

***Wdr7* Cas9-CKO Strategy**

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Project Overview

Project Name

Wdr7

Project type

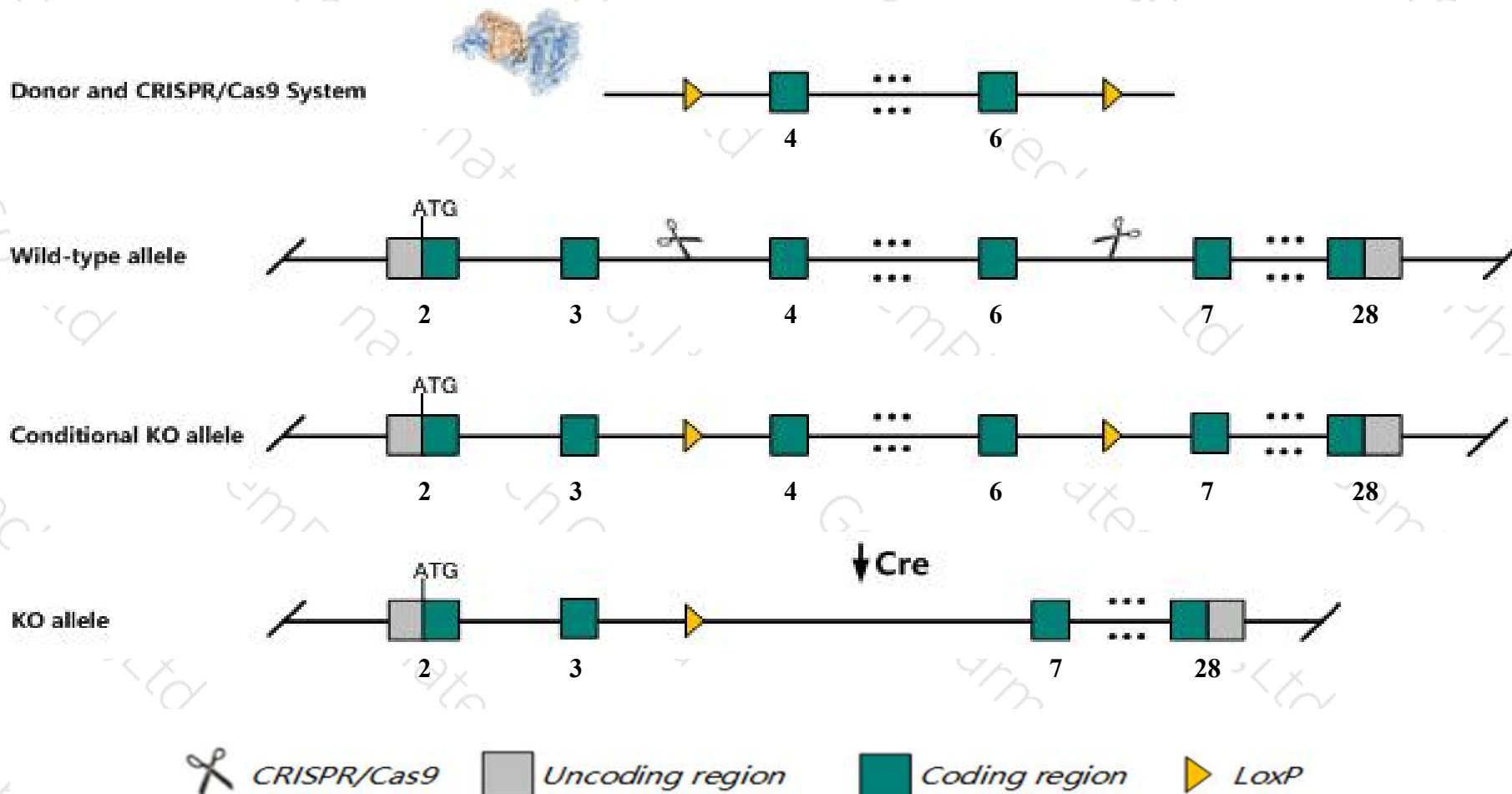
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdr7* gene. The schematic diagram is as follows:



- The *Wdr7* gene has 6 transcripts. According to the structure of *Wdr7* gene, exon4-exon6 of *Wdr7*-201(ENSMUST00000072726.6) transcript is recommended as the knockout region. The region contains 331bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wdr7* gene. The brief process is as follows: CRISPR/Cas9 system 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.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Wdr7* gene is located on the Chr18. 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 202 CDS 5' and 3' incomplete the influences is unknown.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Wdr7 WD repeat domain 7 [Mus musculus (house mouse)]

Gene ID: 104082, updated on 13-Mar-2020

Summary



Official Symbol	Wdr7 provided by MGI
Official Full Name	WD repeat domain 7 provided by MGI
Primary source	MGI:MGI:1860197
See related	Ensembl:ENSMUSG00000040560
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	AI462727, TRAG, mKIAA0541
Expression	Ubiquitous expression in frontal lobe adult (RPKM 10.9), cortex adult (RPKM 9.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

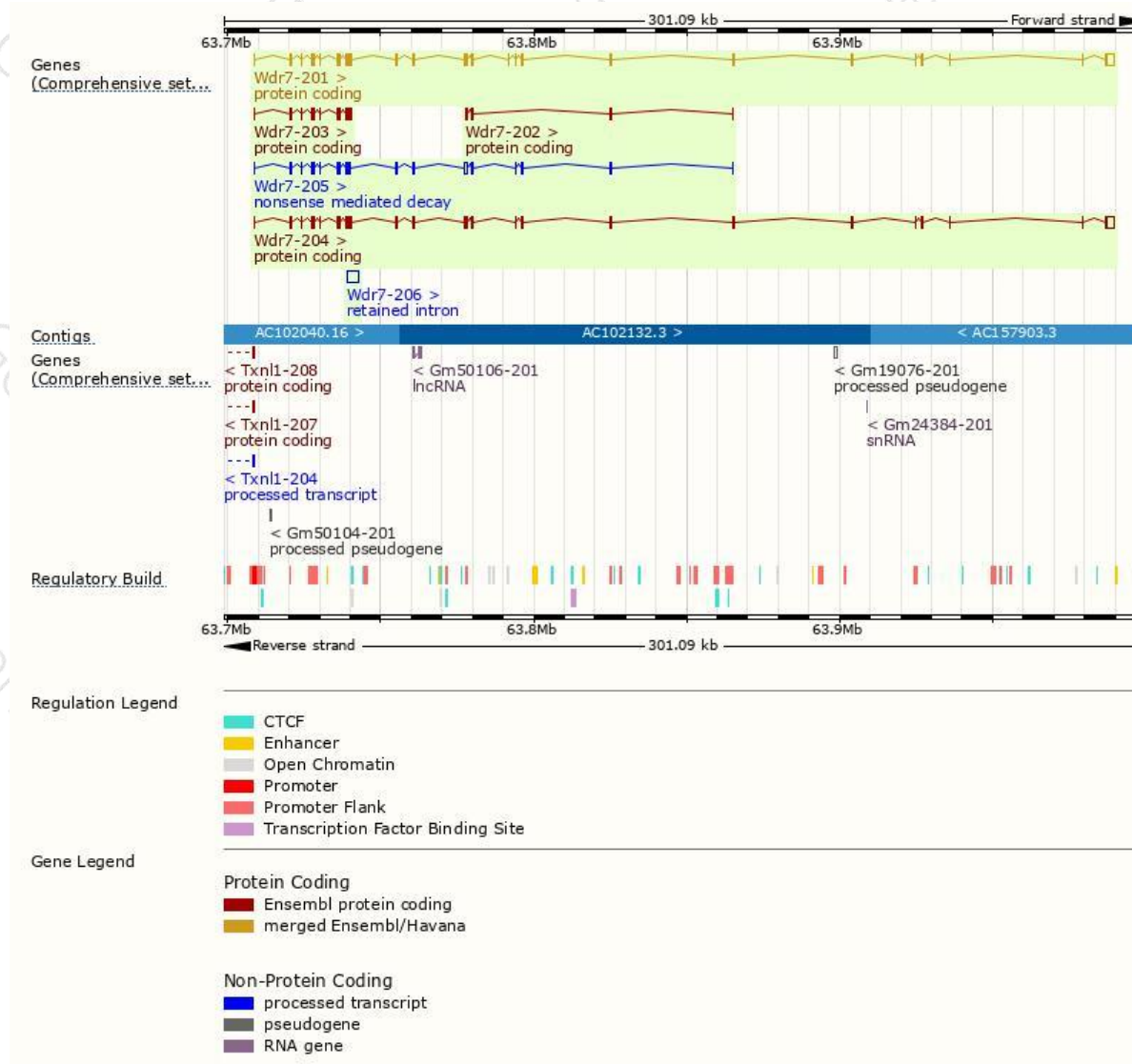
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdr7-201	ENSMUST00000072726.6	7135	1489aa	Protein coding	CCDS50307	Q920I9	TSL:1 GENCODE basic APPRIS P2
Wdr7-204	ENSMUST00000236879.1	6987	1457aa	Protein coding	-	Q920I9	GENCODE basic APPRIS ALT1
Wdr7-203	ENSMUST00000235648.1	2067	531aa	Protein coding	-	Q8C711	GENCODE basic
Wdr7-202	ENSMUST00000235428.1	535	178aa	Protein coding	-	A0A494B9S5	CDS 5' and 3' incomplete
Wdr7-205	ENSMUST00000236956.1	3302	488aa	Nonsense mediated decay	-	A0A494B9P4	
Wdr7-206	ENSMUST00000238193.1	3523	No protein	Retained intron	-	-	

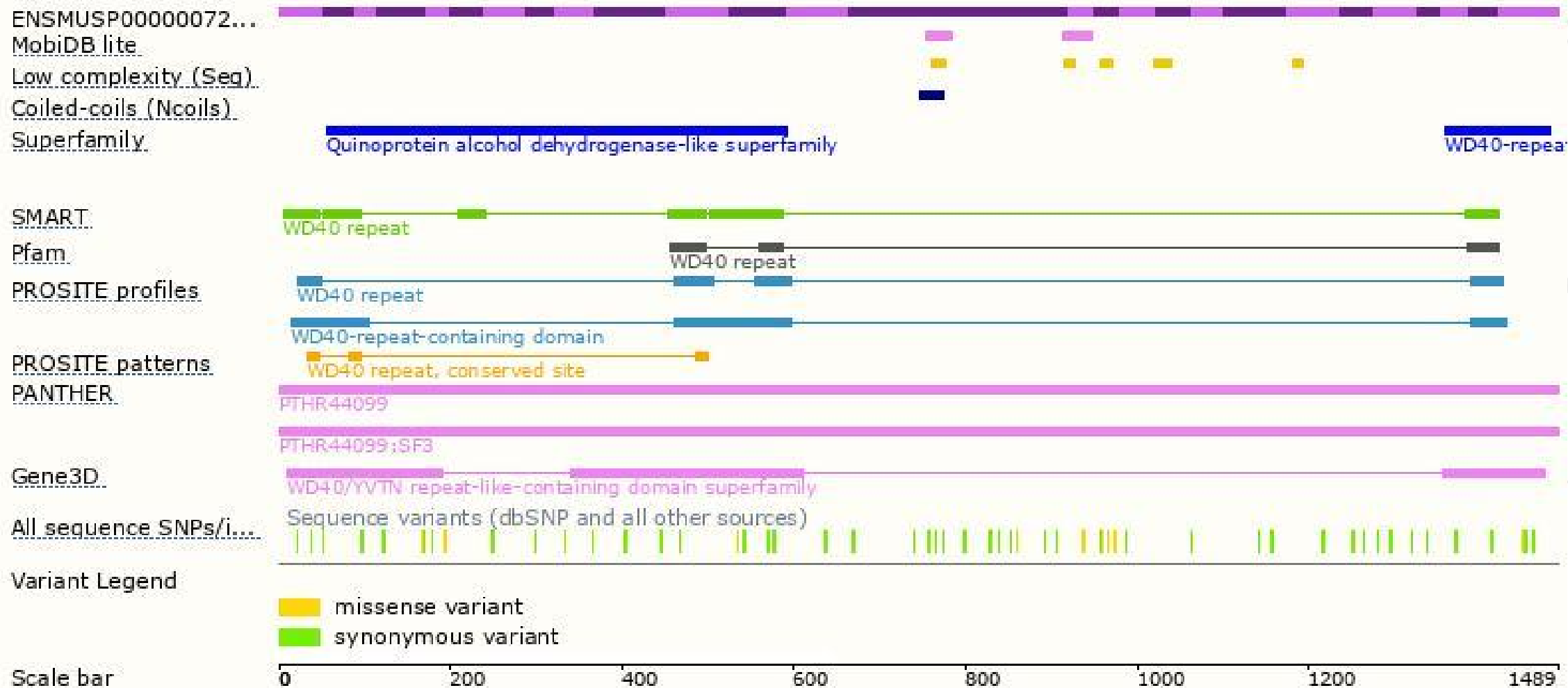
The strategy is based on the design of *Wdr7-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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