

Dcaf7 Cas9-KO Strategy

Designer:

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Design Date:

2019-10-21

Project Overview

Project Name

Dcaf7

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dcaf7* gene. The schematic diagram is as follows:



- The *Dcaf7* gene has 2 transcripts. According to the structure of *Dcaf7* gene, exon2-exon6 of *Dcaf7-201* (ENSMUST00000058438.8) transcript is recommended as the knockout region. The region contains 718bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dcaf7* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Dcaf7* 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.
- The KO region contains functional region of the *Gm11646* gene. Knockout the region may affect the function of *Gm11646* gene.
- 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)

Dcaf7 DDB1 and CUL4 associated factor 7 [Mus musculus (house mouse)]

Gene ID: 71833, updated on 31-Jan-2019

Summary



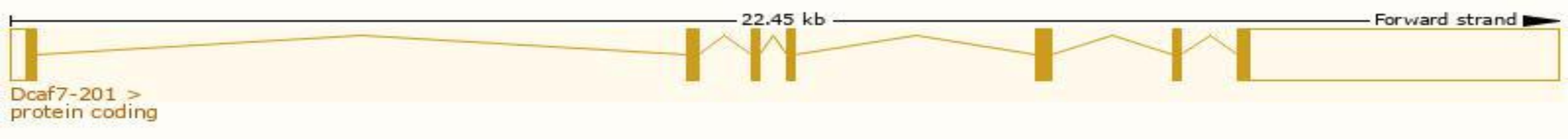
Official Symbol	Dcaf7 provided by MGI
Official Full Name	DDB1 and CUL4 associated factor 7 provided by MGI
Primary source	MGI:MGI:1919083
See related	Ensembl:ENSMUSG00000049354
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700012F10Rik, 2610037L01Rik, C86529, HAN11, Wdr68
Expression	Ubiquitous expression in CNS E18 (RPKM 52.6), whole brain E14.5 (RPKM 48.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

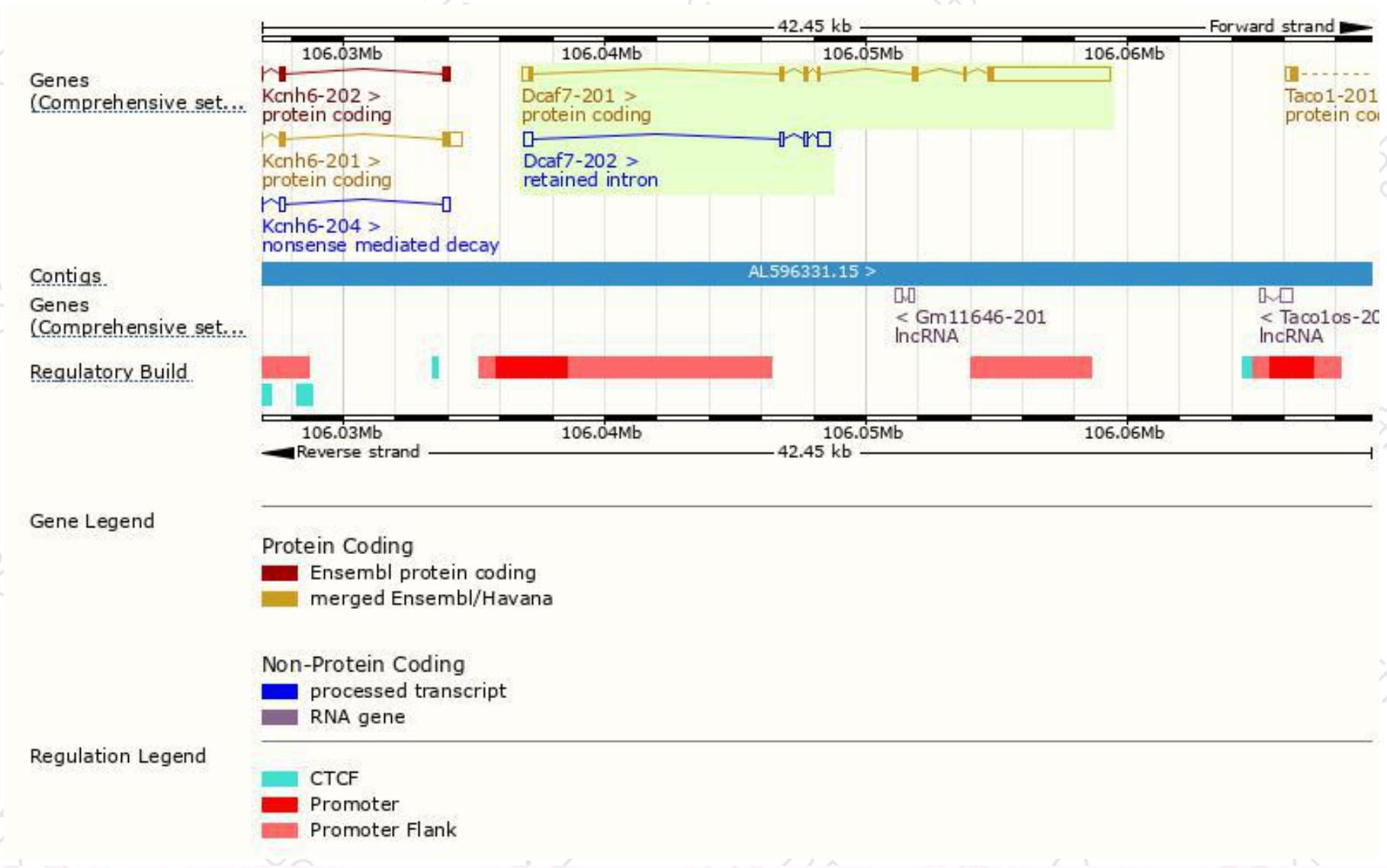
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dcaf7-201	ENSMUST00000058438.8	5750	342aa	Protein coding	CCDS25546	P61963	TSL:1 GENCODE basic APPRIS P1
Dcaf7-202	ENSMUST00000106891.1	1135	No protein	Retained intron	-	-	TSL:1

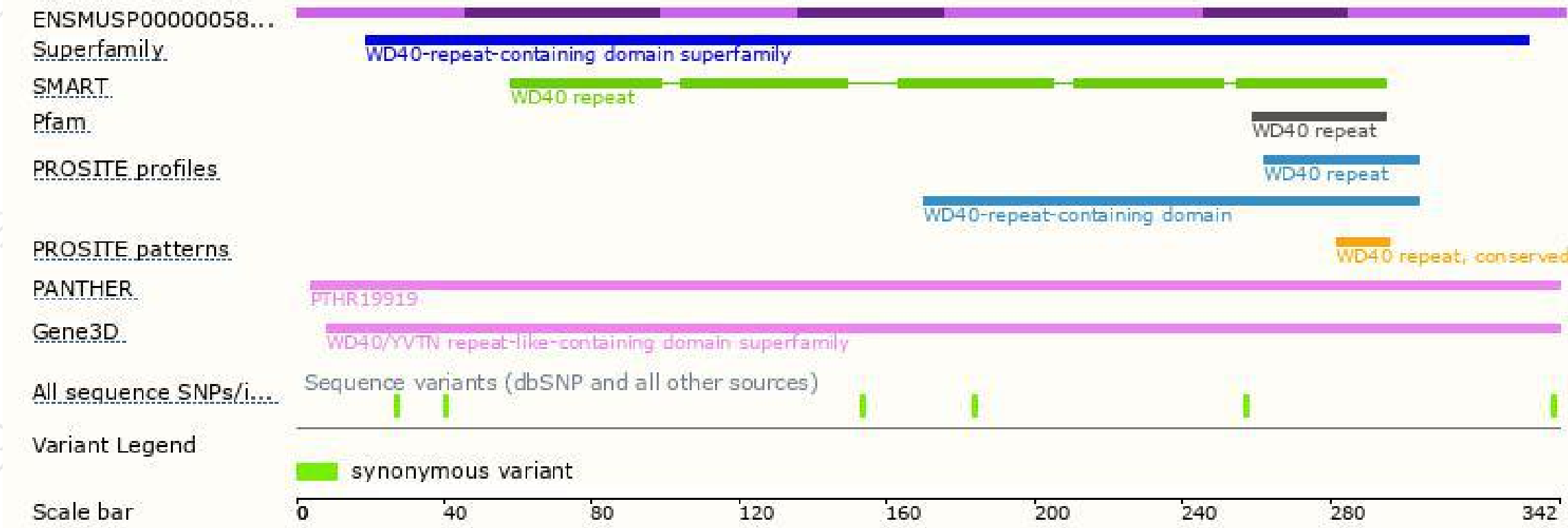
The strategy is based on the design of *Dcaf7-201* transcript,The transcription is shown below



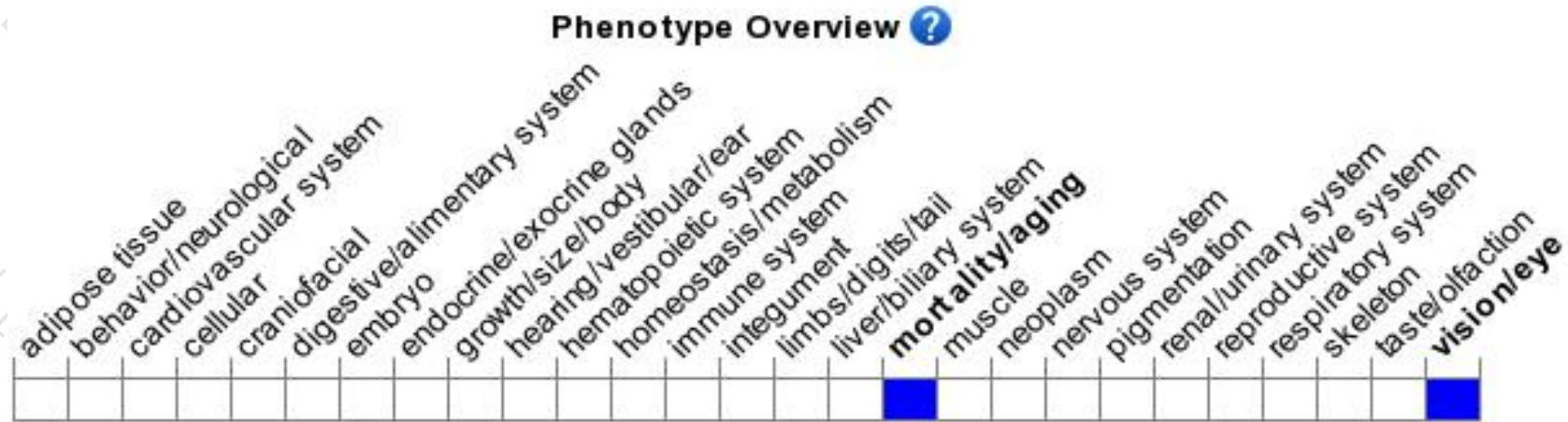
Genomic location distribution



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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