

Dcaf10 Cas9-KO Strategy

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Project Overview

Project Name

Dcaf10

Project type

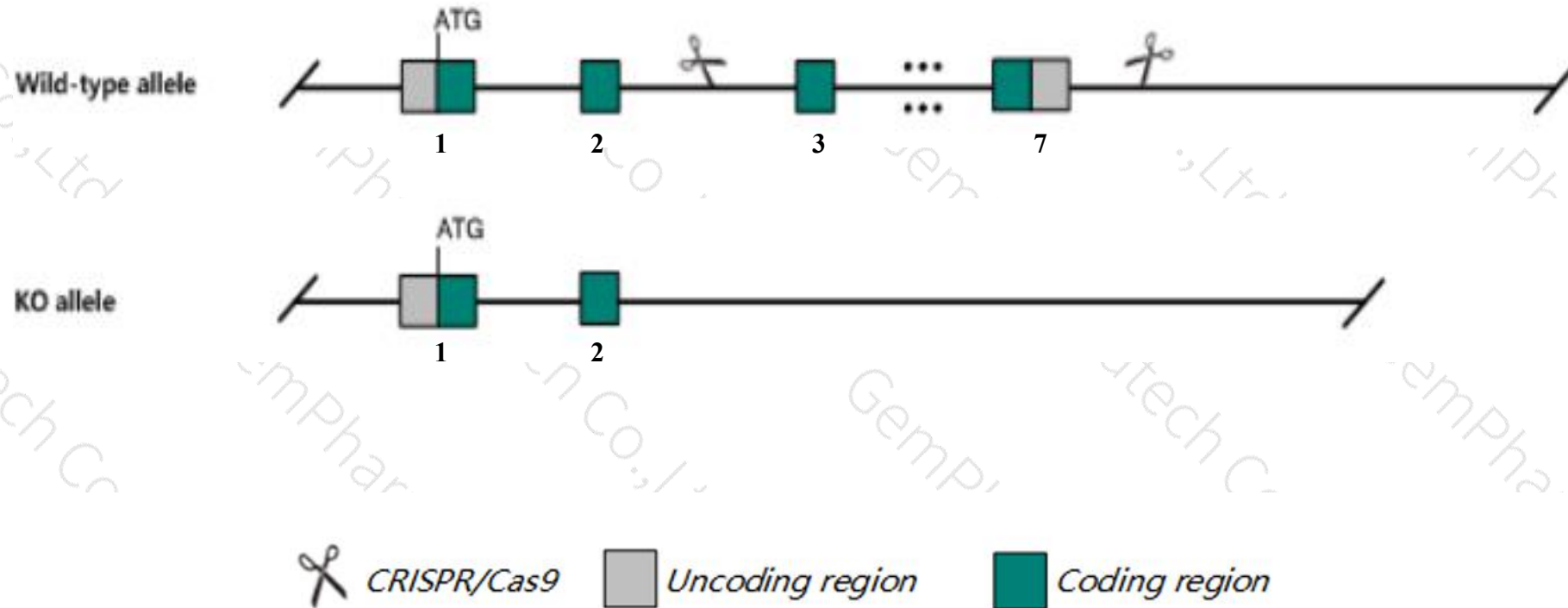
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dcaf10* gene. The schematic diagram is as follows:



- The *Dcaf10* gene has 4 transcripts. According to the structure of *Dcaf10* gene, exon3-exon7 of *Dcaf10*-204(ENSMUST00000155551.7) transcript is recommended as the knockout region. The region contains 1027bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dcaf10* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Dcaf10* 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.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Dcaf10 DDB1 and CUL4 associated factor 10 [Mus musculus (house mouse)]

Gene ID: 242418, updated on 13-Mar-2020

Summary



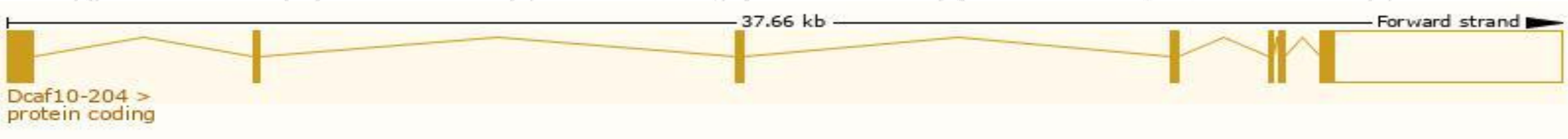
Official Symbol	Dcaf10 provided by MGI
Official Full Name	DDB1 and CUL4 associated factor 10 provided by MGI
Primary source	MGI:MGI:2140179
See related	Ensembl:ENSMUSG00000035572
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AA959934, Wdr32
Expression	Ubiquitous expression in adrenal adult (RPKM 5.1), ovary adult (RPKM 3.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

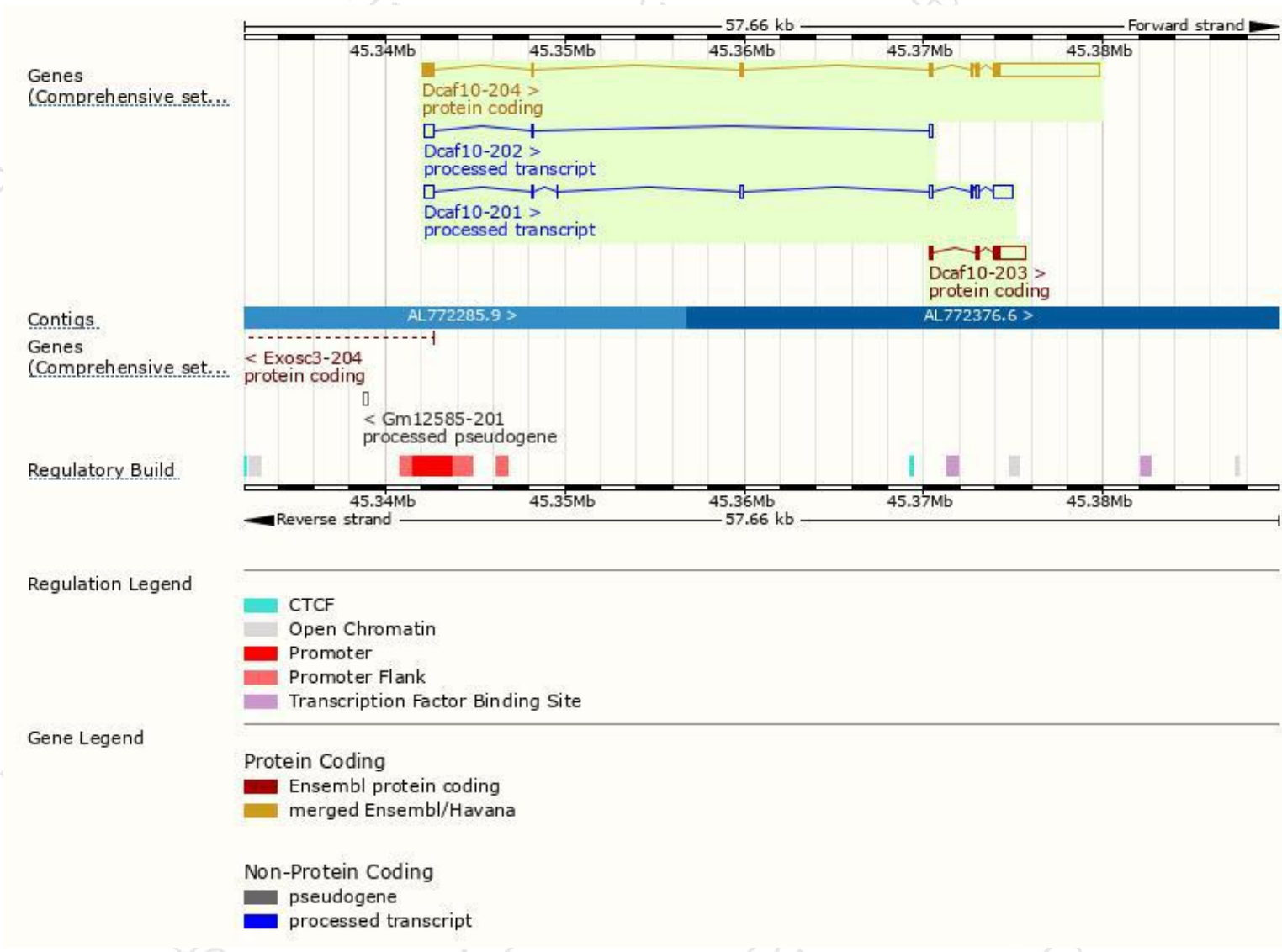
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dcaf10-204	ENSMUST00000155551.7	7250	566aa	Protein coding	CCDS38754	A2AKB9	TSL:1 GENCODE basic APPRIS P1
Dcaf10-203	ENSMUST00000153803.1	2068	225aa	Protein coding	-	Z4YN28	CDS 5' incomplete TSL:5
Dcaf10-201	ENSMUST00000107798.3	2421	No protein	Processed transcript	-	-	TSL:1
Dcaf10-202	ENSMUST00000130821.7	896	No protein	Processed transcript	-	-	TSL:5

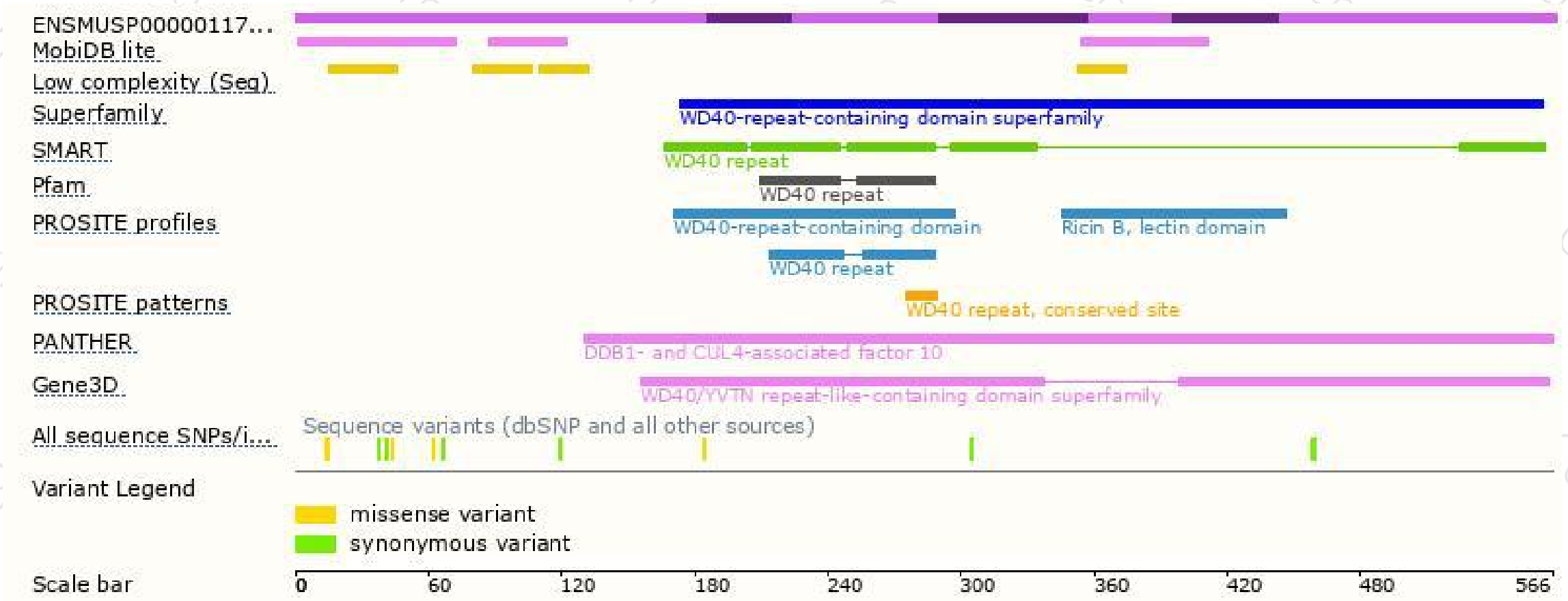
The strategy is based on the design of *Dcaf10-204* transcript,the transcription is shown below:



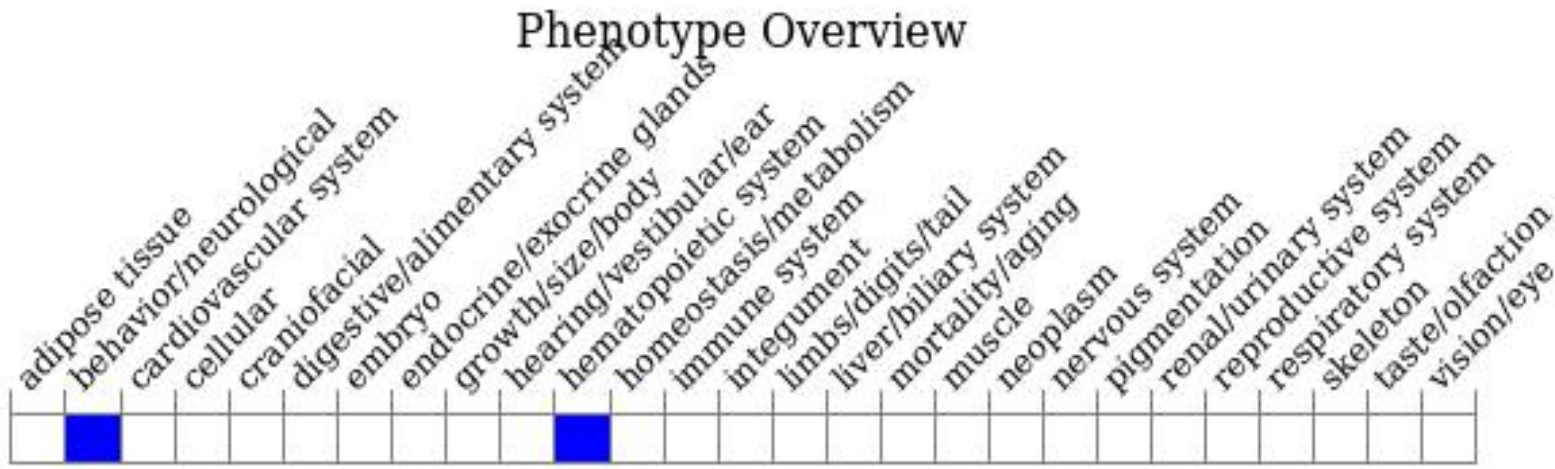
Genomic location distribution



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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