

Ndufb8 Cas9-CKO Strategy

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Project Overview

Project Name

Ndufb8

Project type

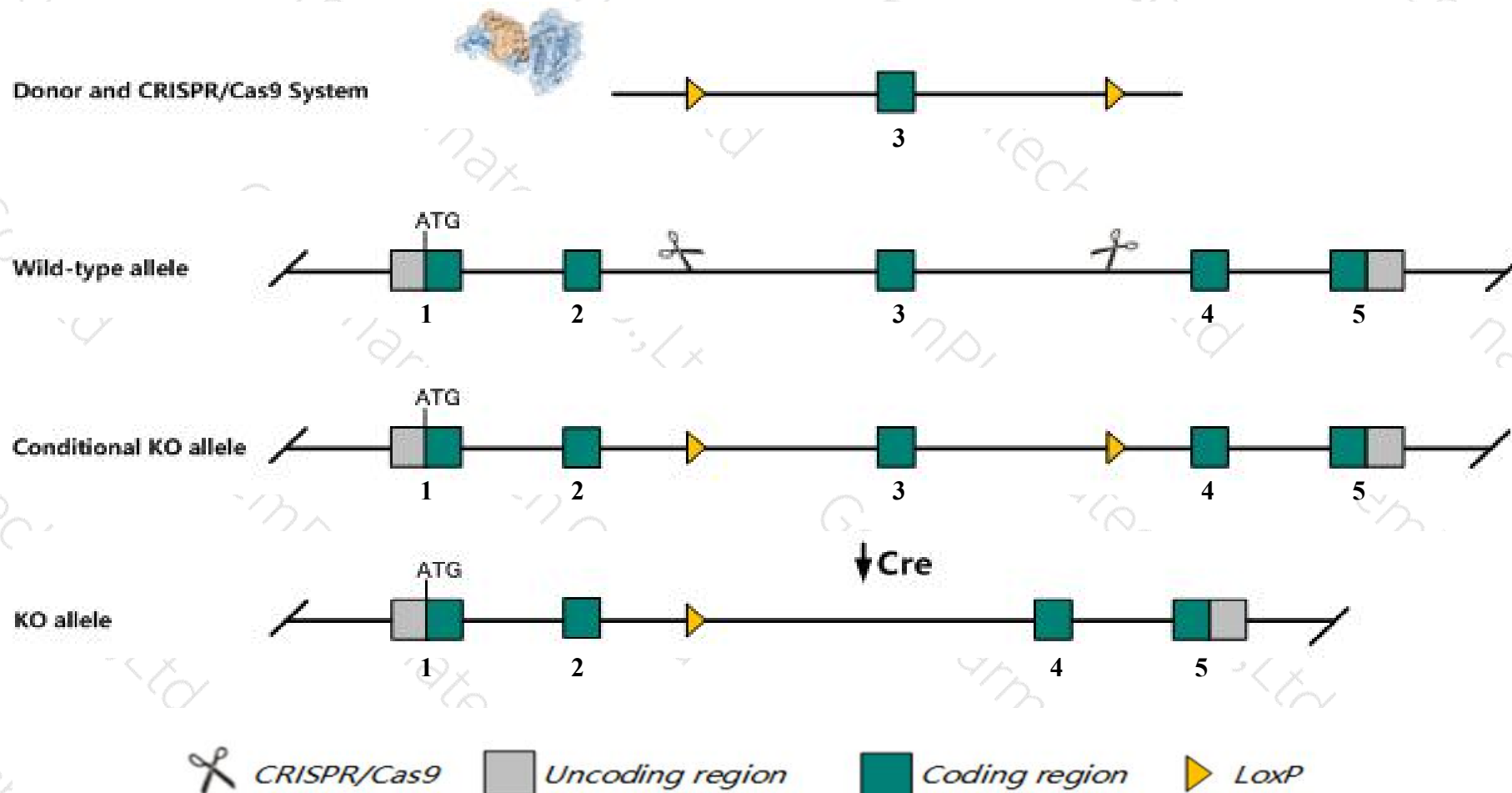
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ndufb8* gene. The schematic diagram is as follows:



- The *Ndufb8* gene has 9 transcripts. According to the structure of *Ndufb8* gene, exon3 of *Ndufb8-209* (ENSMUST00000171415.7) transcript is recommended as the knockout region. The region contains 100bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ndufb8* 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 *Ndufb8* gene is located on the Chr19. 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)

Ndufb8 NADH:ubiquinone oxidoreductase subunit B8 [Mus musculus (house mouse)]

Gene ID: 67264, updated on 31-Jan-2019

Summary



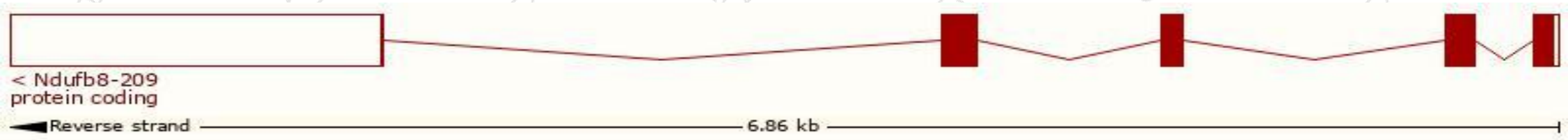
Official Symbol	Ndufb8 provided by MGI
Official Full Name	NADH:ubiquinone oxidoreductase subunit B8 provided by MGI
Primary source	MGI:MGI:1914514
See related	Ensembl:ENSMUSG00000025204
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2900010I05Rik, AI987932, CI-ASHI
Expression	Ubiquitous expression in heart adult (RPKM 237.7), kidney adult (RPKM 174.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

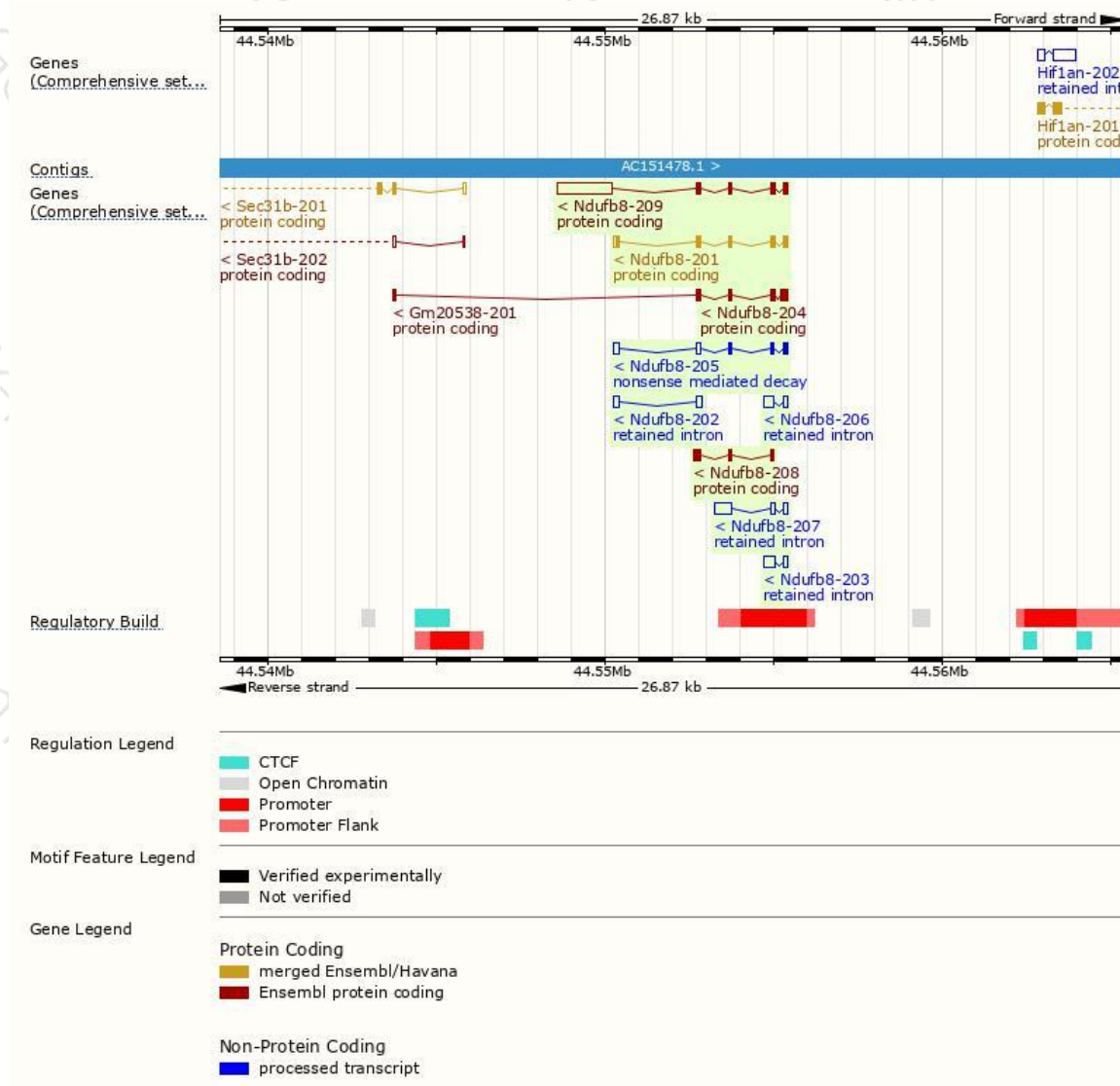
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ndufb8-209	ENSMUST00000171415.7	2142	157aa	Protein coding	CCDS84446	Q3V406	TSL:1 GENCODE basic
Ndufb8-201	ENSMUST00000026222.10	680	186aa	Protein coding	CCDS29851	Q9D6J5	TSL:1 GENCODE basic APPRIS P1
Ndufb8-204	ENSMUST00000167027.1	419	138aa	Protein coding	-	E9Q9J5	CDS 3' incomplete TSL:5
Ndufb8-208	ENSMUST00000169304.7	388	111aa	Protein coding	-	F6VCY0	CDS 5' incomplete TSL:2
Ndufb8-205	ENSMUST00000168083.1	603	84aa	Nonsense mediated decay	-	E9PY23	TSL:3
Ndufb8-207	ENSMUST00000169181.1	710	No protein	Retained intron	-	-	TSL:2
Ndufb8-203	ENSMUST00000166557.1	450	No protein	Retained intron	-	-	TSL:2
Ndufb8-206	ENSMUST00000168474.1	424	No protein	Retained intron	-	-	TSL:3
Ndufb8-202	ENSMUST00000164543.1	341	No protein	Retained intron	-	-	TSL:2

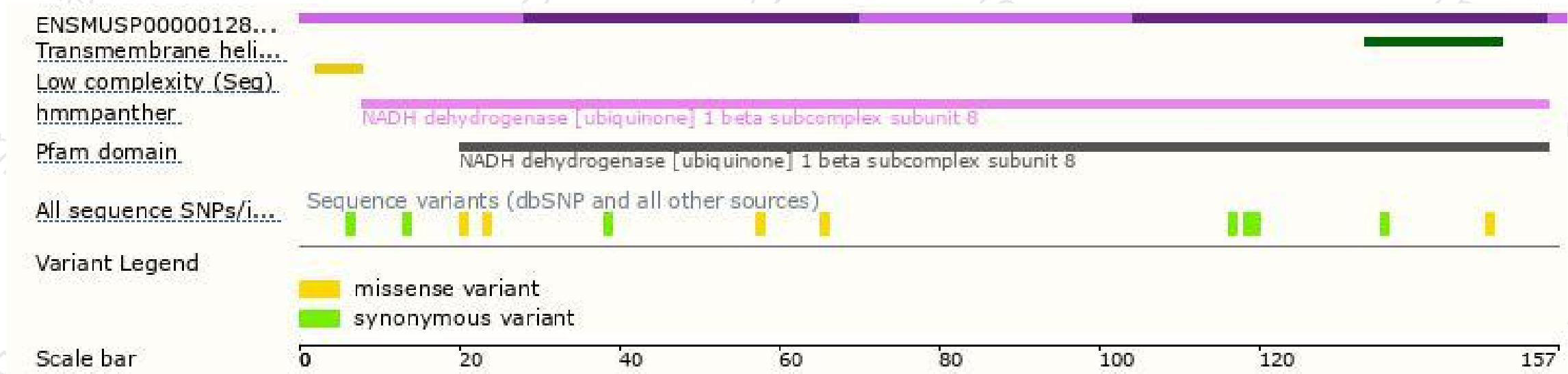
The strategy is based on the design of *Ndufb8-209* transcript,The transcription is shown below



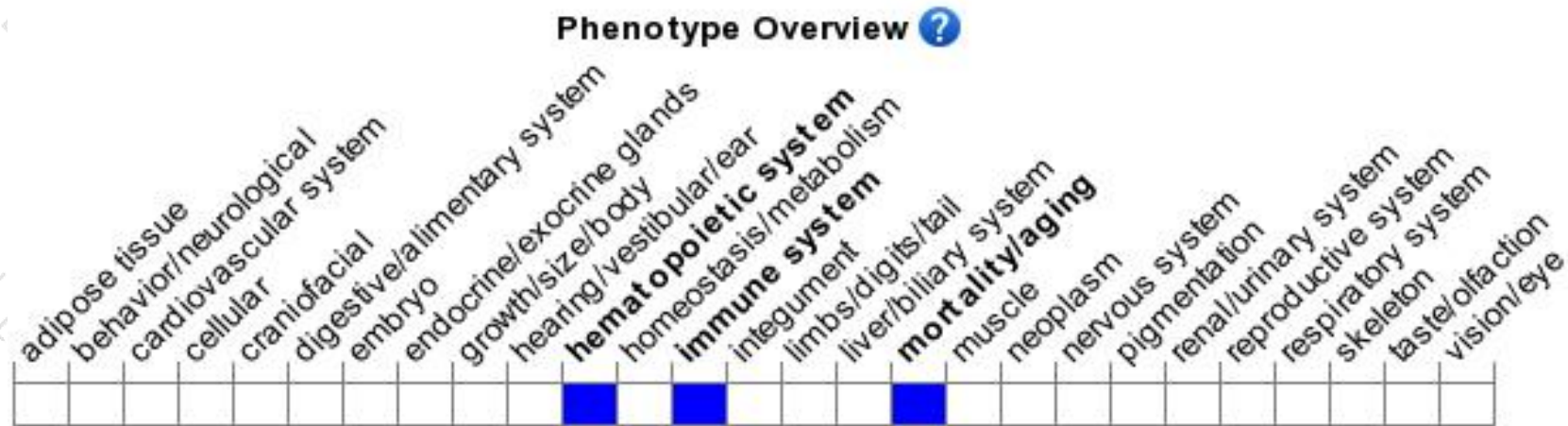
Genomic location distribution



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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