

Wdr61 Cas9-CKO Strategy

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Project Overview

Project Name

Wdr61

Project type

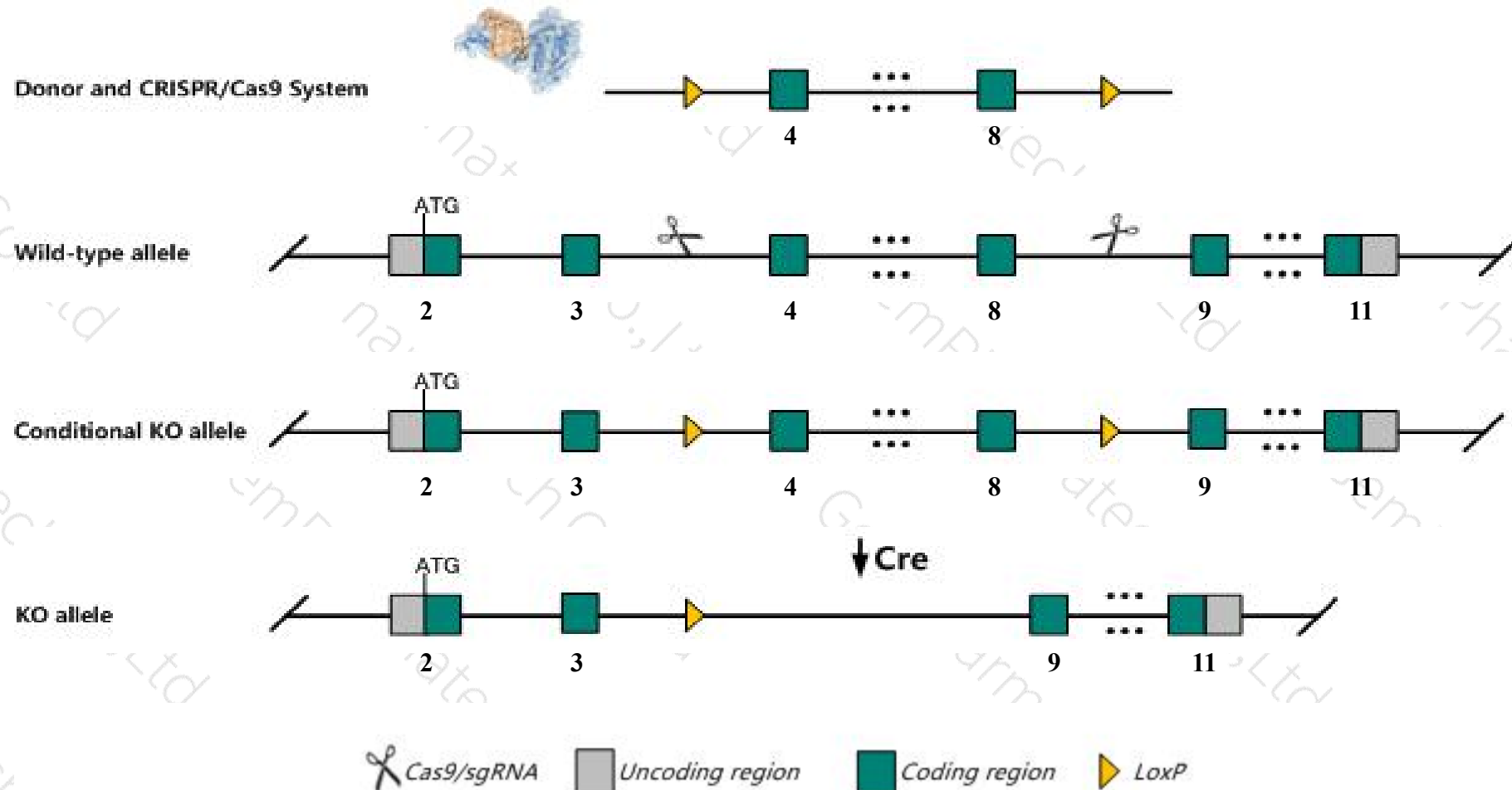
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdr61* gene. The schematic diagram is as follows:



Technical routes

- The *Wdr61* gene has 7 transcripts. According to the structure of *Wdr61* gene, exon4-exon8 of *Wdr61*-203(ENSMUST00000121204.7) transcript is recommended as the knockout region. The region contains 616bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wdr61* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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 *Wdr61* gene is located on the Chr9. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Wdr61 WD repeat domain 61 [Mus musculus (house mouse)]

Gene ID: 66317, updated on 13-Mar-2020

Summary



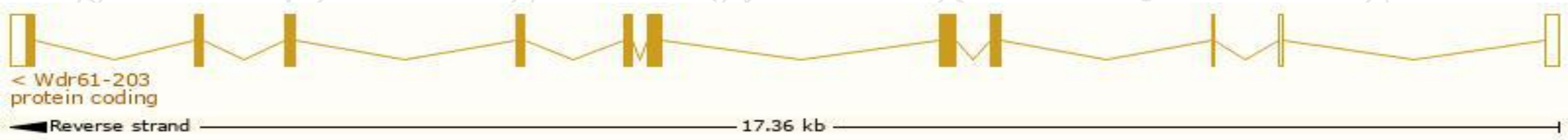
Official Symbol	Wdr61 provided by MGI
Official Full Name	WD repeat domain 61 provided by MGI
Primary source	MGI:MGI:1917493
See related	Ensembl:ENSMUSG00000061559
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2700038L12Rik, 2810418I05Rik, REC14
Expression	Ubiquitous expression in placenta adult (RPKM 61.0), bladder adult (RPKM 36.7) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

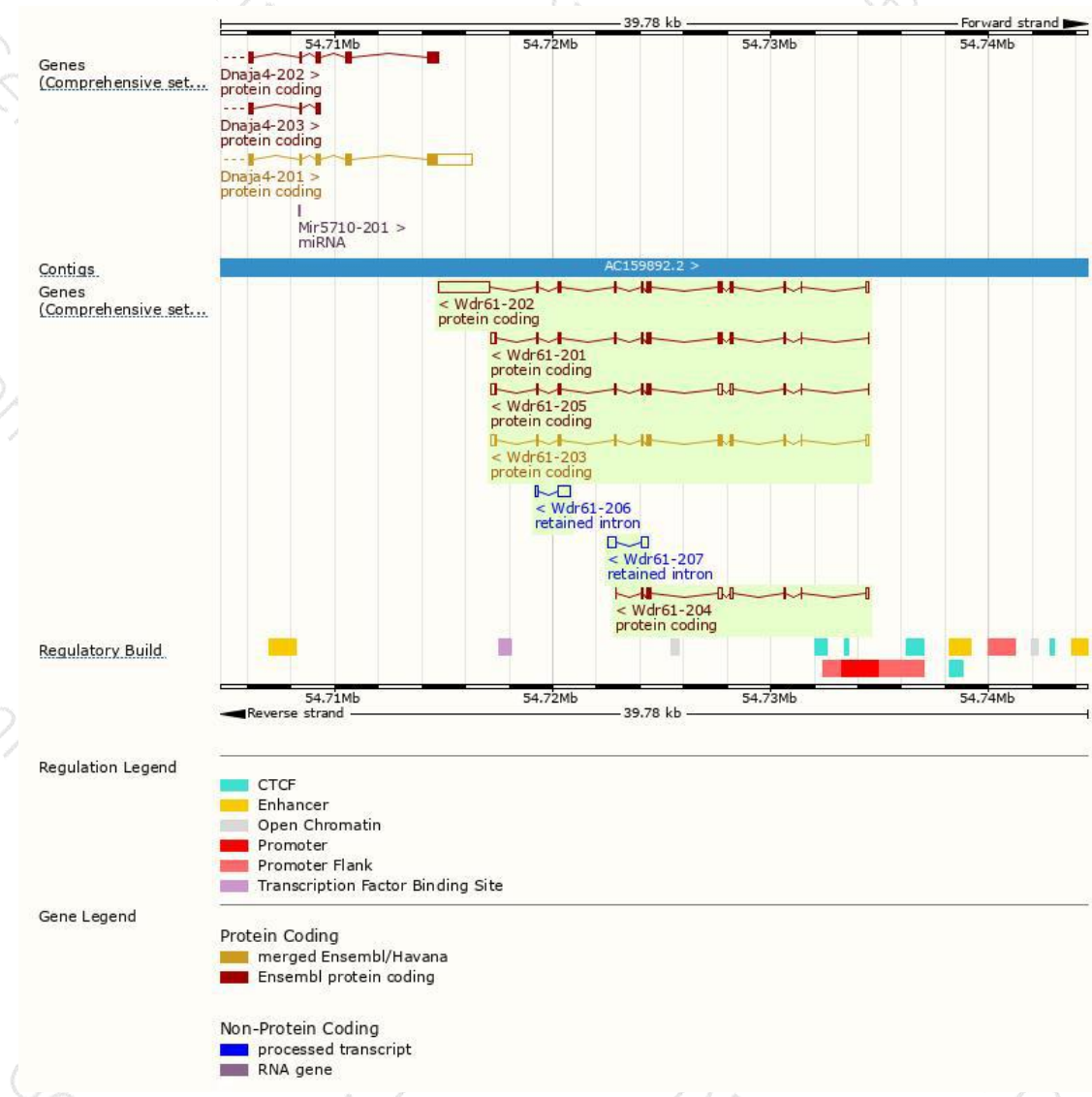
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdr61-203	ENSMUST00000121204.7	1290	305aa	Protein coding	CCDS23194	A0MNP4 Q9ERF3	TSL:1 GENCODE basic APPRIS P1
Wdr61-201	ENSMUST00000051822.12	1187	305aa	Protein coding	CCDS23194	A0MNP4 Q9ERF3	TSL:1 GENCODE basic APPRIS P1
Wdr61-205	ENSMUST00000130368.7	1162	207aa	Protein coding	CCDS59747	D6RDC7	TSL:1 GENCODE basic
Wdr61-202	ENSMUST00000118771.7	3372	279aa	Protein coding	-	Q8BVQ0	TSL:1 GENCODE basic
Wdr61-204	ENSMUST00000127451.1	784	107aa	Protein coding	-	D6RJ72	CDS 3' incomplete TSL:3
Wdr61-207	ENSMUST00000148494.1	710	No protein	Retained intron	-	-	TSL:3
Wdr61-206	ENSMUST00000144365.1	665	No protein	Retained intron	-	-	TSL:3

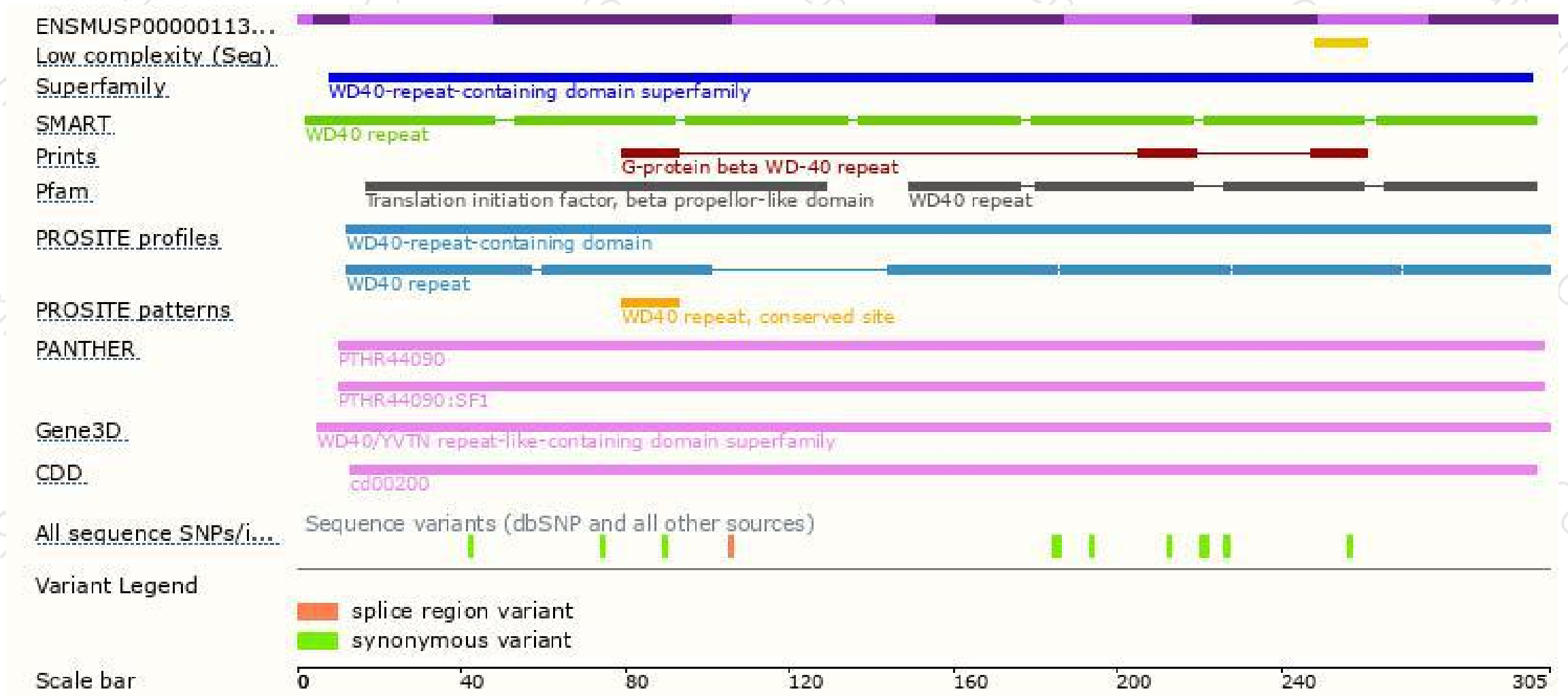
The strategy is based on the design of *Wdr61-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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