

Ndc80 Cas9-KO Strategy

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Project Overview

Project Name

Ndc80

Project type

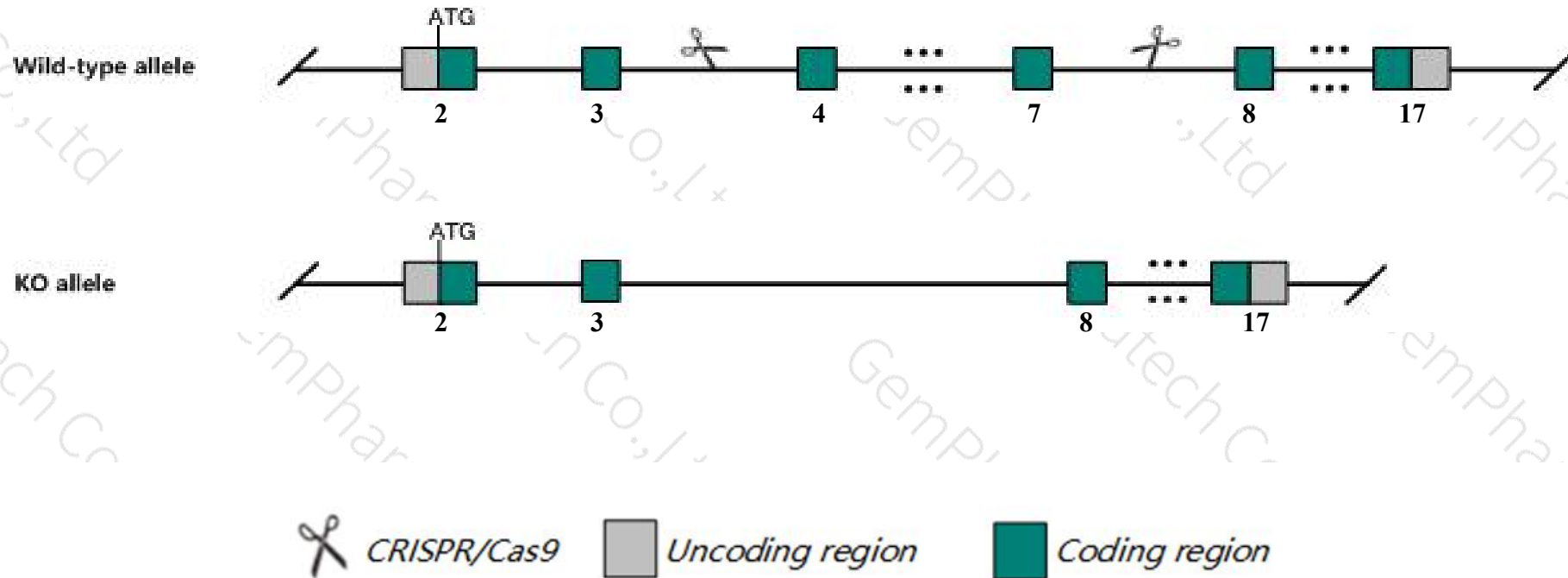
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ndc80* gene. The schematic diagram is as follows:



- The *Ndc80* gene has 5 transcripts. According to the structure of *Ndc80* gene, exon4-exon7 of *Ndc80-201* (ENSMUST00000024851.9) transcript is recommended as the knockout region. The region contains 490bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ndc80* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Ndc80* gene is located on the Chr17. 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)

Ndc80 NDC80 kinetochore complex component [Mus musculus (house mouse)]

Gene ID: 67052, updated on 31-Jan-2019

Summary



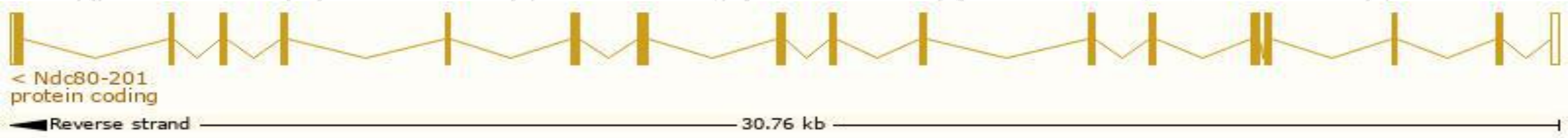
Official Symbol	Ndc80 provided by MGI
Official Full Name	NDC80 kinetochore complex component provided by MGI
Primary source	MGI:MGI:1914302
See related	Ensembl:ENSMUSG00000024056
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610020P18Rik, AV139730, HEC, HEC1, Kntc2
Expression	Biased expression in CNS E11.5 (RPKM 11.9), liver E14 (RPKM 11.3) and 9 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

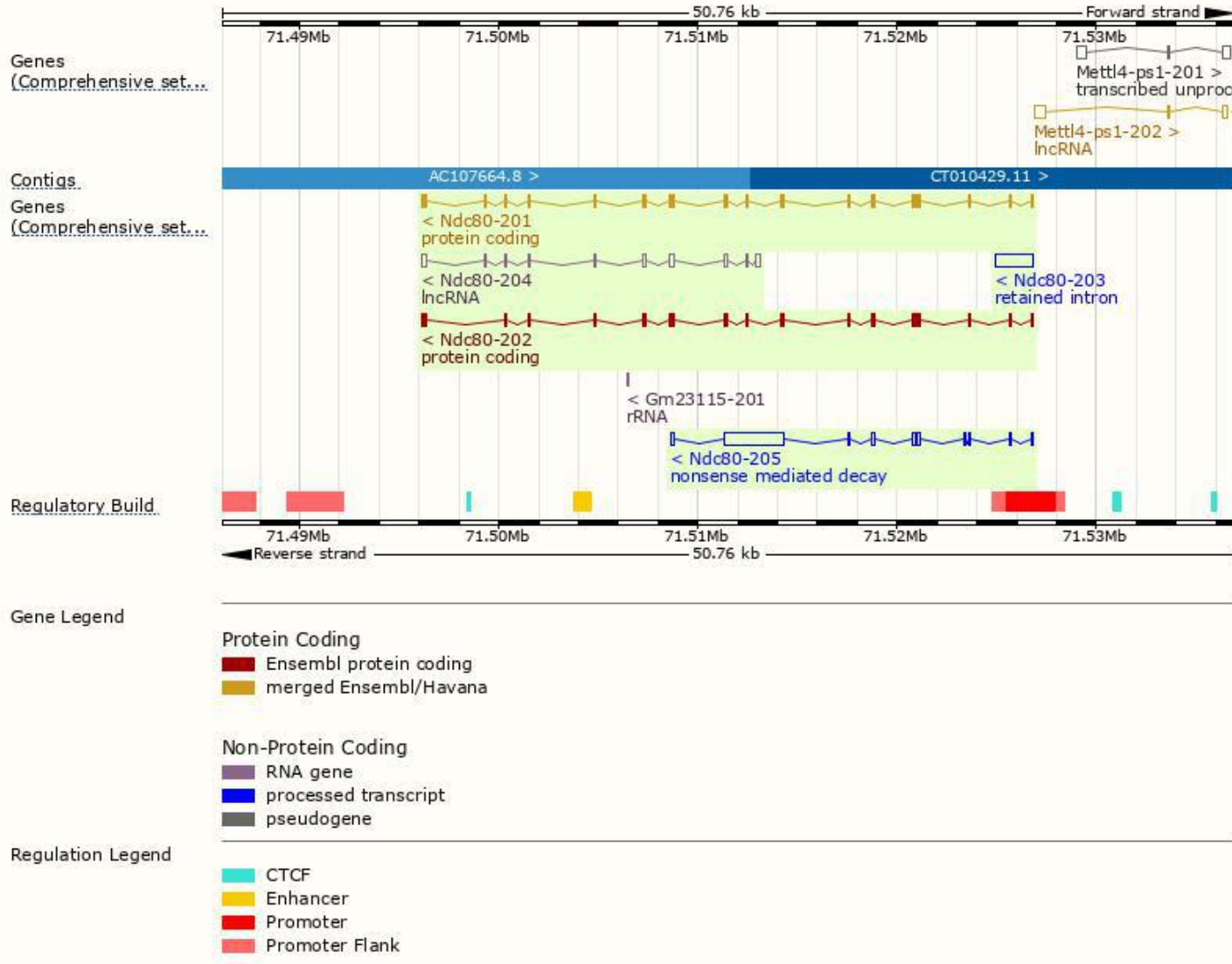
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ndc80-201	ENSMUST00000024851.9	2201	642aa	Protein coding	CCDS28959	Q9D0F1	TSL:1 GENCODE basic APPRIS P1
Ndc80-202	ENSMUST00000232863.1	2009	629aa	Protein coding	-	A0A3B2WAS6	GENCODE basic
Ndc80-205	ENSMUST00000233750.1	3847	60aa	Nonsense mediated decay	-	A0A3B2WDB5	
Ndc80-203	ENSMUST00000233011.1	1852	No protein	Retained intron	-	-	
Ndc80-204	ENSMUST00000233552.1	1454	No protein	lncRNA	-	-	

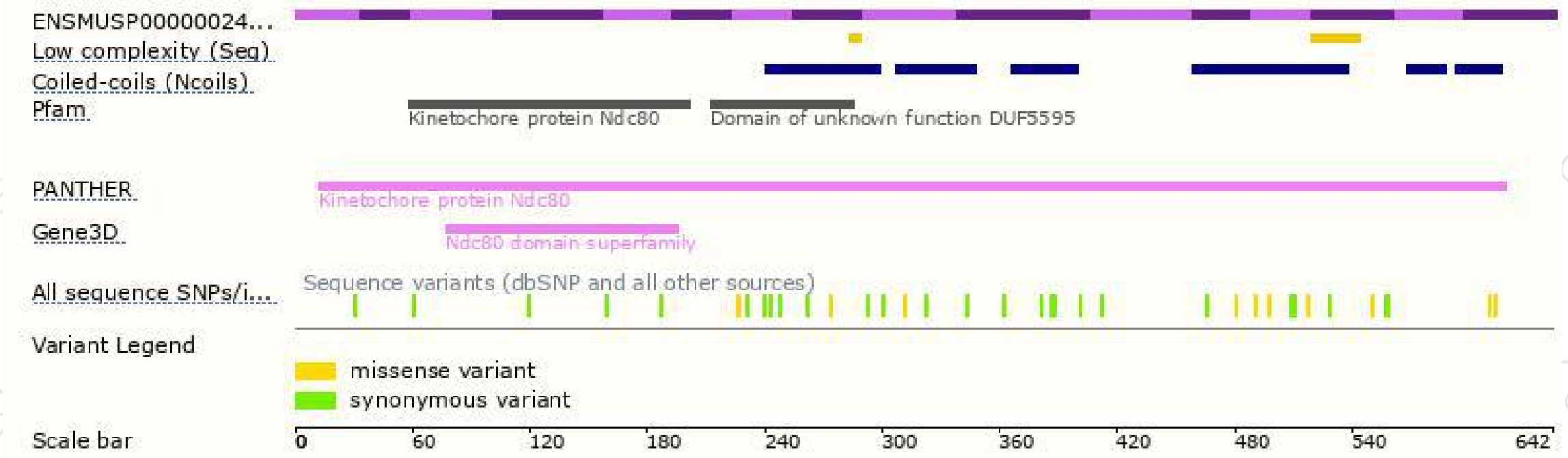
The strategy is based on the design of *Ndc80-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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