

***Wdr78* Cas9-KO Strategy**

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Project Overview

Project Name

Wdr78

Project type

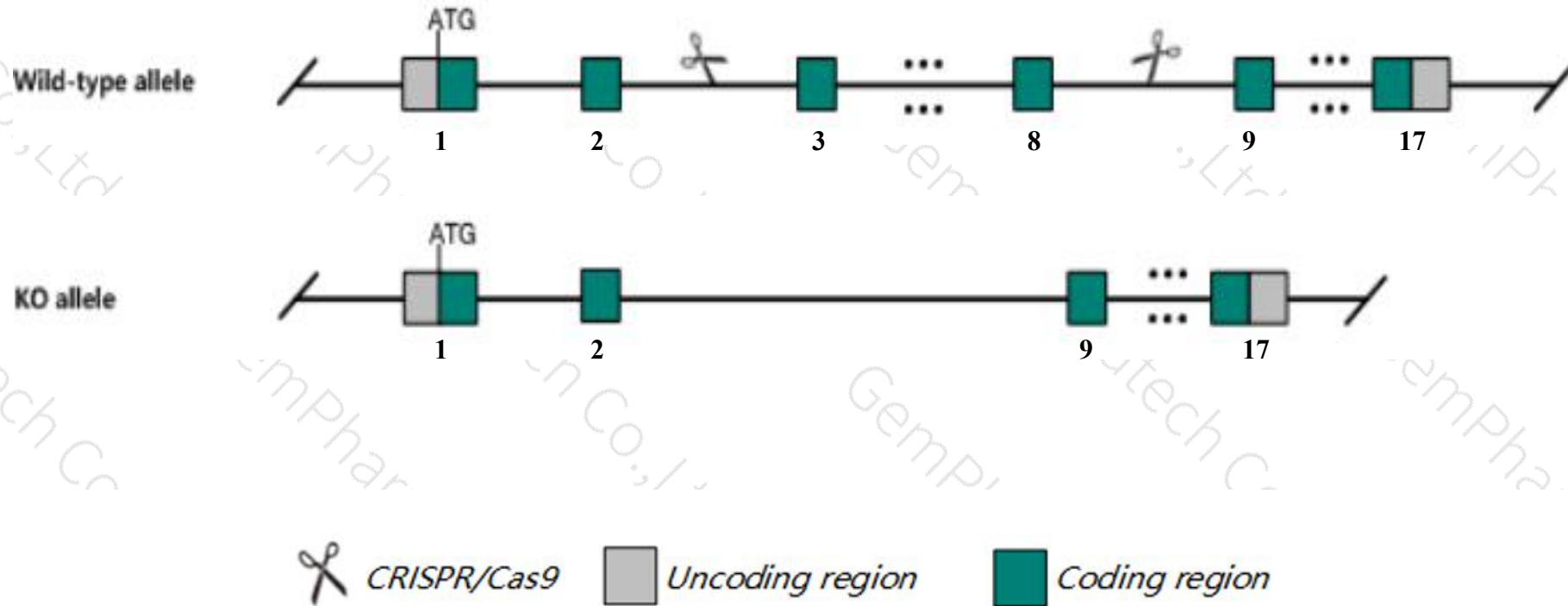
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdr78* gene. The schematic diagram is as follows:



- The *Wdr78* gene has 8 transcripts. According to the structure of *Wdr78* gene, exon3-exon8 of *Wdr78*-203(ENSMUST00000106868.3) transcript is recommended as the knockout region. The region contains 919bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wdr78* 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 *Wdr78* 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)

Wdr78 WD repeat domain 78 [Mus musculus (house mouse)]

Gene ID: 242584, updated on 13-Mar-2020

Summary



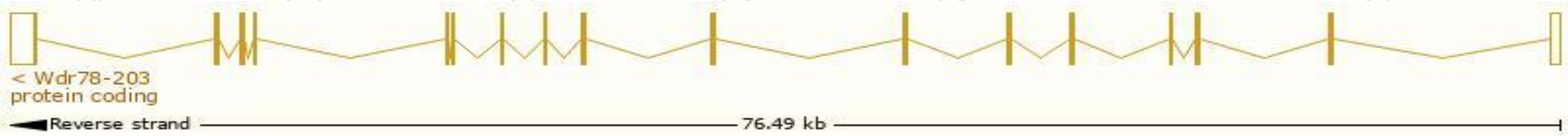
Official Symbol	Wdr78 provided by MGI
Official Full Name	WD repeat domain 78 provided by MGI
Primary source	MGI:MGI:2385328
See related	Ensembl:ENSMUSG00000035126
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC028975
Expression	Biased expression in thymus adult (RPKM 5.9), testis adult (RPKM 5.6) and 12 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

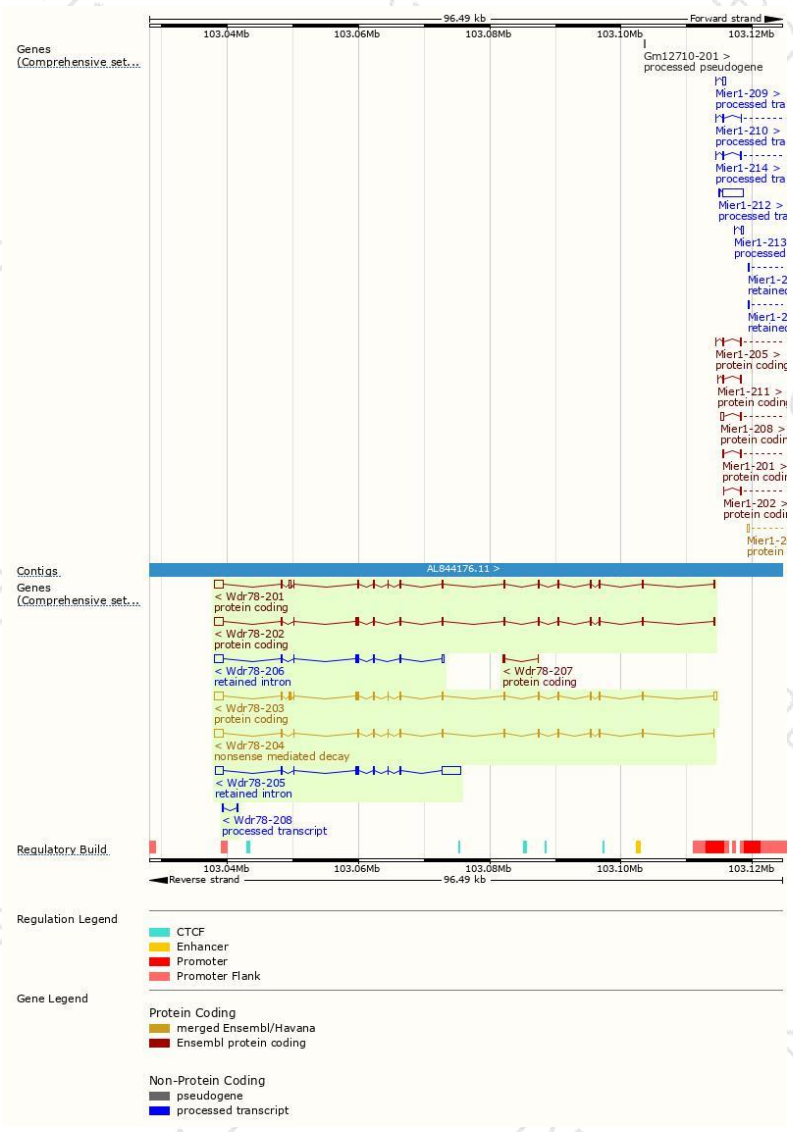
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdr78-203	ENSMUST00000106868.3	4045	807aa	Protein coding	CCDS38824	E9PYY5	TSL:5 GENCODE basic APPRIS P1
Wdr78-201	ENSMUST00000036451.14	3671	611aa	Protein coding	-	E9PYY5	TSL:5 GENCODE basic
Wdr78-202	ENSMUST00000036557.14	3479	320aa	Protein coding	-	E9PYY5	TSL:5 GENCODE basic
Wdr78-207	ENSMUST00000148673.1	429	82aa	Protein coding	-	F6QPI2	CDS 5' incomplete TSL:5
Wdr78-204	ENSMUST00000116316.9	3365	611aa	Nonsense mediated decay	-	E9PYY5	TSL:2
Wdr78-208	ENSMUST00000152647.1	276	No protein	Processed transcript	-	-	TSL:3
Wdr78-205	ENSMUST00000136355.1	5214	No protein	Retained intron	-	-	TSL:2
Wdr78-206	ENSMUST00000138960.7	2546	No protein	Retained intron	-	-	TSL:2

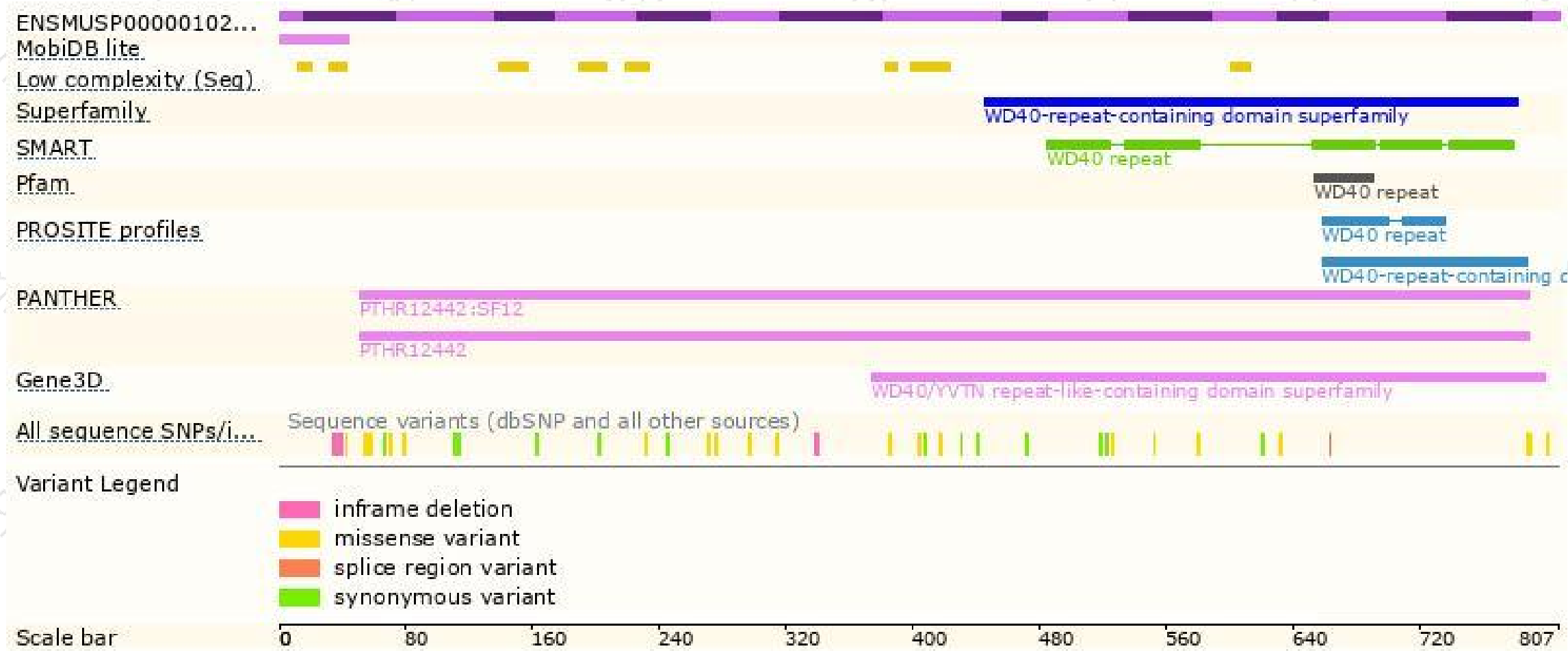
The strategy is based on the design of *Wdr78-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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