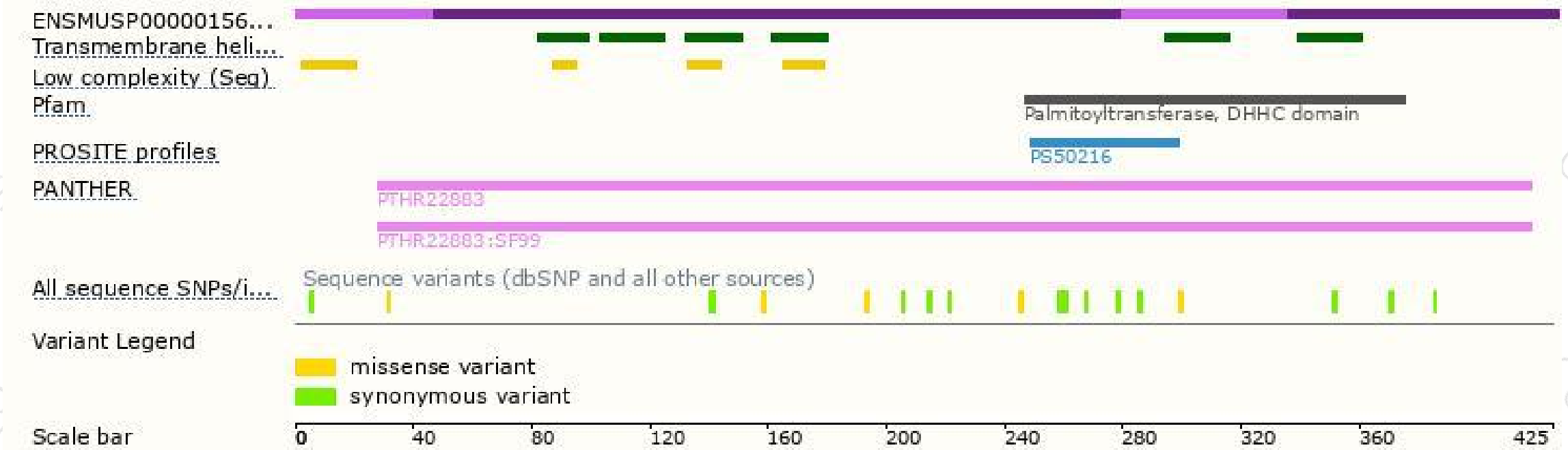
The strategy is based on the design of *Zdhhc23-203* transcript,the transcription is shown below:



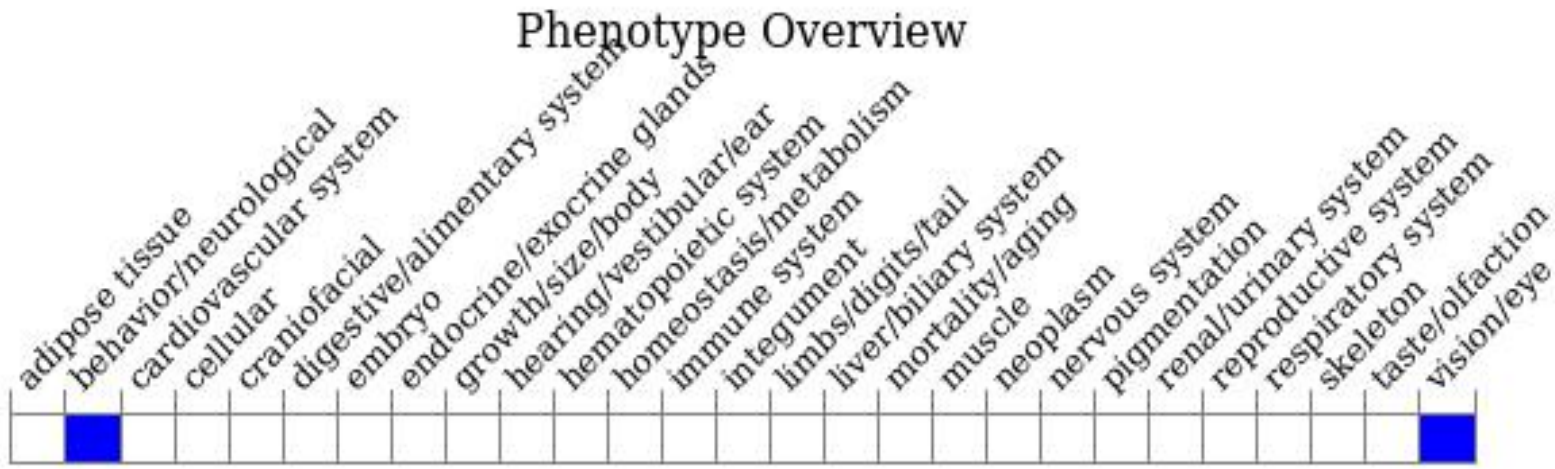
Genomic location distribution



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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