

Dcaf13 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Dcaf13

Project type

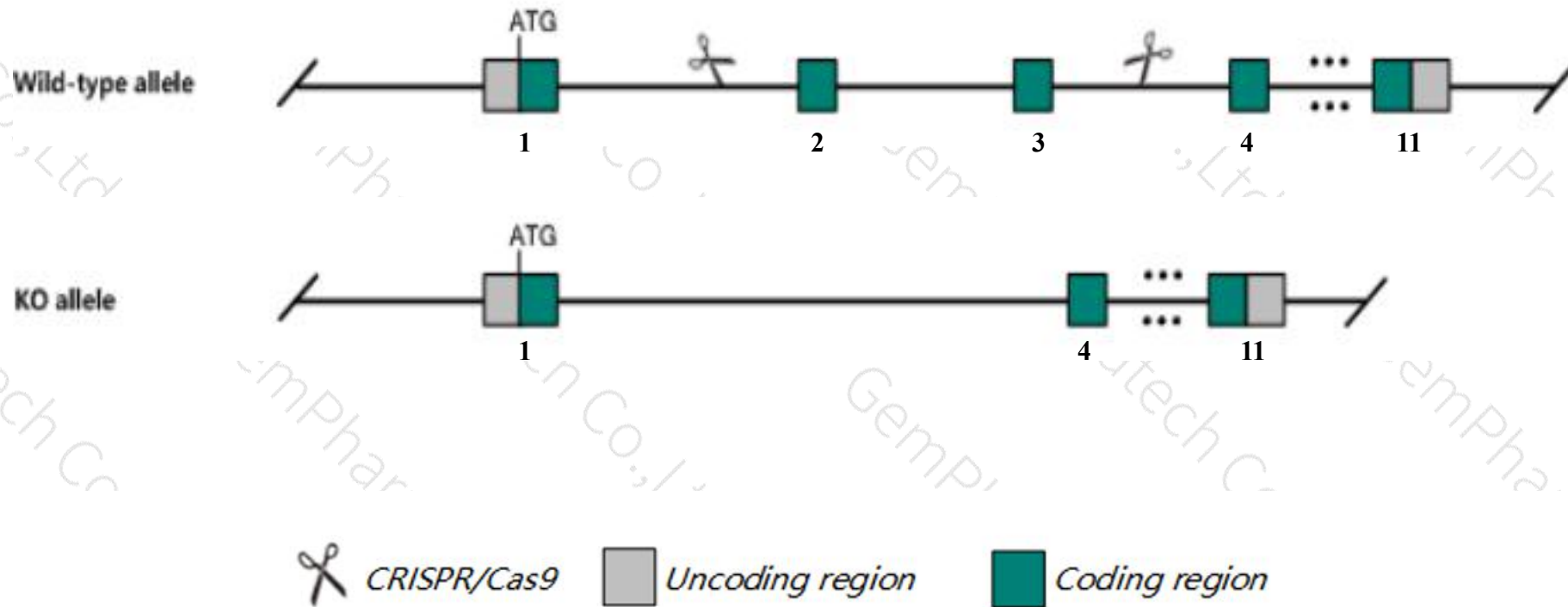
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dcaf13* gene. The schematic diagram is as follows:



- The *Dcaf13* gene has 4 transcripts. According to the structure of *Dcaf13* gene, exon2-exon3 of *Dcaf13-201* (ENSMUST00000022909.9) transcript is recommended as the knockout region. The region contains 308bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dcaf13* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit pre-implantation lethality with failure of morula compaction.
- The *Dcaf13* gene is located on the Chr15. 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)

Dcaf13 DDB1 and CUL4 associated factor 13 [Mus musculus (house mouse)]

Gene ID: 223499, updated on 31-Jan-2019

Summary



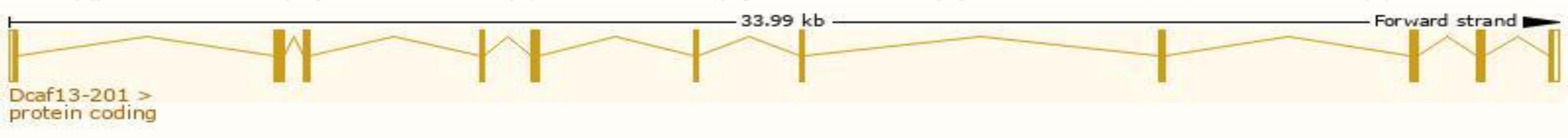
Official Symbol	Dcaf13 provided by MGI
Official Full Name	DDB1 and CUL4 associated factor 13 provided by MGI
Primary source	MGI:MGI:2684929
See related	Ensembl:ENSMUSG00000022300
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm83, Wdsof1
Expression	Broad expression in placenta adult (RPKM 20.4), CNS E11.5 (RPKM 18.9) and 21 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

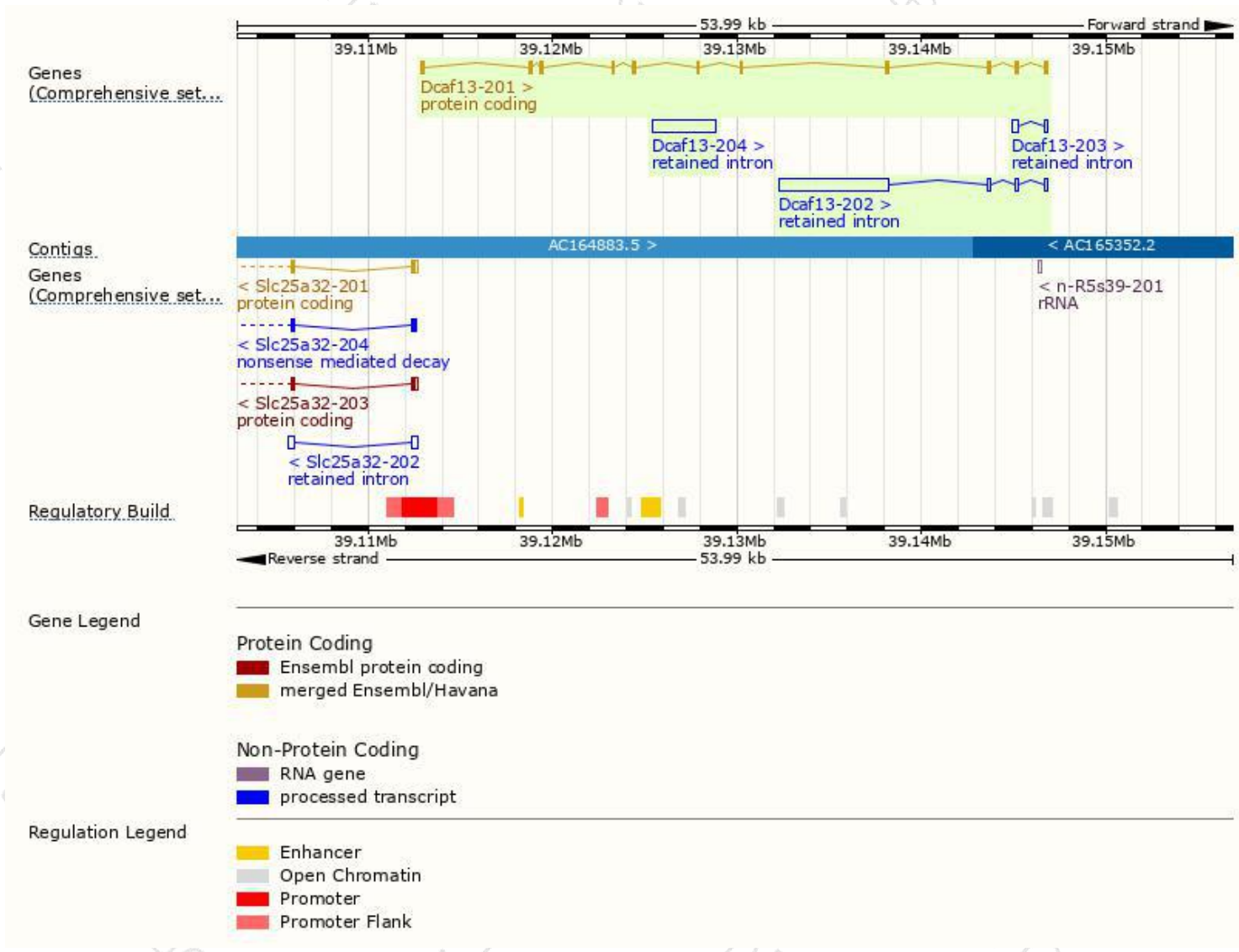
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dcaf13-201	ENSMUST00000022909.9	1551	445aa	Protein coding	CCDS37066	Q6PAC3	TSL:1 GENCODE basic APPRIS P1
Dcaf13-202	ENSMUST000000226224.1	6477	No protein	Retained intron	-	-	
Dcaf13-204	ENSMUST000000228436.1	3389	No protein	Retained intron	-	-	
Dcaf13-203	ENSMUST000000227219.1	480	No protein	Retained intron	-	-	

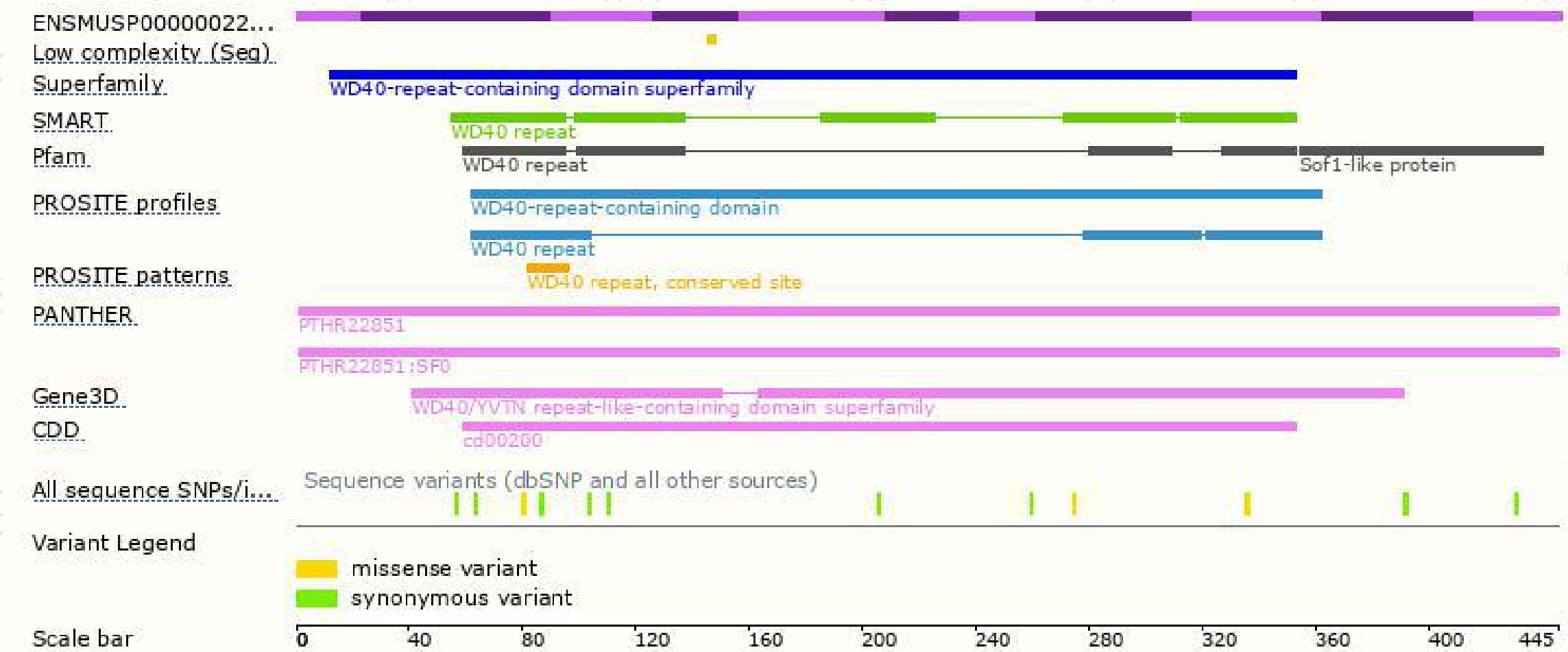
The strategy is based on the design of *Dcaf13-201* transcript,The transcription is shown below



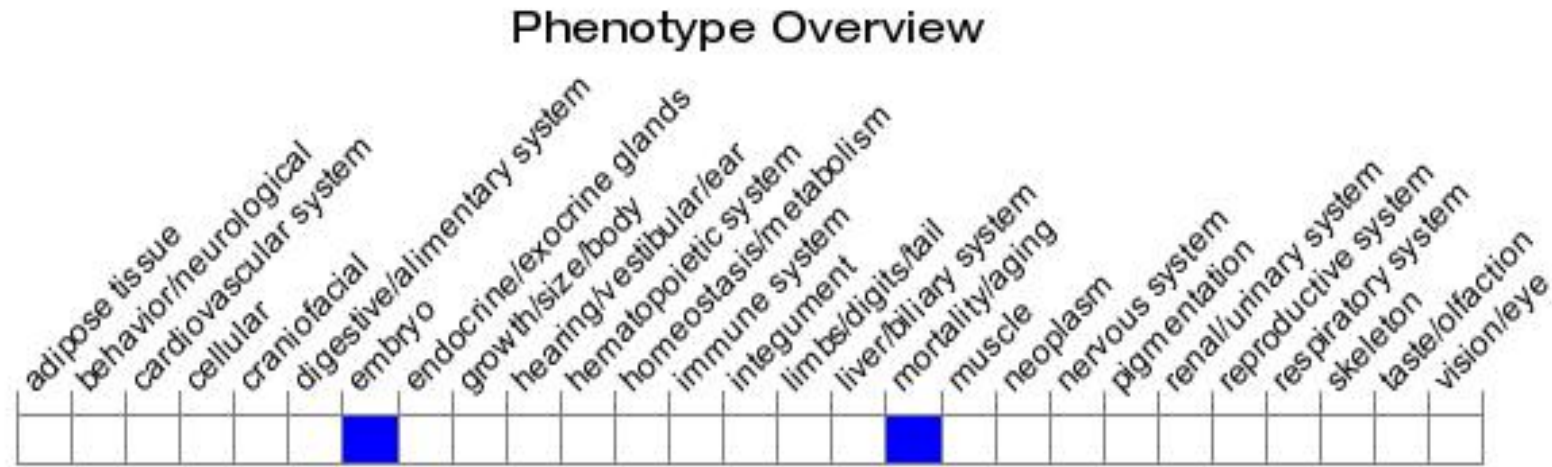
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a knock-out allele exhibit pre-implantation lethality with failure of morula compaction.

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

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