

Ndufa10 Cas9-KO Strategy

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Project Overview

Project Name

Ndufa10

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ndufa10* gene. The schematic diagram is as follows:



- The *Ndufa10* gene has 8 transcripts. According to the structure of *Ndufa10* gene, exon2-exon4 of *Ndufa10-201* (ENSMUST00000027478.6) transcript is recommended as the knockout region. The region contains 472bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ndufa10* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Ndufa10* gene is located on the Chr1. 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)

Ndufa10 NADH:ubiquinone oxidoreductase subunit A10 [Mus musculus (house mouse)]

Gene ID: 67273, updated on 7-Apr-2019

Summary



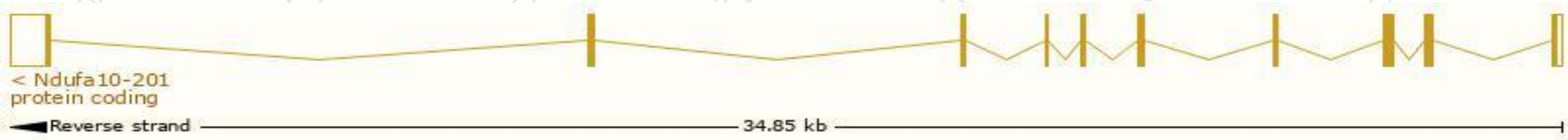
Official Symbol	Ndufa10 provided by MGI
Official Full Name	NADH:ubiquinone oxidoreductase subunit A10 provided by MGI
Primary source	MGI:MGI:1914523
See related	Ensembl:ENSMUSG00000026260
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2900053E13Rik
Expression	Ubiquitous expression in heart adult (RPKM 211.8), kidney adult (RPKM 101.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

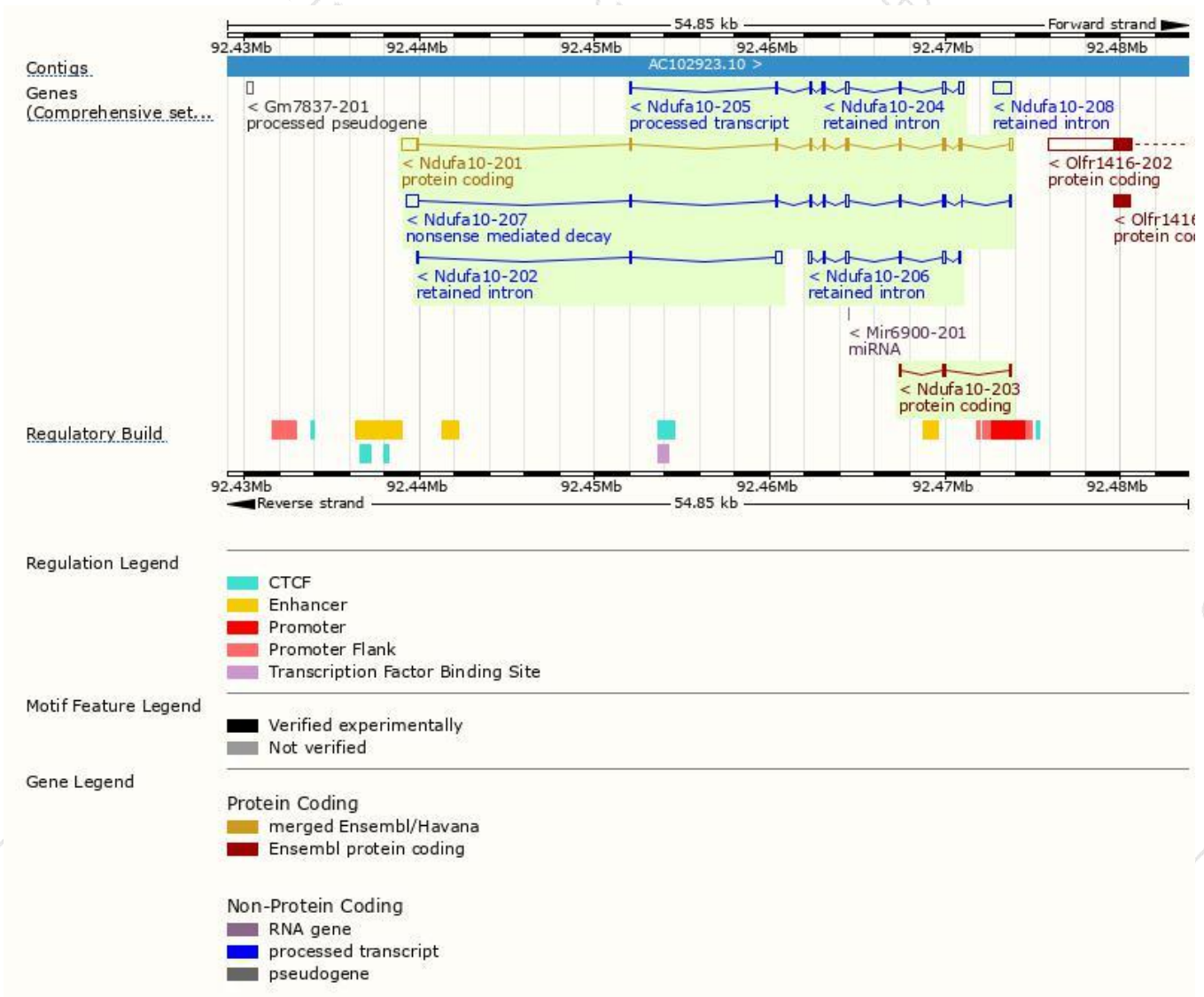
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ndufa10-201	ENSMUST00000027478.6	2020	355aa	Protein coding	CCDS15167	Q99LC3	TSL:1 GENCODE basic APPRIS P1
Ndufa10-203	ENSMUST00000185251.1	354	89aa	Protein coding	-	A0A087WR38	CDS 3' incomplete TSL:3
Ndufa10-207	ENSMUST00000189503.6	1514	63aa	Nonsense mediated decay	-	A0A087WRD4	TSL:5
Ndufa10-205	ENSMUST00000187098.1	248	No protein	Processed transcript	-	-	TSL:5
Ndufa10-208	ENSMUST00000189582.1	989	No protein	Retained intron	-	-	TSL:NA
Ndufa10-204	ENSMUST00000185466.1	715	No protein	Retained intron	-	-	TSL:3
Ndufa10-206	ENSMUST00000187141.6	675	No protein	Retained intron	-	-	TSL:2
Ndufa10-202	ENSMUST00000153897.1	513	No protein	Retained intron	-	-	TSL:2

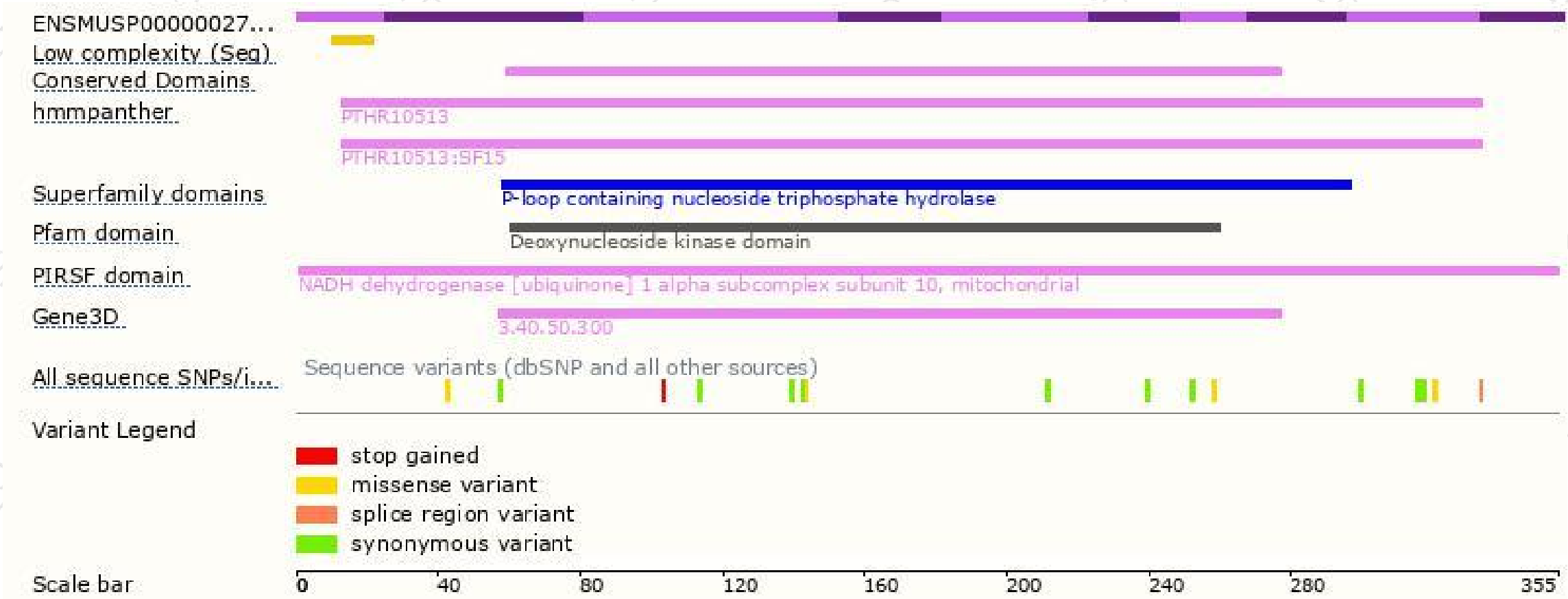
The strategy is based on the design of *Ndufa10-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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