

Wrap53 Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Wrap53

Project type

Cas9-CKO

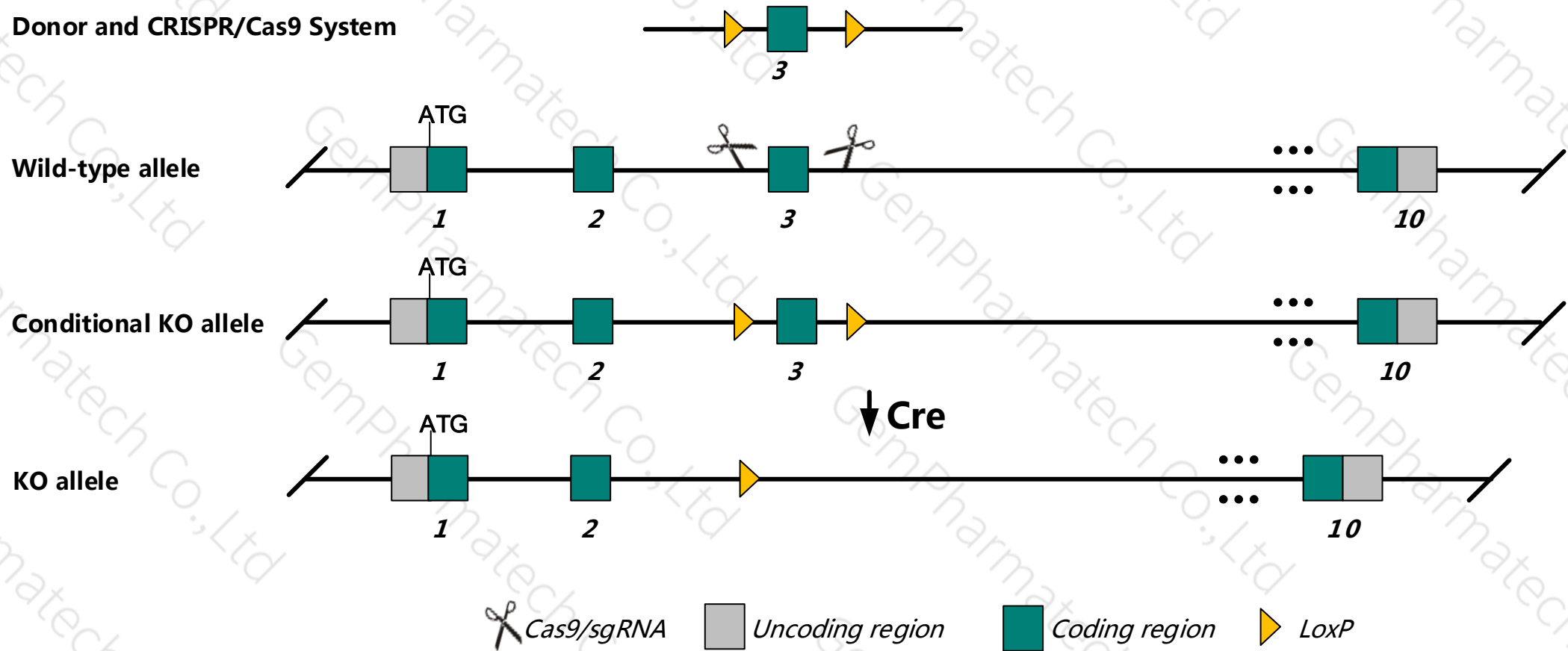
Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wrap53* gene. The schematic diagram is as follows:

Donor and CRISPR/Cas9 System



- The *Wrap53* gene has 3 transcripts. According to the structure of *Wrap53* gene, exon3 of *Wrap53*-201 (ENSMUST00000048139.11) transcript is recommended as the knockout region. The region contains 112bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wrap53* 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 or cell types.

- The *Wrap53* gene is located on the Chr11. 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 the loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Wrap53 WD repeat containing, antisense to Trp53 [*Mus musculus* (house mouse)]

Gene ID: 216853, updated on 2-Oct-2018

Summary

Official Symbol Wrap53 provided by [MGI](#)

Official Full Name WD repeat containing, antisense to Trp53 provided by [MGI](#)

Primary source [MGI:MGI:2384933](#)

See related [Ensembl:ENSMUSG000000041346](#) [Vega:OTTMUSG000000005983](#)

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 Wdr79; BC021790

Expression Ubiquitous expression in thymus adult (RPKM 8.1), large intestine adult (RPKM 6.4) and 28 other tissues [See more](#)

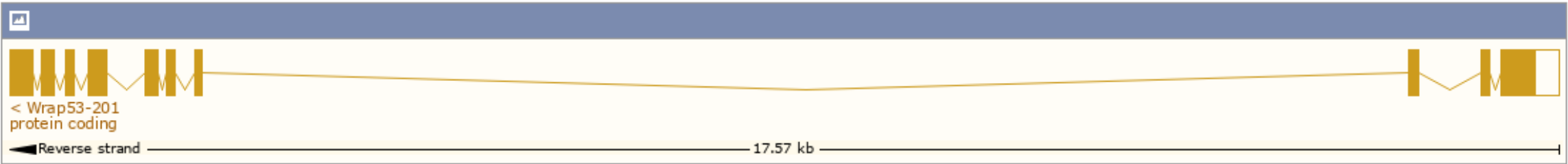
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

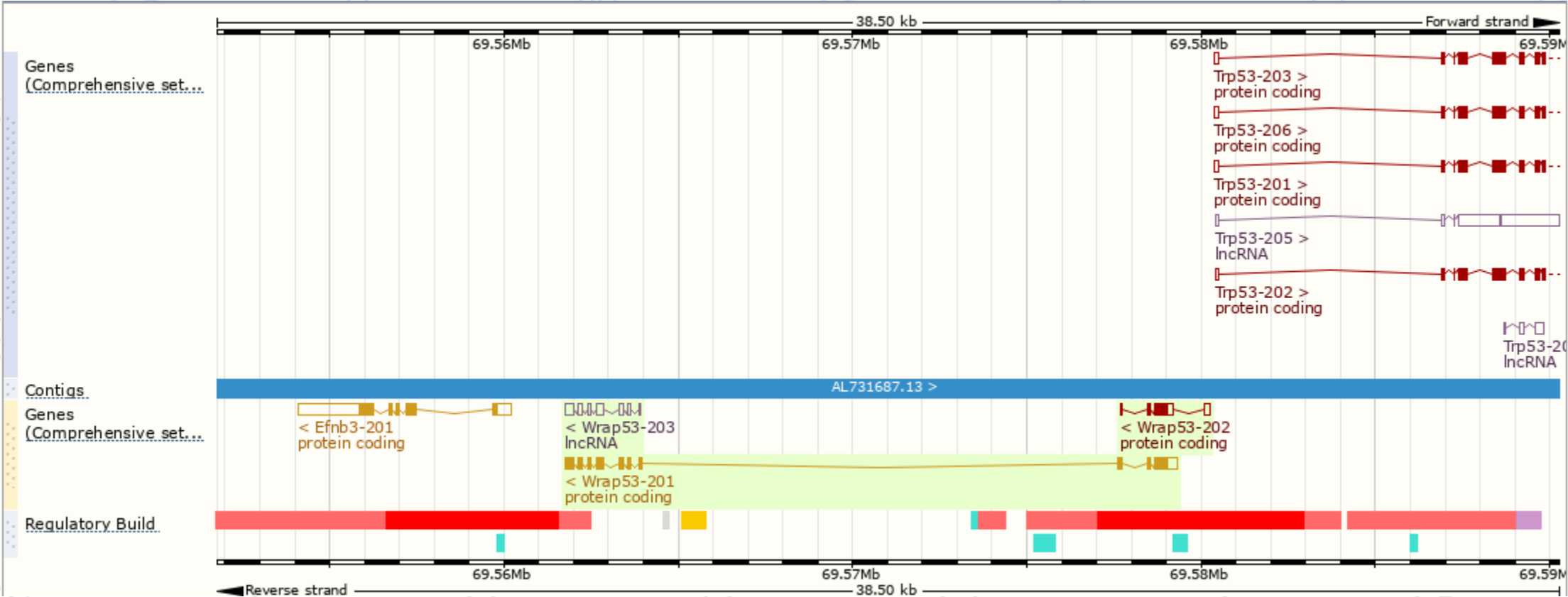
The gene has 3 transcripts, and all transcripts are shown below:

Show/hide columns (1 hidden) Filter								
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Wrap53-201	ENSMUST00000048139.11	1891	532aa	Protein coding	CCDS24897	Q8VC51	NM_001364769 NM_144824 NP_001351698 NP_659073	TSL:1 GENCODE basic APPRIS P1
Wrap53-202	ENSMUST00000132548.1	827	170aa	Protein coding	-	I7HJ86	-	CDS 3' incomplete TSL:5
Wrap53-203	ENSMUST00000155894.1	985	No protein	Processed transcript	-	-	-	TSL:5

The strategy is based on the design of *Wrap53-201* transcript, The transcription is shown below



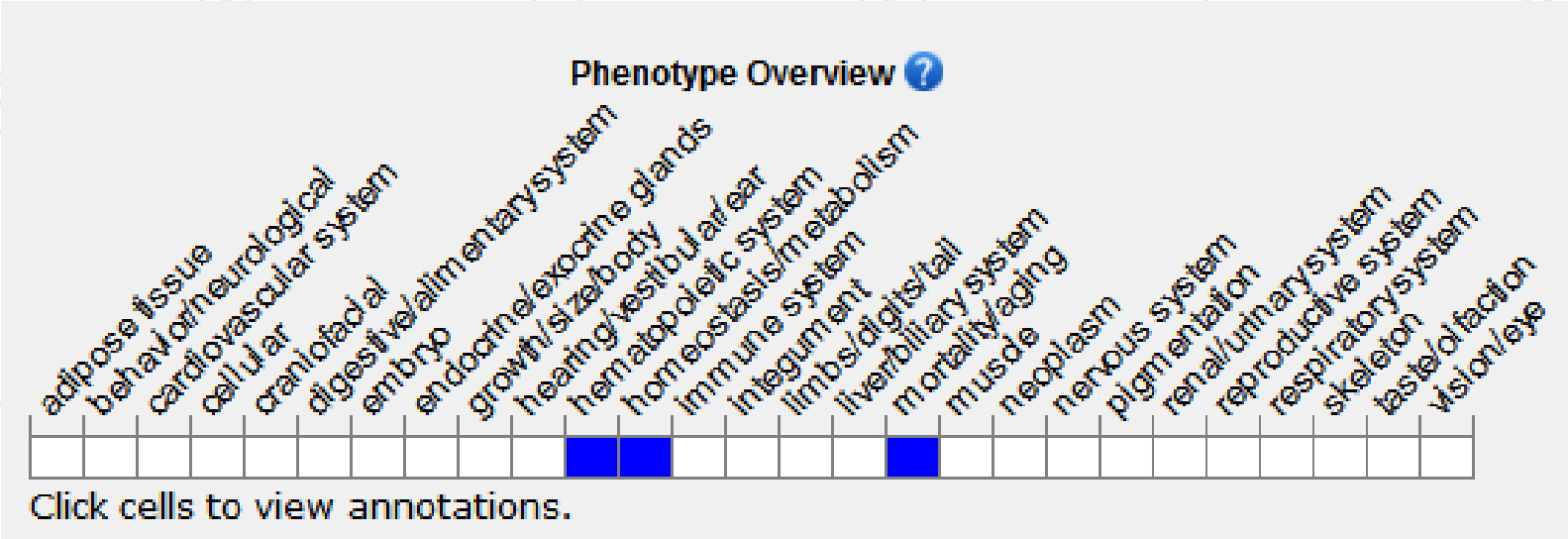
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>) .

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