

Wdr20 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Wdr20

Project type

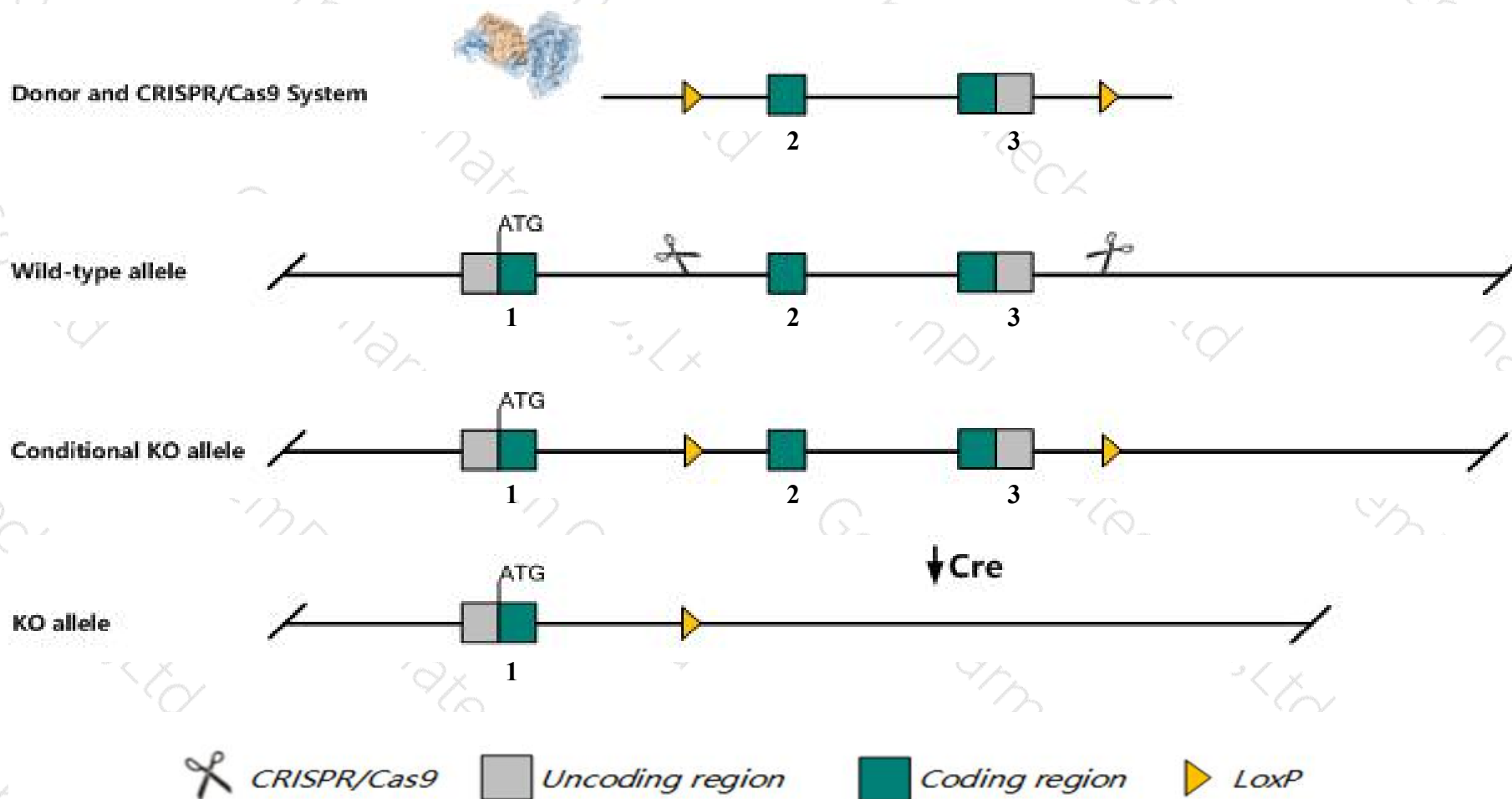
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdr20* gene. The schematic diagram is as follows:



- The *Wdr20* gene has 7 transcripts. According to the structure of *Wdr20* gene, exon2-exon3 of *Wdr20-201* (ENSMUST00000095410.7) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wdr20* 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.

Notice

- The *Wdr20* gene is located on the Chr12. 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)

Wdr20 WD repeat domain 20 [*Mus musculus* (house mouse)]

Gene ID: 69641, updated on 12-Aug-2019

Summary

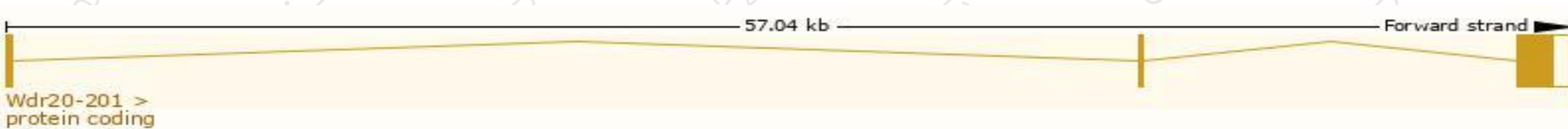
Official Symbol	Wdr20 provided by MGI
Official Full Name	WD repeat domain 20 provided by MGI
Primary source	MGI:MGI:1916891
See related	Ensembl:ENSMUSG00000037957
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Wdr20a; AI549910; 2310040A13Rik
Expression	Ubiquitous expression in testis adult (RPKM 4.4), thymus adult (RPKM 3.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

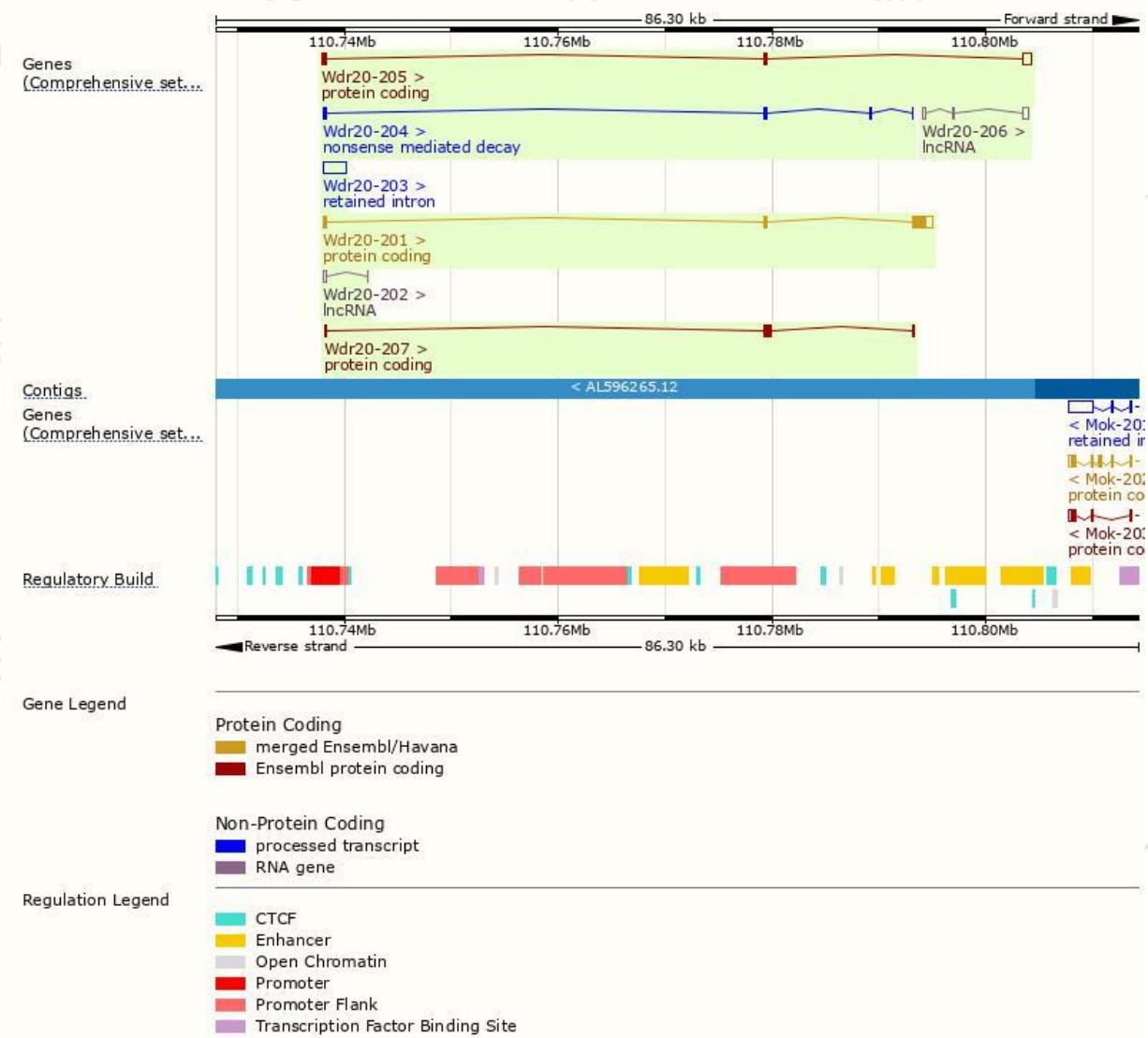
The gene has 7 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdr20-201	ENSMUST00000095410.7	2384	569aa	Protein coding	CCDS26173	Q3UWE6	TSL:1 GENCODE basic APPRIS P1
Wdr20-205	ENSMUST00000193053.5	1351	161aa	Protein coding	CCDS84002	Q9D721	TSL:1 GENCODE basic
Wdr20-207	ENSMUST00000195886.1	581	122aa	Protein coding	-	A0A0A6YXV5	CDS 5' incomplete TSL:3
Wdr20-204	ENSMUST00000192870.5	572	146aa	Nonsense mediated decay	-	A0A0A6YX87	TSL:3
Wdr20-203	ENSMUST00000191983.1	2252	No protein	Retained intron	-	-	TSL:NA
Wdr20-206	ENSMUST00000194118.1	960	No protein	lncRNA	-	-	TSL:2
Wdr20-202	ENSMUST00000191611.1	373	No protein	lncRNA	-	-	TSL:3

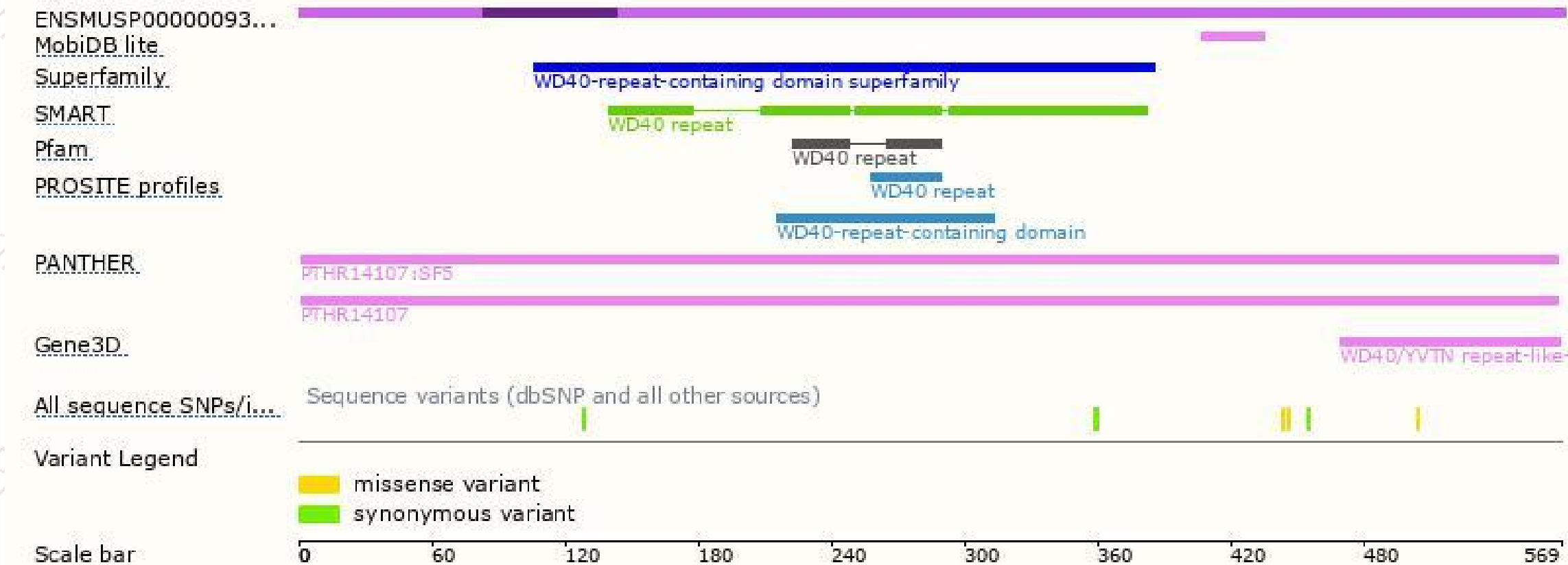
The strategy is based on the design of *Wdr20-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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