

Ndufb7 Cas9-CKO Strategy

Designer:

Project Overview

Project Name

Ndufb7

Project type

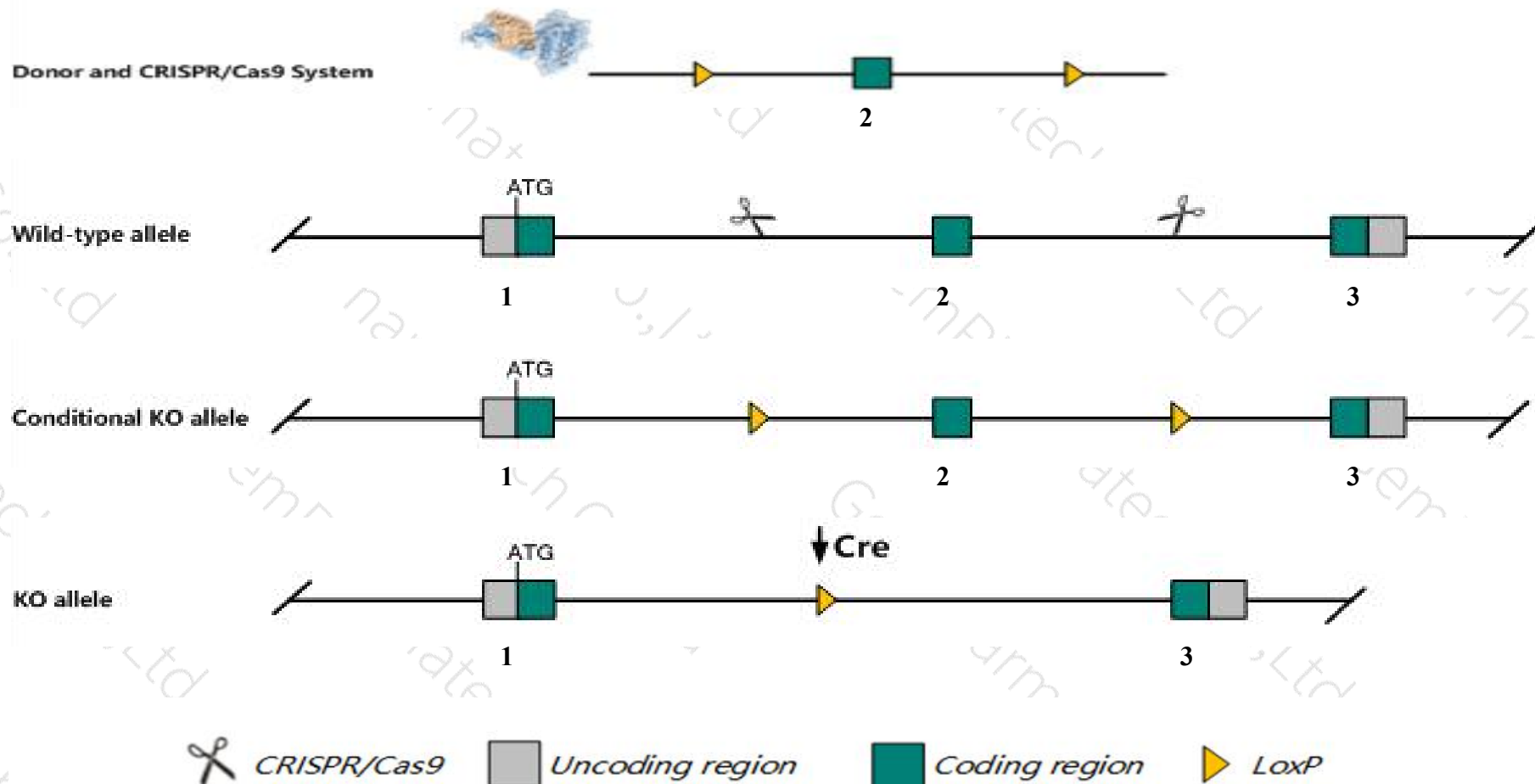
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ndufb7* gene. The schematic diagram is as follows:



- The *Ndufb7* gene has 2 transcripts. According to the structure of *Ndufb7* gene, exon2 of *Ndufb7-201* (ENSMUST00000036996.5) transcript is recommended as the knockout region. The region contains 169bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ndufb7* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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 *Ndufb7* 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information (NCBI)

Ndufb7 NADH:ubiquinone oxidoreductase subunit B7 [Mus musculus (house mouse)]

Gene ID: 66916, updated on 6-Apr-2019

Summary



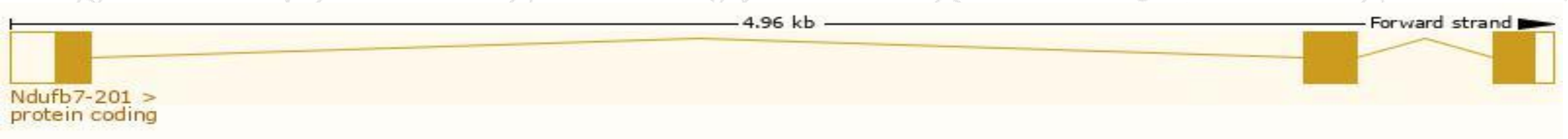
Official Symbol	Ndufb7 provided by MGI
Official Full Name	NADH:ubiquinone oxidoreductase subunit B7 provided by MGI
Primary source	MGI:MGI:1914166
See related	Ensembl:ENSMUSG00000033938
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110002H15Rik
Expression	Ubiquitous expression in heart adult (RPKM 332.5), duodenum adult (RPKM 247.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

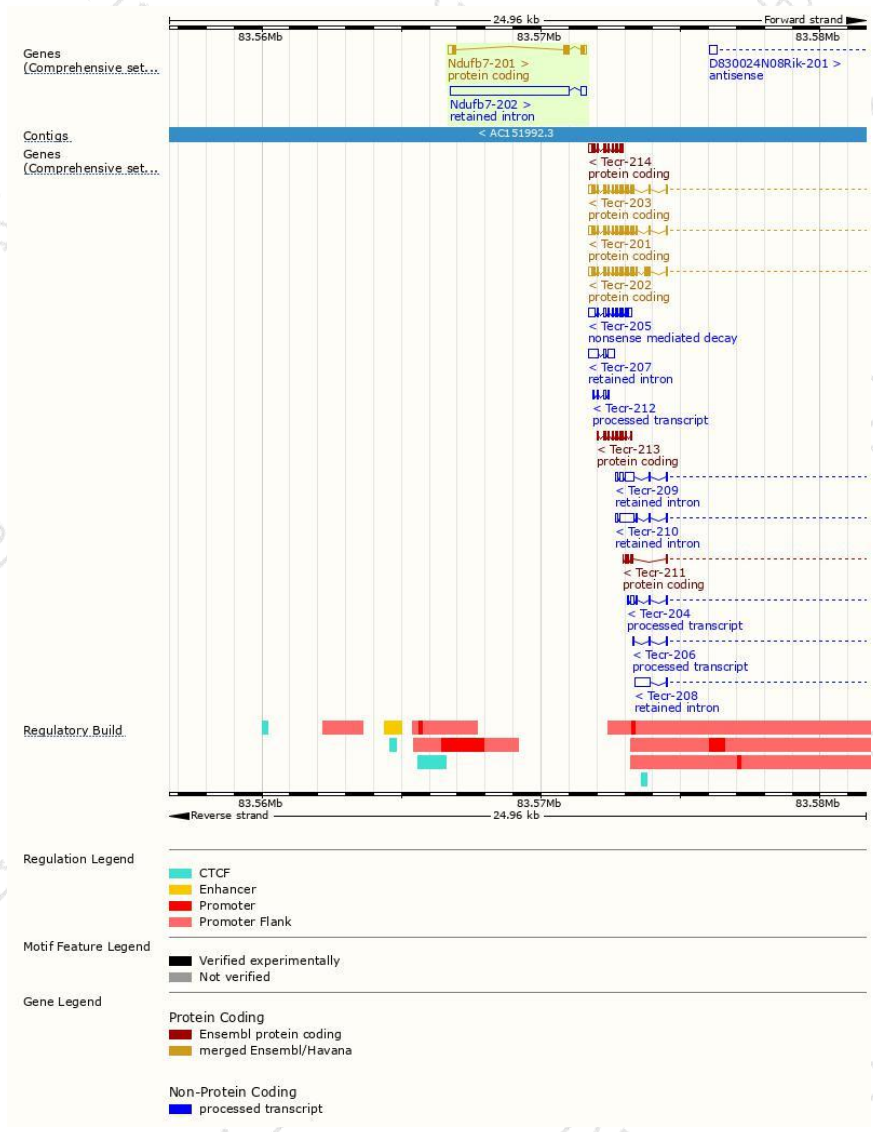
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ndufb7-201	ENSMUST00000036996.5	623	137aa	Protein coding	CCDS22455	Q9CR61	TSL:1 GENCODE basic APPRIS P1
Ndufb7-202	ENSMUST00000127162.1	4435	No protein	Retained intron	-	-	TSL:1

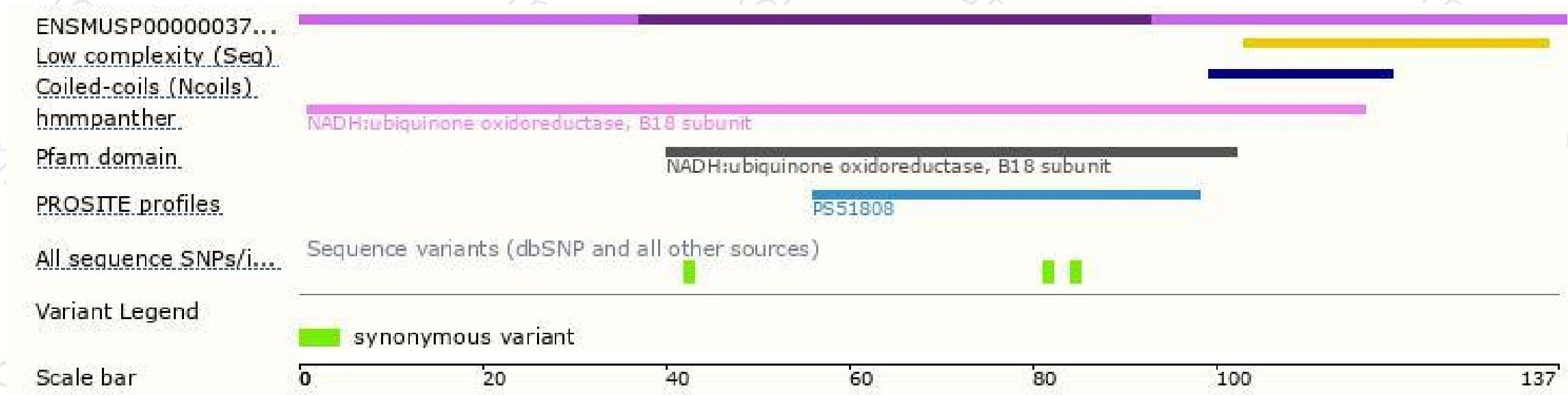
The strategy is based on the design of *Ndufb7-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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