

Wdr43 Cas9-KO Strategy

Designer: Miaomiao Cui

Reviewer: Lingyan Wu

Design Date: 2021-9-18

Project Overview

Project Name

Wdr43

Project type

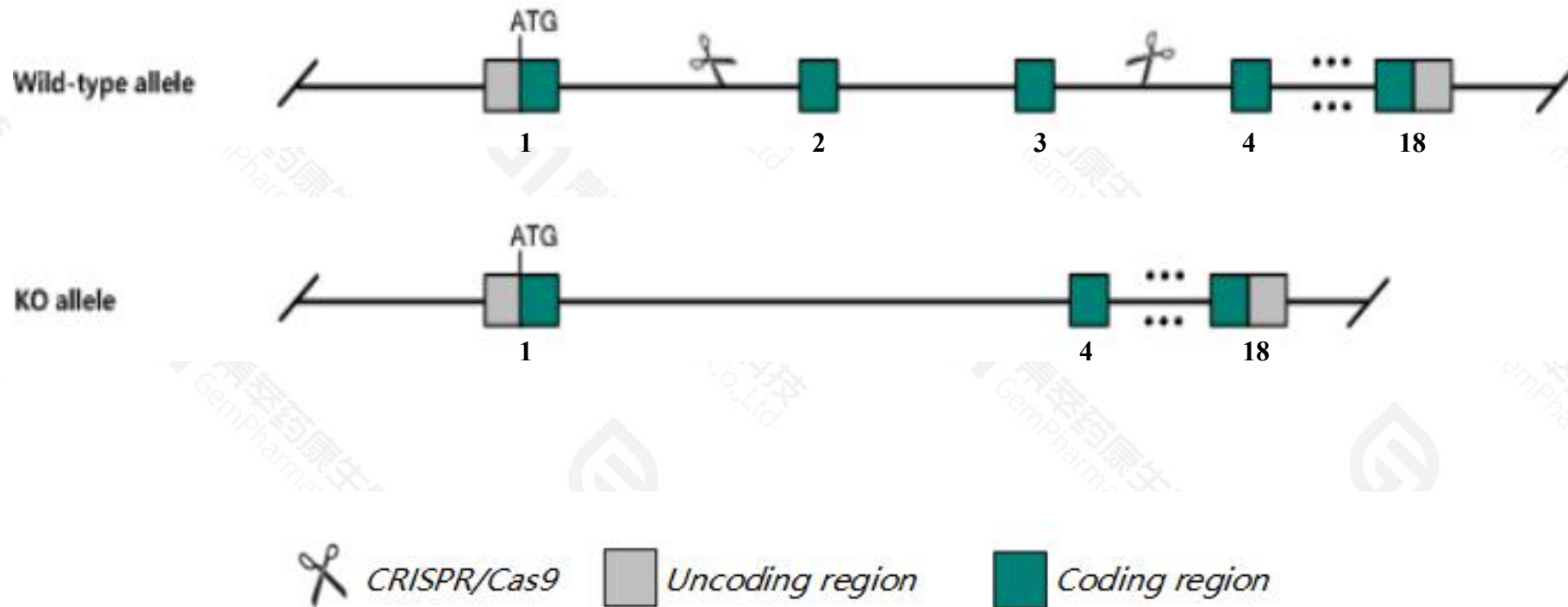
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdr43* gene. The schematic diagram is as follows:



- The *Wdr43* gene has 11 transcripts. According to the structure of *Wdr43* gene, exon2-exon3 of *Wdr43-201*(ENSMUST00000047086.10) transcript is recommended as the knockout region. The region contains 260bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wdr43* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Wdr43* 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.
- Transcript *Wdr43* -209 may not be affected.
- 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)

Wdr43 WD repeat domain 43 [Mus musculus (house mouse)]

Gene ID: 72515, updated on 25-Sep-2020

Summary



Official Symbol Wdr43 provided by [MGI](#)

Official Full Name WD repeat domain 43 provided by [MGI](#)

Primary source [MGI:MGI:1919765](#)

See related [Ensembl:ENSMUSG00000041057](#)

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 2610318G08Rik, AU020887, AV024208, Wrd43, mKIAA0007

Expression Broad expression in CNS E11.5 (RPKM 16.3), liver E14 (RPKM 11.3) and 25 other tissues [See more](#)

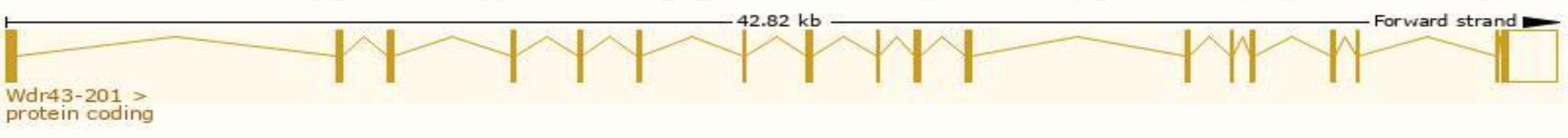
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

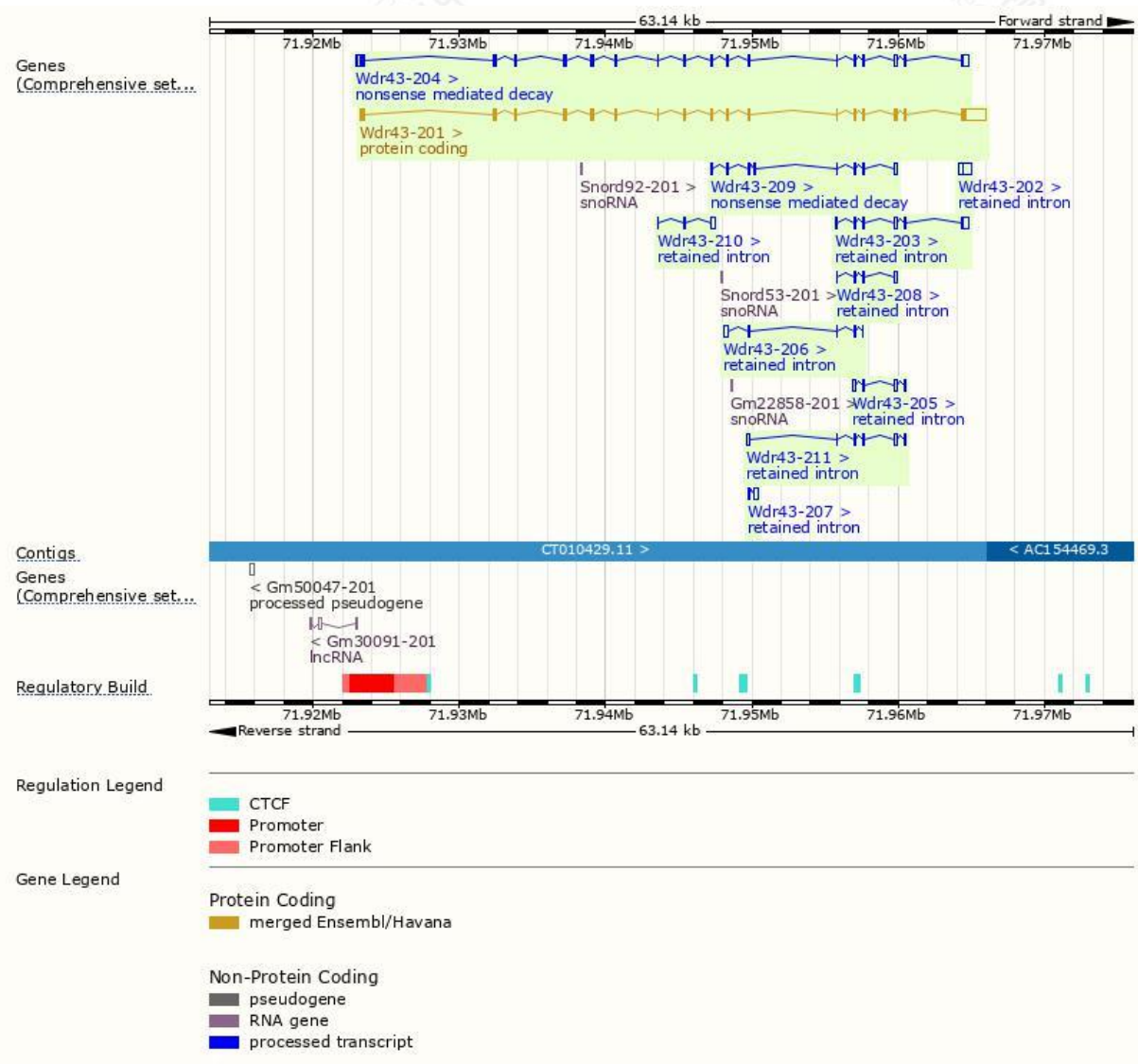
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdr43-201	ENSMUST00000047086.10	3450	677aa	Protein coding	CCDS50180		TSL:1 , GENCODE basic , APPRIS P1 ,
Wdr43-204	ENSMUST000000234560.2	2410	483aa	Nonsense mediated decay	-		
Wdr43-209	ENSMUST000000234933.2	722	149aa	Nonsense mediated decay	-		CDS 5' incomplete ,
Wdr43-202	ENSMUST000000234339.2	798	No protein	Retained intron	-		
Wdr43-203	ENSMUST000000234424.2	745	No protein	Retained intron	-		
Wdr43-206	ENSMUST000000234627.2	663	No protein	Retained intron	-		
Wdr43-210	ENSMUST000000234947.2	528	No protein	Retained intron	-		
Wdr43-211	ENSMUST000000235094.2	459	No protein	Retained intron	-		
Wdr43-205	ENSMUST000000234581.2	402	No protein	Retained intron	-		
Wdr43-207	ENSMUST000000234656.2	401	No protein	Retained intron	-		
Wdr43-208	ENSMUST000000234794.2	297	No protein	Retained intron	-		

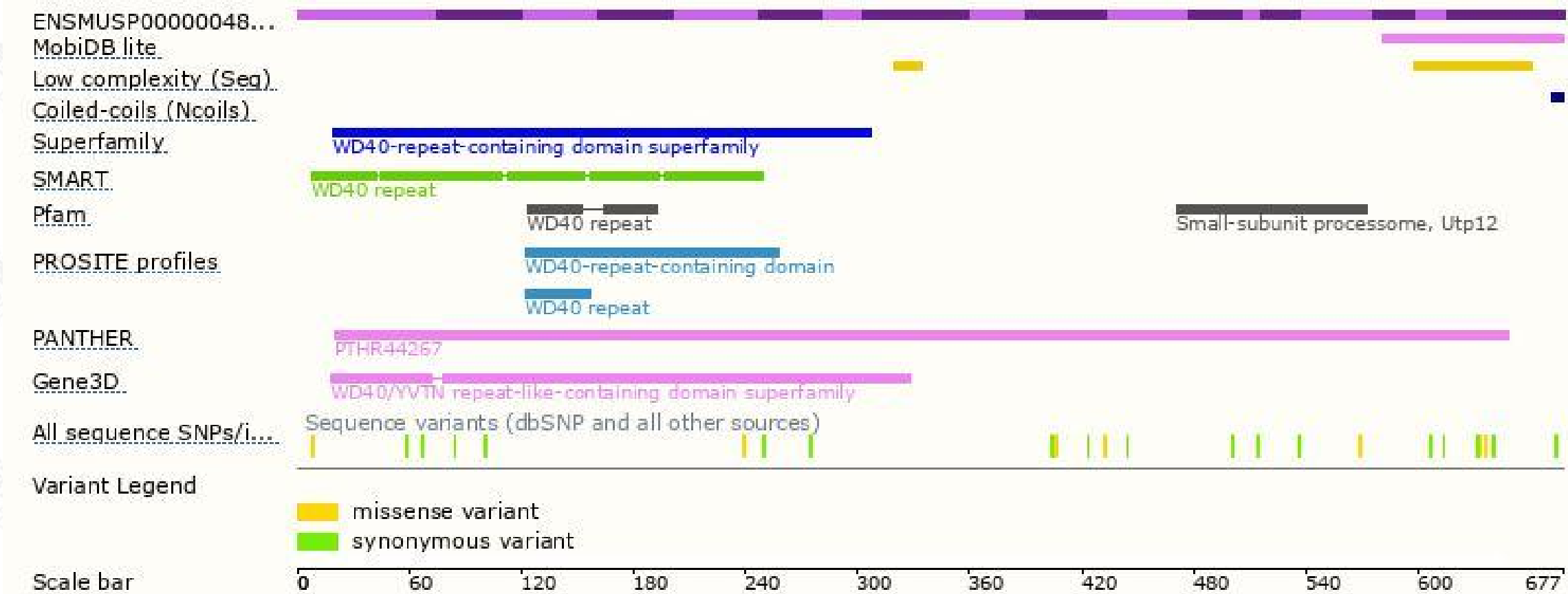
The strategy is based on the design of *Wdr43-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

