

Nwd1 Cas9-KO Strategy

Designer: Yanhua Shen

Project Overview

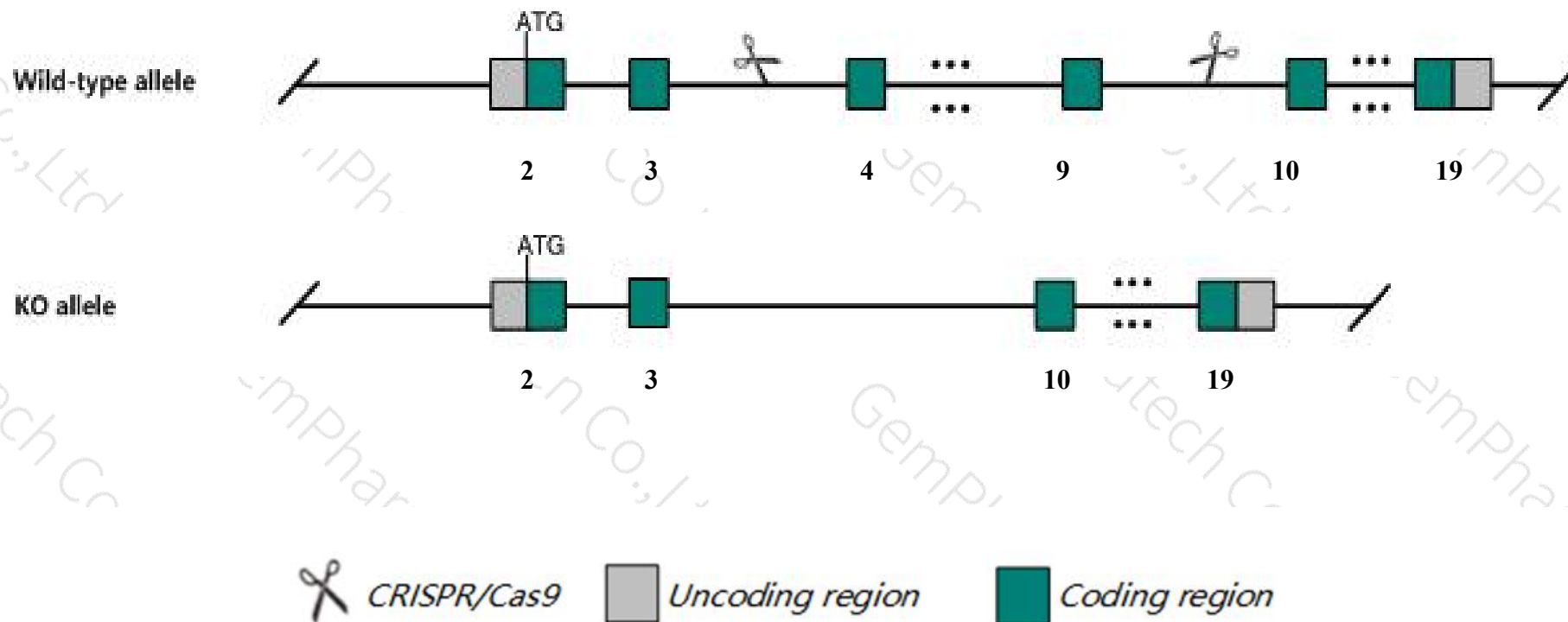
Project Name	Nwd1
---------------------	-------------

Project type	Cas9-KO
---------------------	----------------

Animal background	C57BL/6JGpt
--------------------------	--------------------

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the Nwd1 gene. The schematic diagram is as follows:



Technical routes

- The Nwd1 gene has 9 transcripts. According to the structure of Nwd1 gene, exon4-exon9 of Nwd1-204 transcript is recommended as the knockout region. The region contains 2209bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify Nwd1 gene. The brief process is as follows: CRISPR/Cas9 system 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.

Notice

- Transcript Nwd1-207 may not be affected.
- The Nwd1 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)

Nwd1 NACHT and WD repeat domain containing 1 [Mus musculus (house mouse)]

Gene ID: 319555, updated on 31-Jan-2019

Summary

Official Symbol Nwd1 provided by [MGI](#)

Official Full Name NACHT and WD repeat domain containing 1 provided by [MGI](#)

Primary source [MGI:MGI:2442268](#)

See related [Ensembl:ENSMUSG00000048148](#)

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 A230063L24Rik

Expression Biased expression in thymus adult (RPKM 6.0), frontal lobe adult (RPKM 5.5) and 8 other tissues [See more](#)

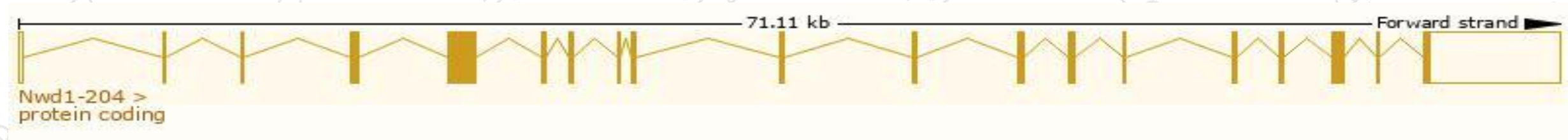
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

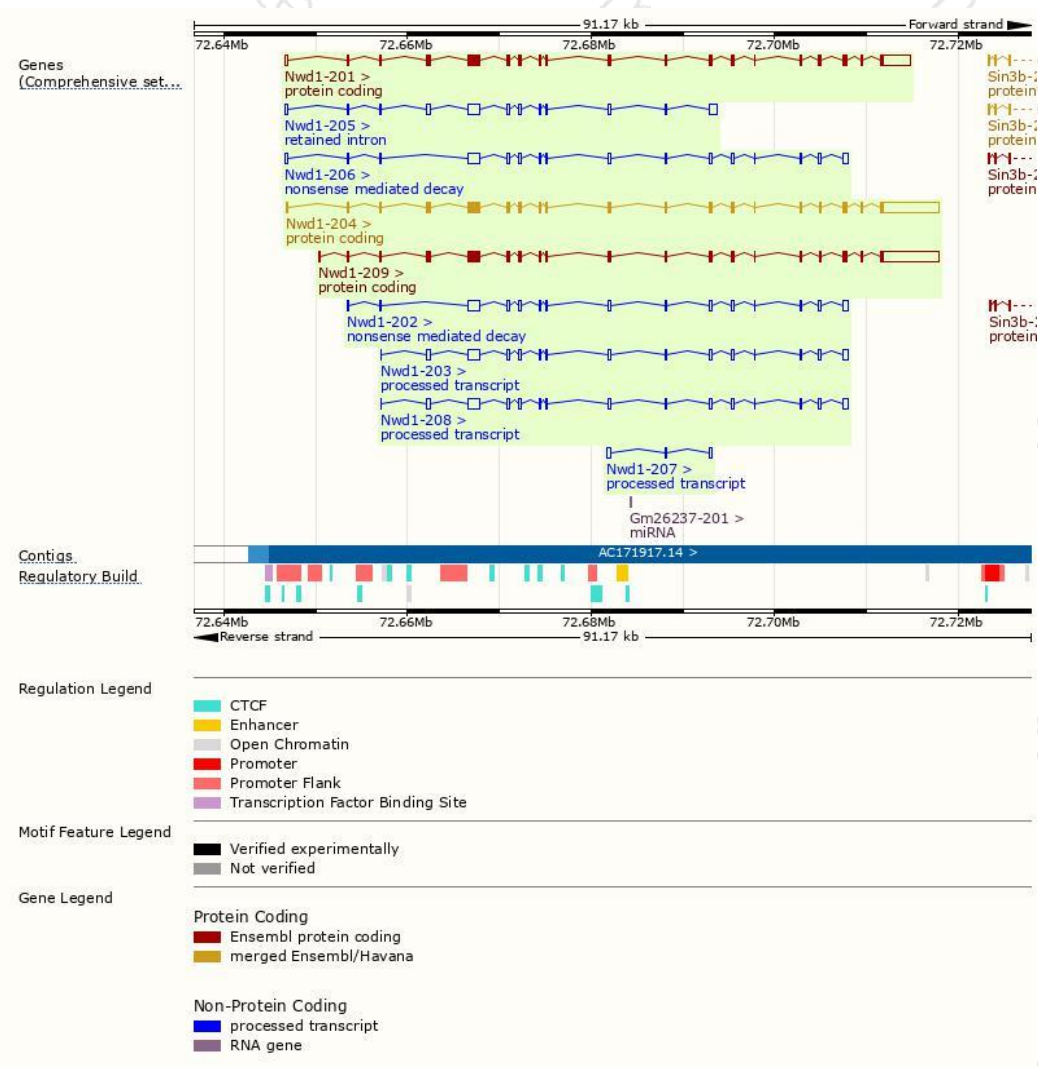
The gene has 9 transcripts, and all transcripts are shown below :

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nwd1-204	ENSMUST00000161254.8	10792	1521aa	Protein coding	CCDS22418	E0CX99	TSL:1 GENCODE basic
Nwd1-209	ENSMUST00000228312.1	10789	1562aa	Protein coding	-	A0A2I3BR96	GENCODE basic APPRIS P1
Nwd1-201	ENSMUST00000093427.10	7840	1563aa	Protein coding	-	A6H603	TSL:5 GENCODE basic
Nwd1-206	ENSMUST00000161557.7	4301	77aa	Nonsense mediated decay	-	E0CY71	TSL:1
Nwd1-202	ENSMUST00000160443.7	4126	77aa	Nonsense mediated decay	-	E0CY71	TSL:5
Nwd1-208	ENSMUST00000163026.7	4274	No protein	Processed transcript	-	-	TSL:1
Nwd1-203	ENSMUST00000160912.1	4231	No protein	Processed transcript	-	-	TSL:1
Nwd1-207	ENSMUST00000162248.1	645	No protein	Processed transcript	-	-	TSL:3
Nwd1-205	ENSMUST00000161386.7	3826	No protein	Retained intron	-	-	TSL:1

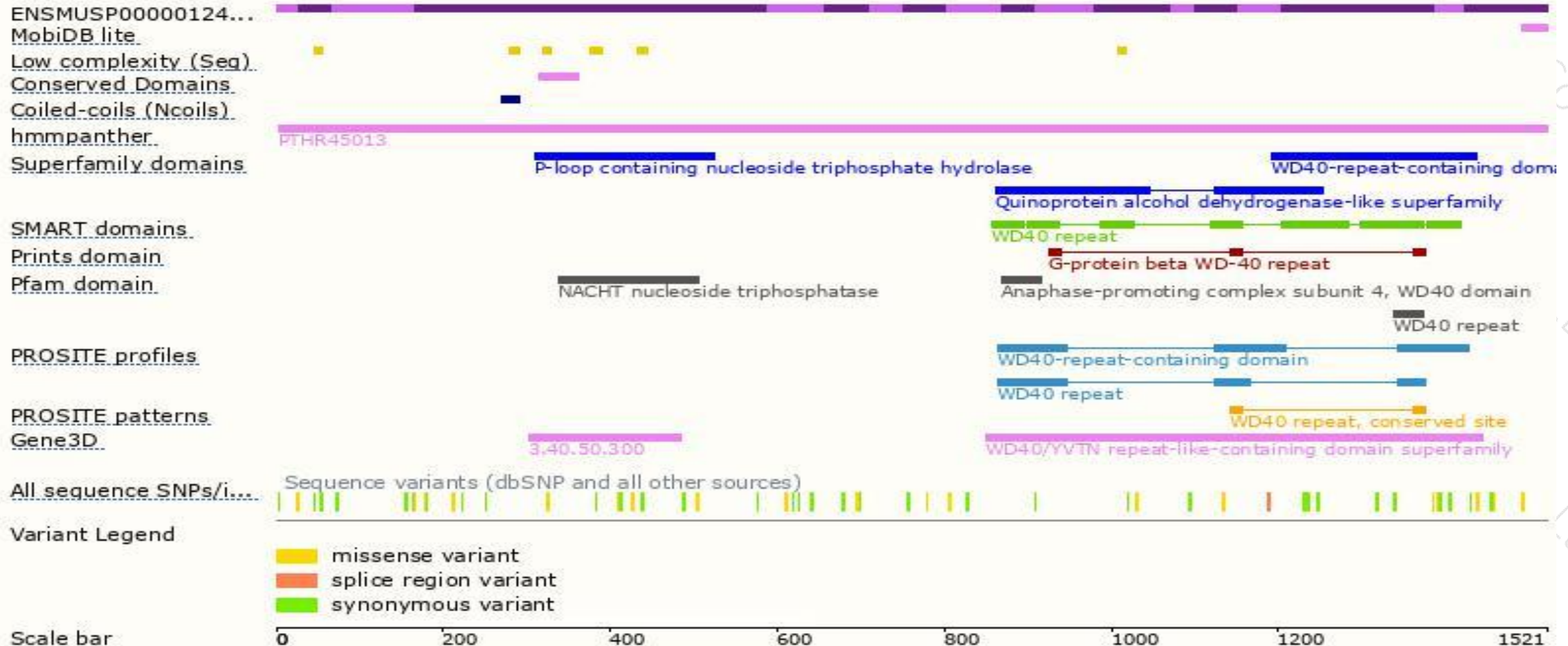
The strategy is based on the design of Nwd1-204 transcript,The transcription is shown below



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.
Tel: 400-9660890

