

Ndufb6 Cas9-KO Strategy

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Project Overview

Project Name

Ndufb6

Project type

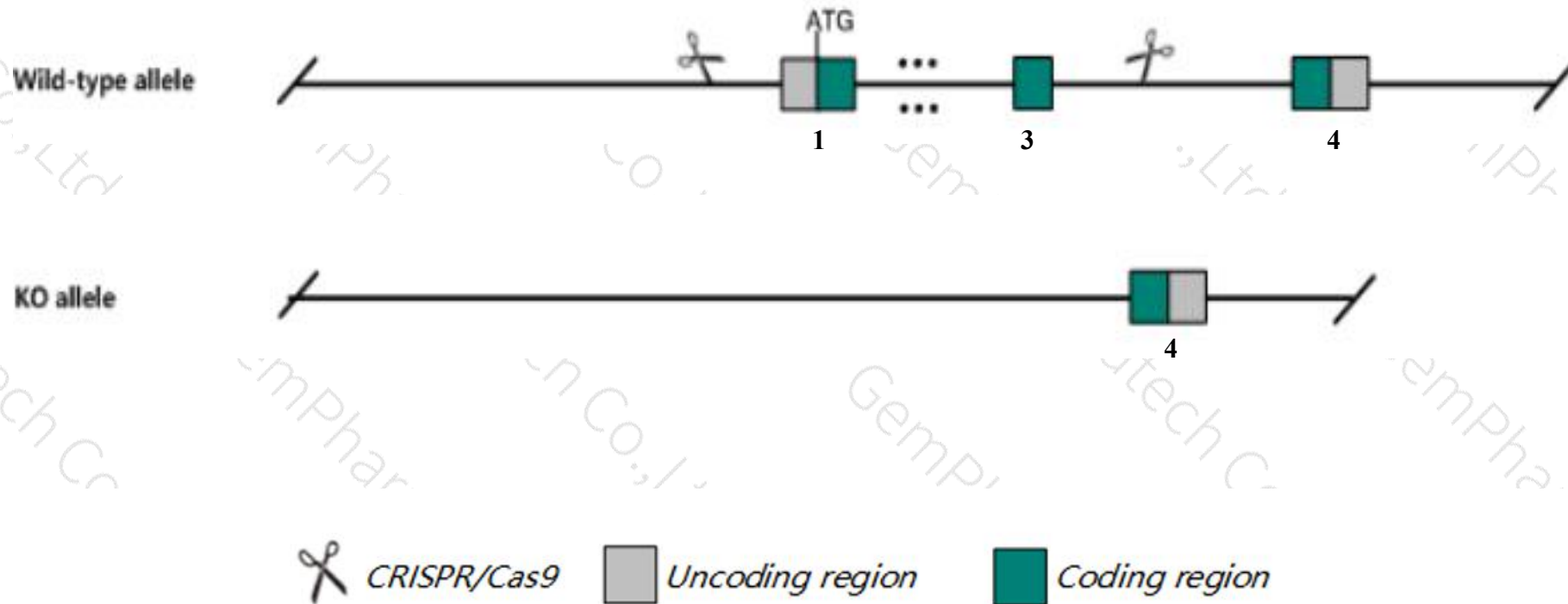
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ndufb6* gene. The schematic diagram is as follows:



- The *Ndufb6* gene has 2 transcripts. According to the structure of *Ndufb6* gene, exon1-exon3 of *Ndufb6-201* (ENSMUST00000095128.9) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ndufb6* gene. The brief process is as follows: CRISPR/Cas9 system

- The knockout region is near to the N-terminal of *Topors* gene and C-terminal of *Smim27* gene, this strategy may influence the regulatory function of the N-terminal of *Topors* gene and C-terminal of *Smim27* gene.
- The *Ndufb6* gene is located on the Chr4. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Ndufb6 NADH:ubiquinone oxidoreductase subunit B6 [Mus musculus (house mouse)]

Gene ID: 230075, updated on 26-Mar-2020

Summary



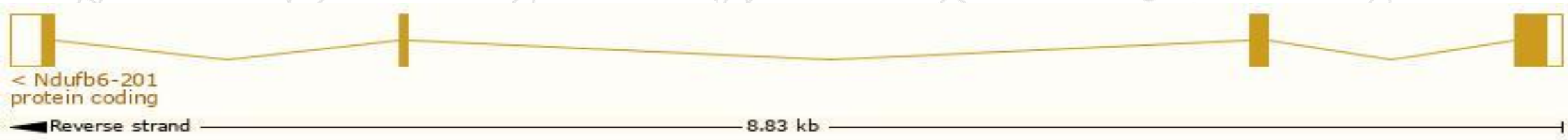
Official Symbol	Ndufb6 provided by MGI
Official Full Name	NADH:ubiquinone oxidoreductase subunit B6 provided by MGI
Primary source	MGI:MGI:2684983
See related	Ensembl:ENSMUSG00000071014
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CI-B17, Gm137
Summary	This gene encodes a subunit of complex I (NADH:ubiquinone oxidoreductase) of the mitochondrial respiratory chain. This complex functions in electron transport and generation of a proton gradient across the inner mitochondrial membrane to drive ATP synthesis. Data from human cell lines suggests that the encoded subunit may be required for electron transfer activity. [provided by RefSeq, Aug 2015]
Expression	Ubiquitous expression in heart adult (RPKM 89.9), kidney adult (RPKM 75.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

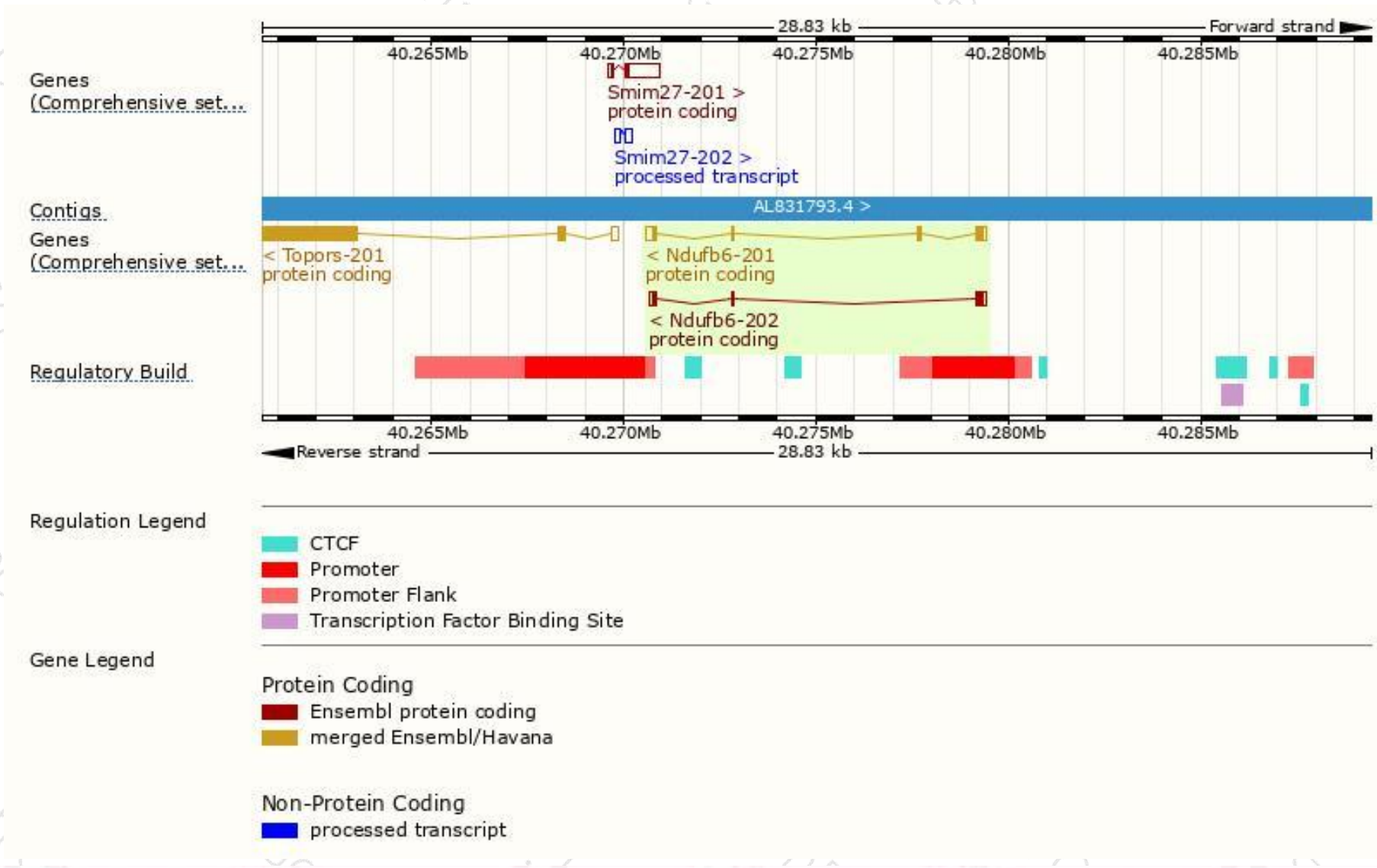
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ndufb6-201	ENSMUST00000095128.9	659	128aa	Protein coding	CCDS18045	A2AP31 Q3UIU2	TSL:1 GENCODE basic APPRIS P1
Ndufb6-202	ENSMUST00000108108.2	480	97aa	Protein coding	-	A2AP32	TSL:3 GENCODE basic

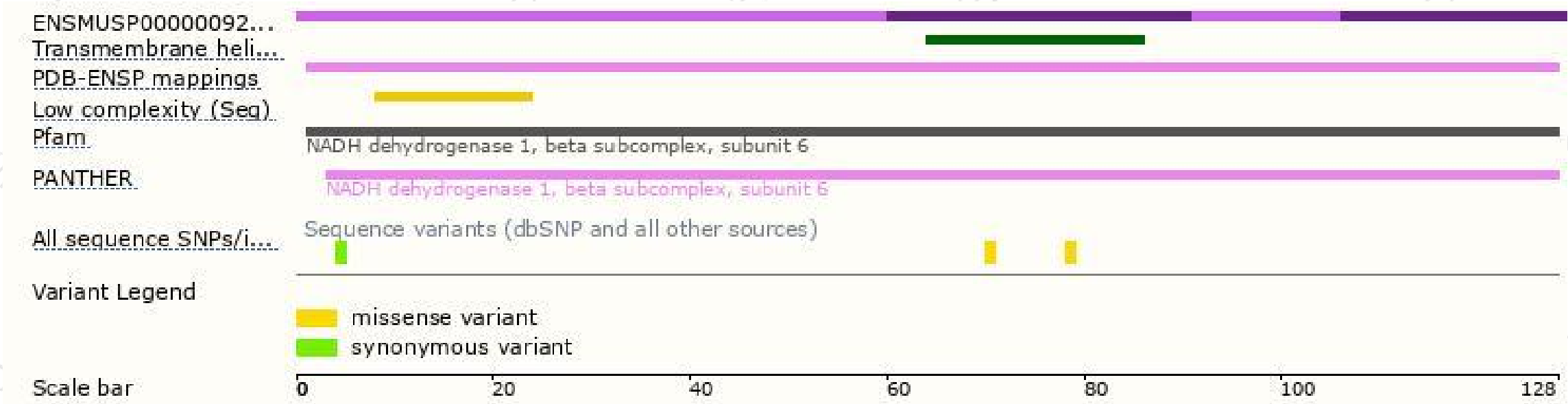
The strategy is based on the design of *Ndufb6-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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