

Wrap73 Cas9-CKO Strategy

Designer: Xueting Zhang

Reviewer: Daohua Xu

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Project Overview

Project Name

Wrap73

Project type

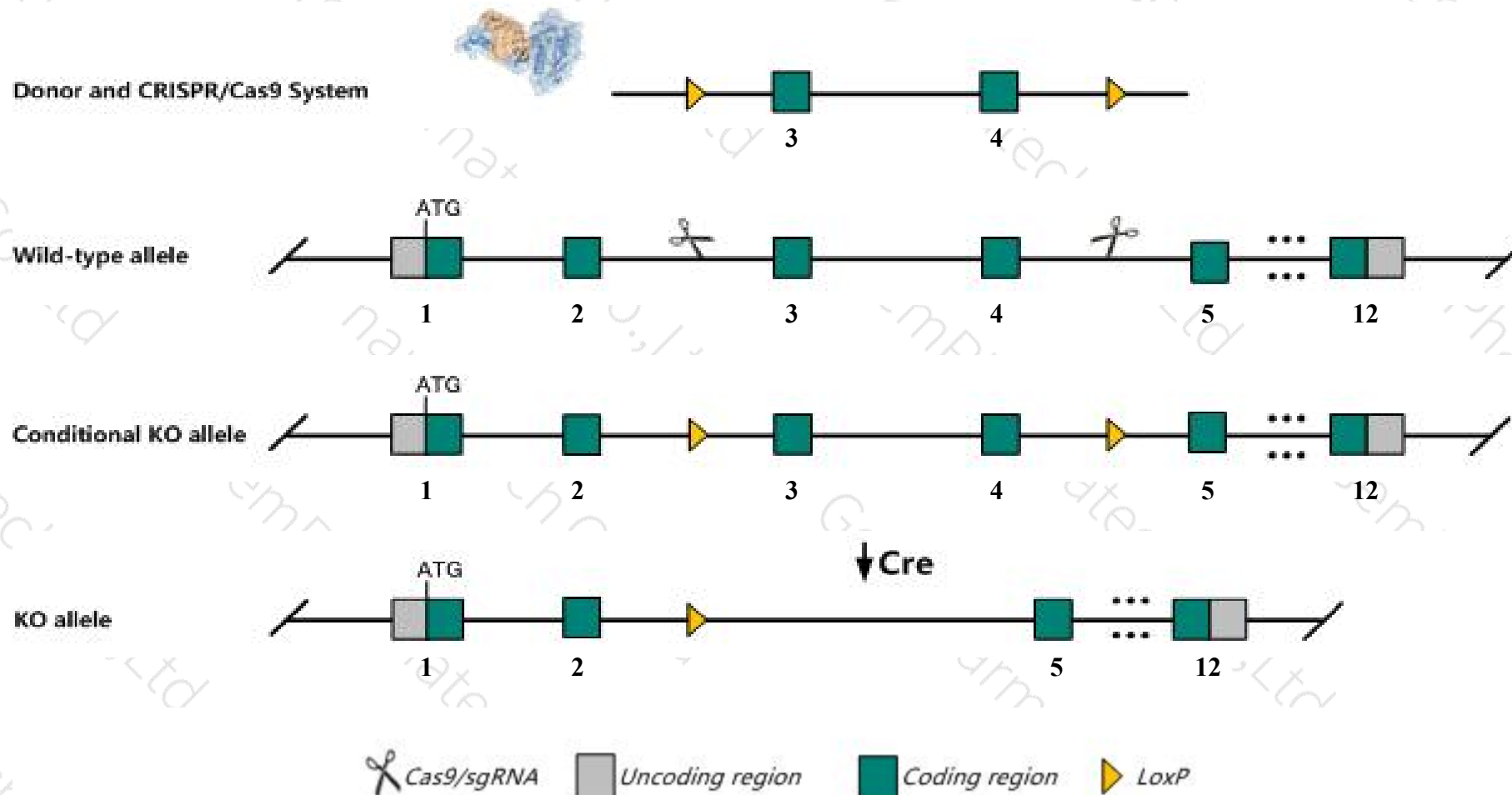
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wrap73* gene. The schematic diagram is as follows:



Technical routes

- The *Wrap73* gene has 4 transcripts. According to the structure of *Wrap73* gene, exon3-exon4 of *Wrap73*-201(ENSMUST00000030895.11) transcript is recommended as the knockout region. The region contains 190bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wrap73* 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 *Wrap73* 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.
- The floxed region is near to the N-terminal of *Trp73* gene, this strategy may influence the regulatory function of the N-terminal of *Trp73* gene.
- Transcript *Wrap73*-202 may not be affected.
- The effect on transcript *Wrap73*-204 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)

Wrap73 WD repeat containing, antisense to Trp73 [Mus musculus (house mouse)]

Gene ID: 59002, updated on 13-Mar-2020

Summary



Official Symbol	Wrap73 provided by MGI
Official Full Name	WD repeat containing, antisense to Trp73 provided by MGI
Primary source	MGI:MGI:1891749
See related	Ensembl:ENSMUSG00000029029
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	2610044M17Rik, 5330425N03Rik, Dd57, Wdr8
Expression	Ubiquitous expression in thymus adult (RPKM 22.1), adrenal adult (RPKM 18.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

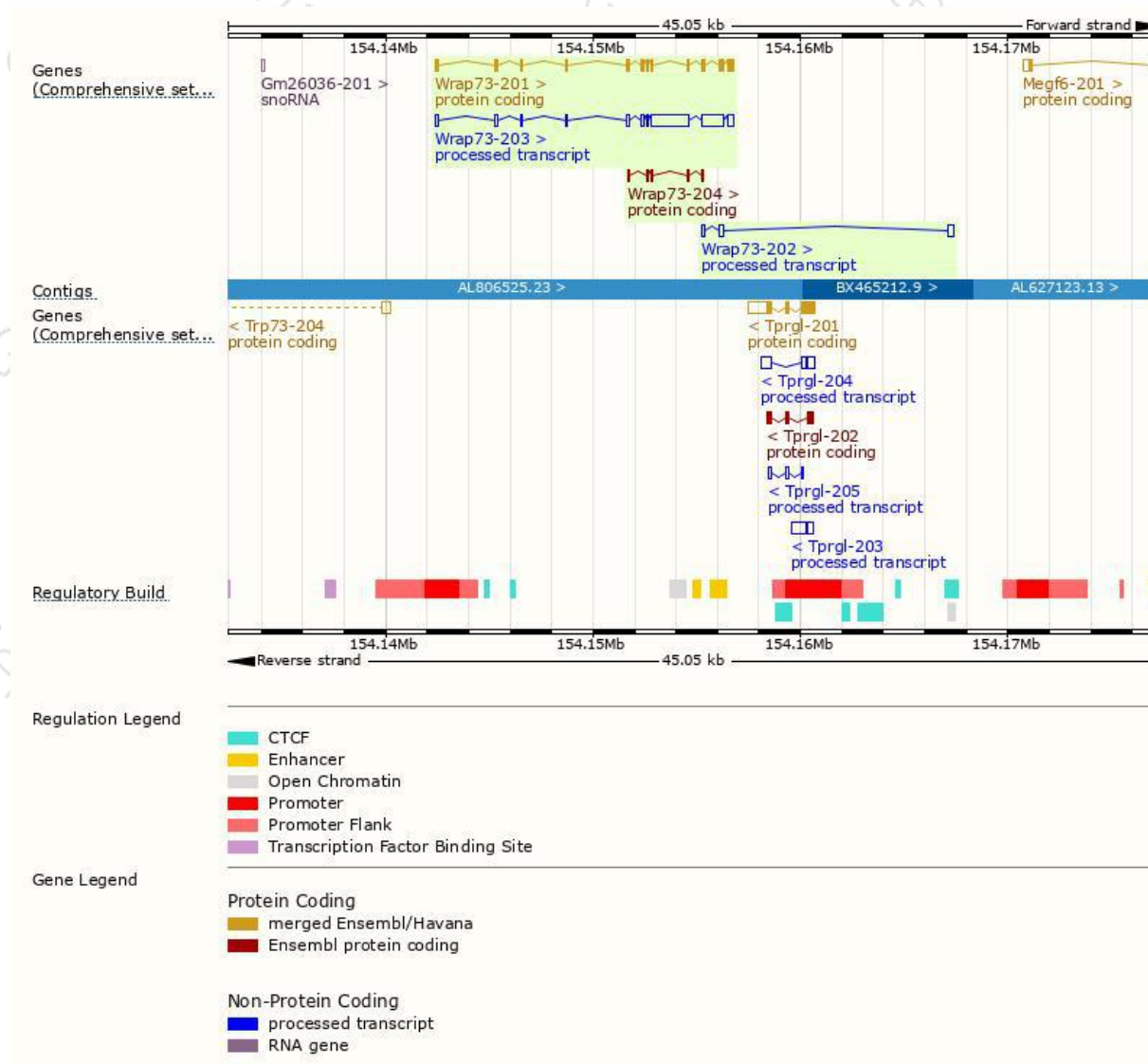
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wrap73-201	ENSMUST00000030895.11	1598	462aa	Protein coding	CCDS19010	Q9J M98	TSL:1 GENCODE basic APPRIS P1
Wrap73-204	ENSMUST000000146734.1	399	133aa	Protein coding	-	F6VR19	CDS 5' and 3' incomplete TSL:5
Wrap73-203	ENSMUST000000142665.1	3959	No protein	Processed transcript	-	-	TSL:2
Wrap73-202	ENSMUST000000132562.1	657	No protein	Processed transcript	-	-	TSL:1

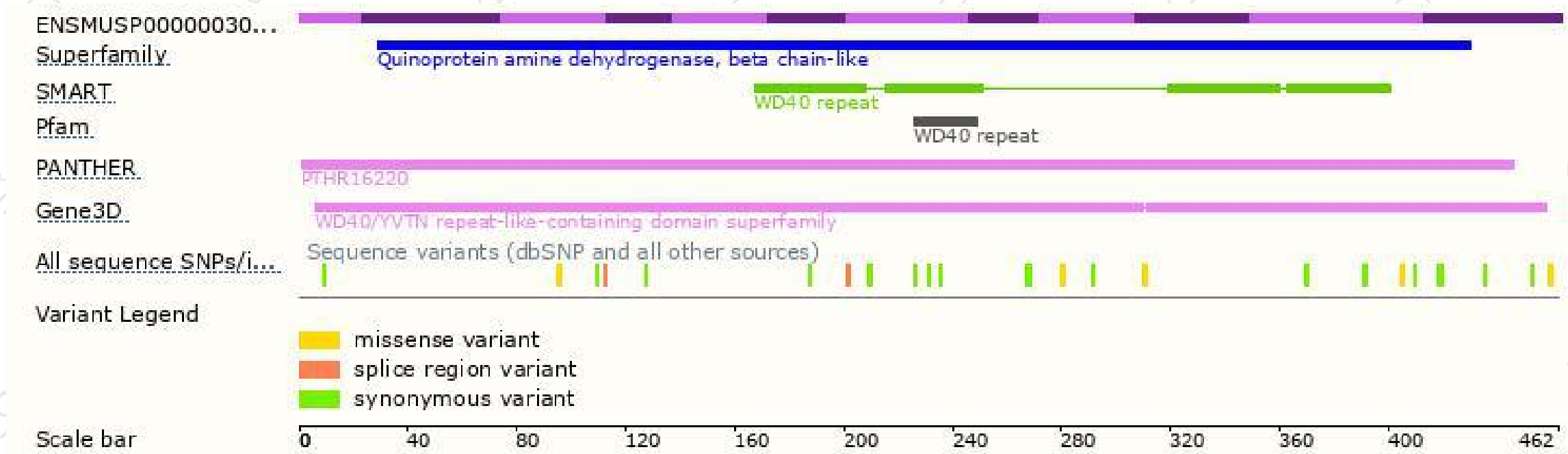
The strategy is based on the design of *Wrap73-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

