

Wdfy1 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Wdfy1

Project type

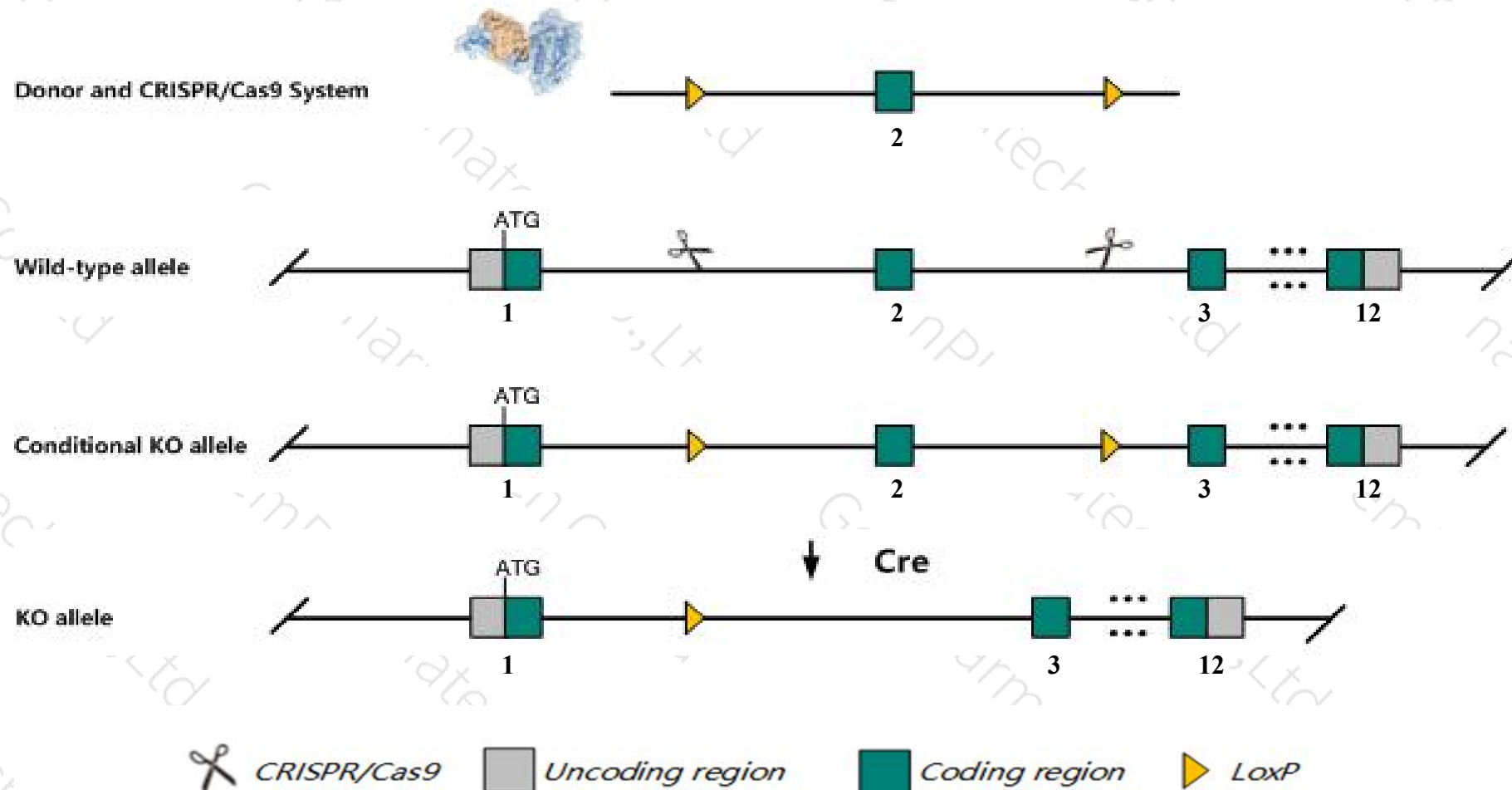
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdfy1* gene. The schematic diagram is as follows:



- The *Wdfy1* gene has 14 transcripts. According to the structure of *Wdfy1* gene, exon2 of *Wdfy1-204* (ENSMUST00000113512.7) transcript is recommended as the knockout region. The region contains 68bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wdfy1* 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 *Wdfy1* gene is located on the Chr1. 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)

Wdfy1 WD repeat and FYVE domain containing 1 [Mus musculus (house mouse)]

Gene ID: 69368, updated on 2-Apr-2019

Summary



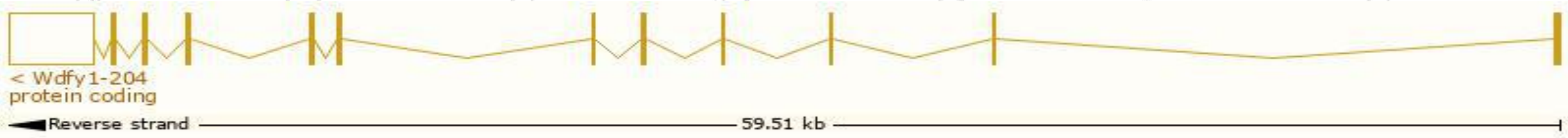
Official Symbol	Wdfy1 provided by MGI
Official Full Name	WD repeat and FYVE domain containing 1 provided by MGI
Primary source	MGI:MGI:1916618
See related	Ensembl:ENSMUSG00000073643
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700013B03Rik, 1700120F24Rik, FENS-1, Jr1, WDF1, ZFYVE17, mKIAA1435
Expression	Ubiquitous expression in testis adult (RPKM 34.1), whole brain E14.5 (RPKM 7.6) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

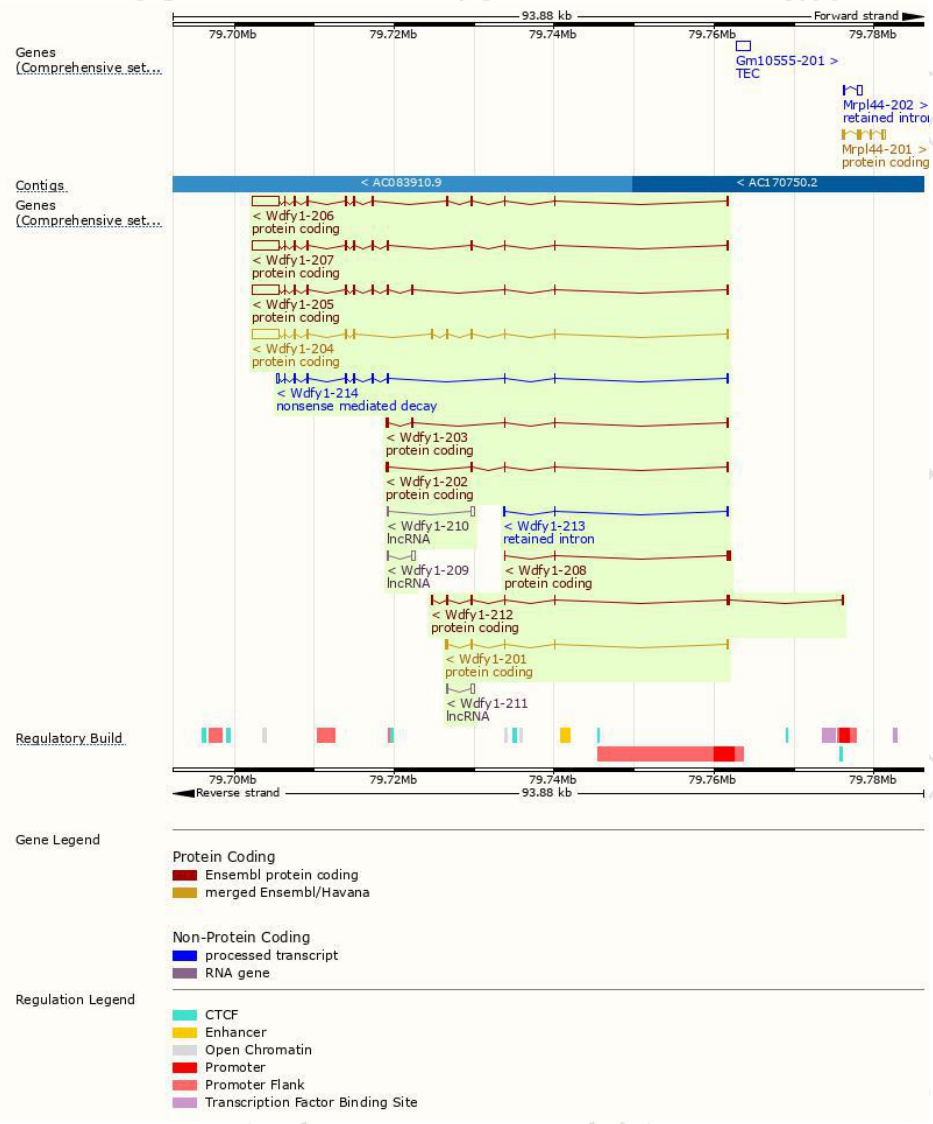
The gene has 14 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdfy1-204	ENSMUST00000113512.7	4551	410aa	Protein coding	CCDS48296	E9Q4P1	TSL:1 GENCODE basic APPRIS P1
Wdfy1-201	ENSMUST00000048820.13	717	187aa	Protein coding	CCDS15090	Q9DAD3	TSL:1 GENCODE basic
Wdfy1-205	ENSMUST00000113513.7	4551	410aa	Protein coding	-	E9Q4P1	TSL:5 GENCODE basic APPRIS P1
Wdfy1-206	ENSMUST00000113514.7	4551	410aa	Protein coding	-	E9Q4P1	TSL:1 GENCODE basic APPRIS P1
Wdfy1-207	ENSMUST00000113515.7	4551	410aa	Protein coding	-	E9Q4P1	TSL:1 GENCODE basic APPRIS P1
Wdfy1-212	ENSMUST00000143368.7	914	182aa	Protein coding	-	D3Z057	CDS 3' incomplete TSL:3
Wdfy1-202	ENSMUST00000113510.7	704	187aa	Protein coding	-	Q9DAD3	TSL:1 GENCODE basic
Wdfy1-203	ENSMUST00000113511.7	704	187aa	Protein coding	-	Q9DAD3	TSL:5 GENCODE basic
Wdfy1-208	ENSMUST00000125641.1	460	75aa	Protein coding	-	D3YWG9	CDS 3' incomplete TSL:5
Wdfy1-214	ENSMUST00000187005.6	1359	110aa	Nonsense mediated decay	-	A0A087WPX9	TSL:5
Wdfy1-213	ENSMUST00000186464.1	480	No protein	Retained intron	-	-	TSL:2
Wdfy1-209	ENSMUST00000127771.7	555	No protein	lncRNA	-	-	TSL:3
Wdfy1-210	ENSMUST00000130714.7	555	No protein	lncRNA	-	-	TSL:5
Wdfy1-211	ENSMUST00000138319.1	555	No protein	lncRNA	-	-	TSL:3

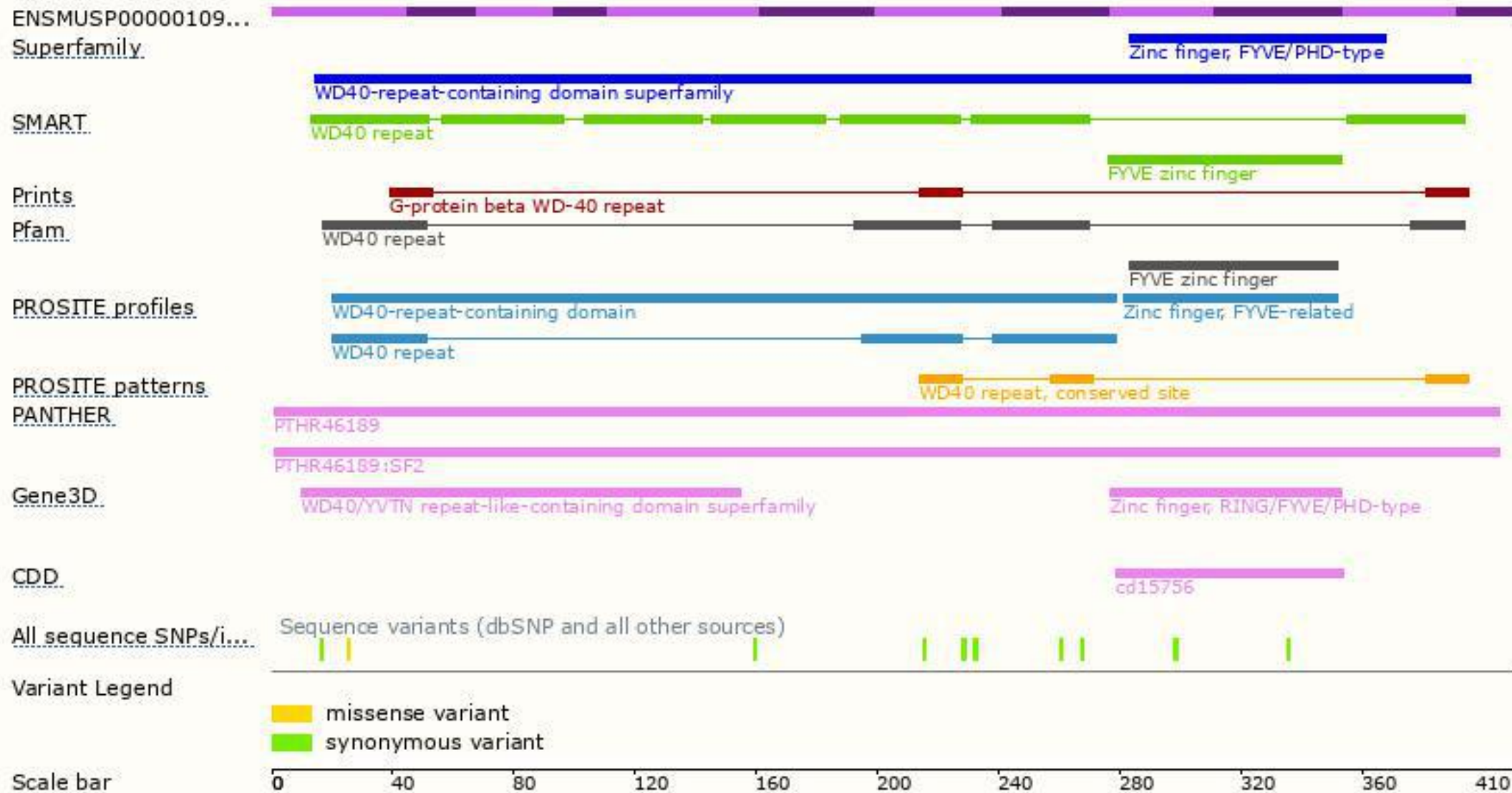
The strategy is based on the design of *Wdfy1-204* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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