

Zdhhc3 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Zdhhc3

Project type

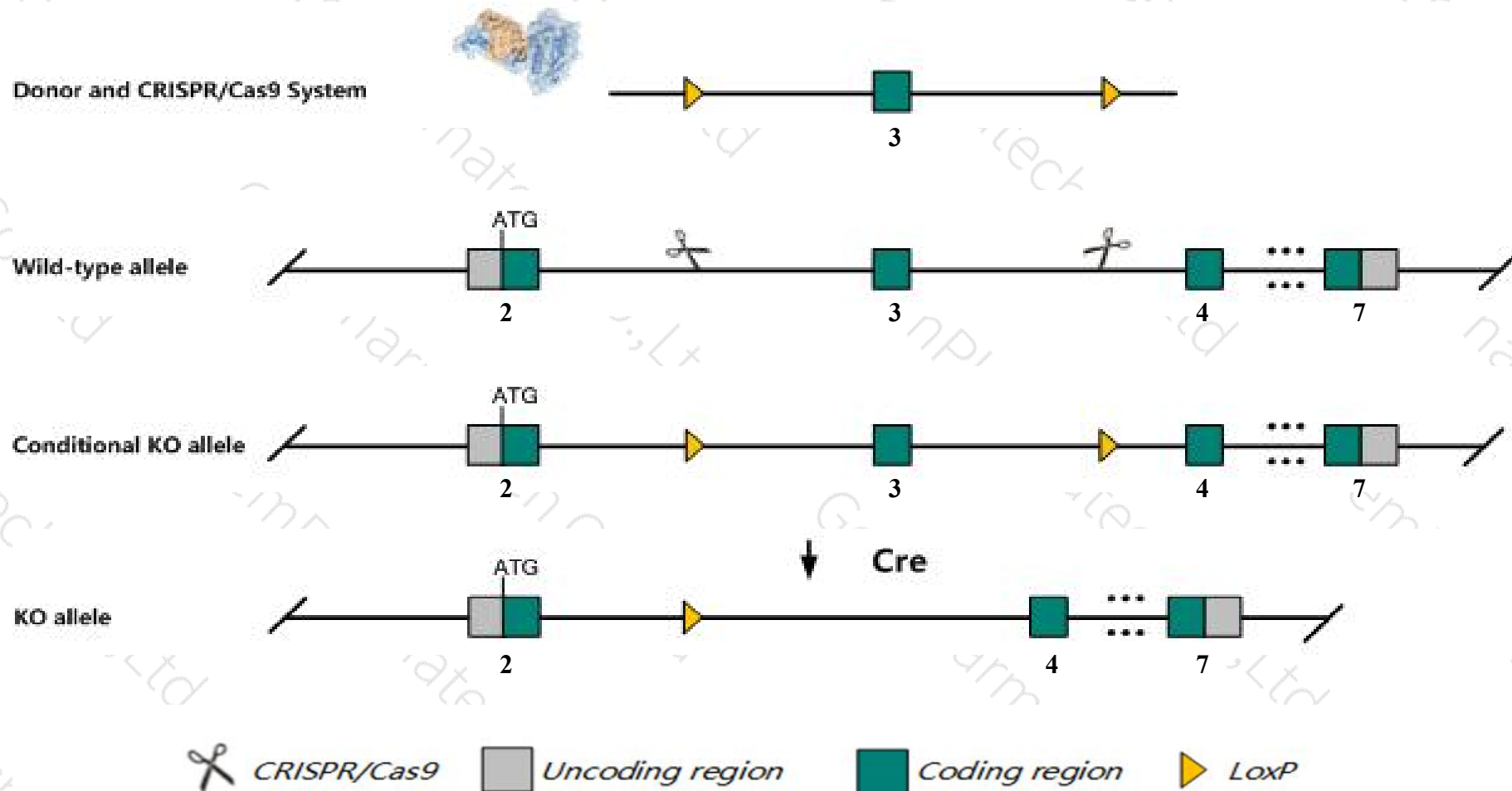
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zdhhc3* gene. The schematic diagram is as follows:



- The *Zdhhc3* gene has 12 transcripts. According to the structure of *Zdhhc3* gene, exon3 of *Zdhhc3*-208 (ENSMUST00000147563.8) transcript is recommended as the knockout region. The region contains 125bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zdhhc3* 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 *Zdhhc3* gene is located on the Chr9. 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.
- Transcript *Zdhhc3-205* may not be affected.
- 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)

Zdhhc3 zinc finger, DHHC domain containing 3 [Mus musculus (house mouse)]

Gene ID: 69035, updated on 31-Jan-2019

Summary



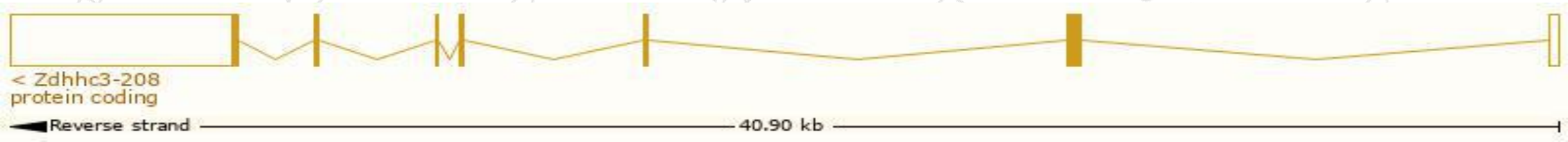
Official Symbol	Zdhhc3 provided by MGI
Official Full Name	zinc finger, DHHC domain containing 3 provided by MGI
Primary source	MGI:MGI:1926134
See related	Ensembl:ENSMUSG00000025786
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	111002O22Rik, 1810006O10Rik, 2210017C02Rik, DHHC-3, GODZ, Gramp1, Zfp373
Expression	Ubiquitous expression in lung adult (RPKM 19.6), ovary adult (RPKM 12.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

The gene has 12 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zdhhc3-208	ENSMUST00000147563.8	6987	299aa	Protein coding	CCDS23654	Q8R173	TSL:1 GENCODE basic APPRIS P1
Zdhhc3-212	ENSMUST00000238520.1	5376	332aa	Protein coding	-	-	GENCODE basic
Zdhhc3-205	ENSMUST00000130717.1	672	83aa	Protein coding	-	D3Z2A6	CDS 3' incomplete TSL:3
Zdhhc3-207	ENSMUST00000140497.7	5380	112aa	Nonsense mediated decay	-	D6RFV6	TSL:1
Zdhhc3-201	ENSMUST00000026892.14	2492	128aa	Nonsense mediated decay	-	D6RHA3	TSL:1
Zdhhc3-206	ENSMUST00000138622.7	1727	122aa	Nonsense mediated decay	-	D6RDS4	TSL:1
Zdhhc3-211	ENSMUST00000155778.7	1633	104aa	Nonsense mediated decay	-	Q05D46	TSL:1
Zdhhc3-209	ENSMUST00000150679.7	906	128aa	Nonsense mediated decay	-	D6RHA3	TSL:5
Zdhhc3-210	ENSMUST00000152396.7	811	154aa	Nonsense mediated decay	-	D6RHS2	TSL:5
Zdhhc3-202	ENSMUST00000123937.1	793	122aa	Nonsense mediated decay	-	D6RDS4	TSL:3
Zdhhc3-204	ENSMUST00000129862.1	600	65aa	Nonsense mediated decay	-	F6Q2M4	CDS 5' incomplete TSL:5
Zdhhc3-203	ENSMUST00000129151.1	2127	No protein	Retained intron	-	-	TSL:1

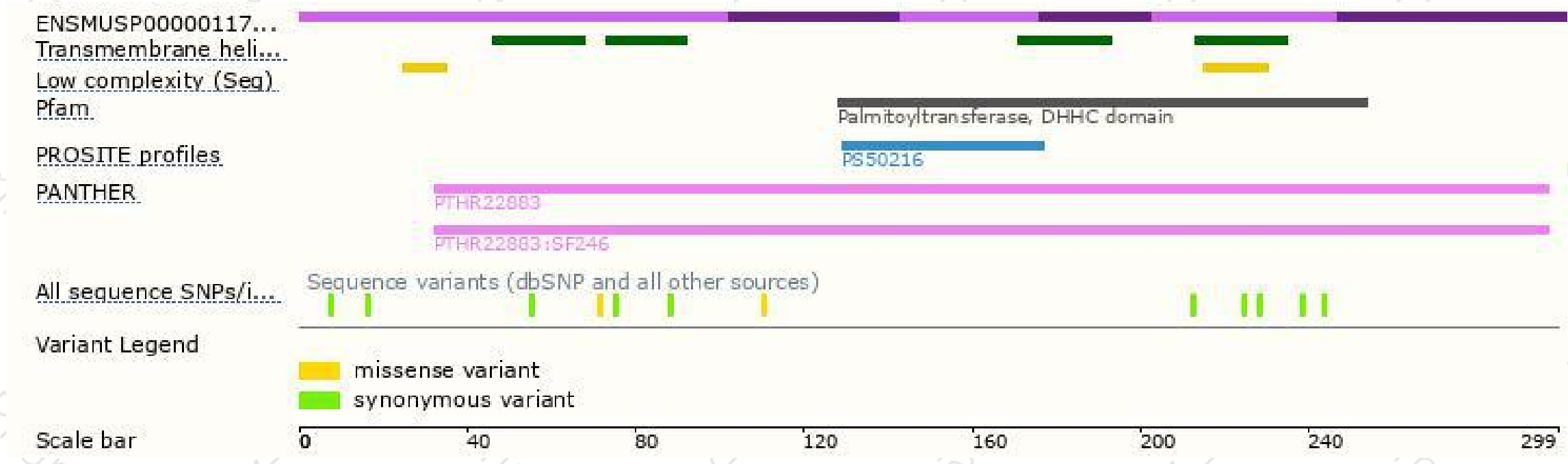
The strategy is based on the design of *Zdhhc3-208* transcript,The transcription is shown below



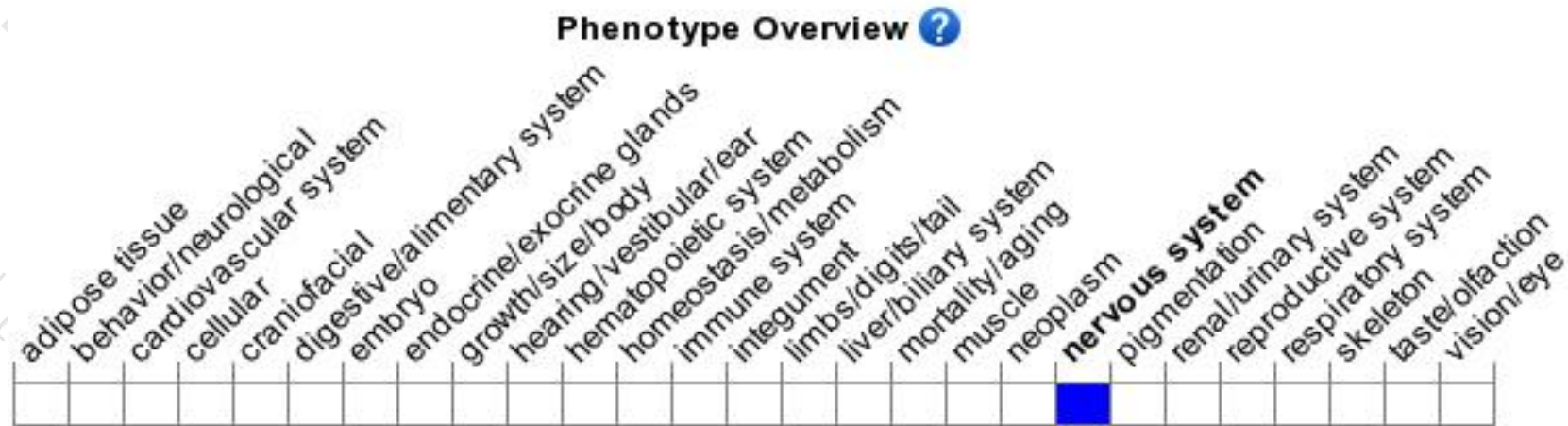
Genomic location distribution



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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