

***Dnajc13* Cas9-KO Strategy**

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Project Overview

Project Name

Dnajc13

Project type

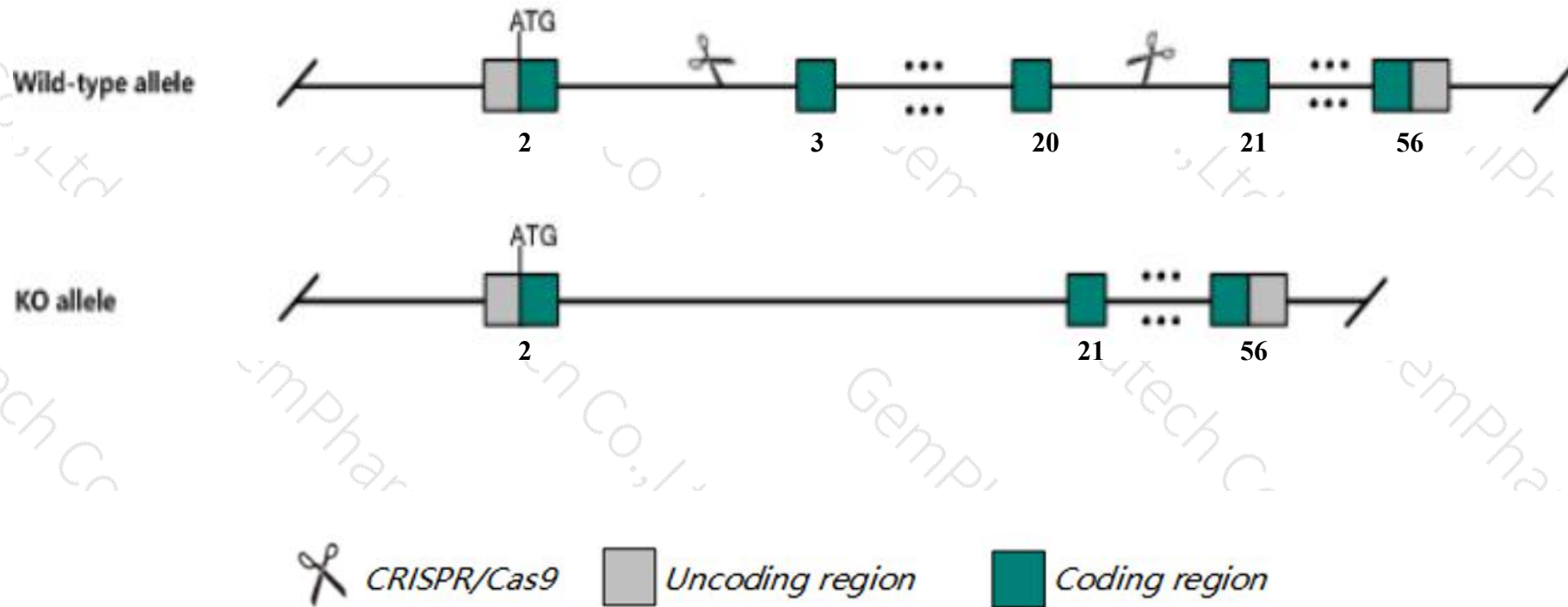
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dnajc13* gene. The schematic diagram is as follows:



- The *Dnajc13* gene has 14 transcripts. According to the structure of *Dnajc13* gene, exon3-exon20 of *Dnajc13*-201(ENSMUST00000035170.12) transcript is recommended as the knockout region. The region contains 2140bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dnajc13* 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 *Dnajc13* gene is located on the Chr9. 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)

Dnajc13 DnaJ heat shock protein family (Hsp40) member C13 [Mus musculus (house mouse)]

Gene ID: 235567, updated on 13-Mar-2020

Summary



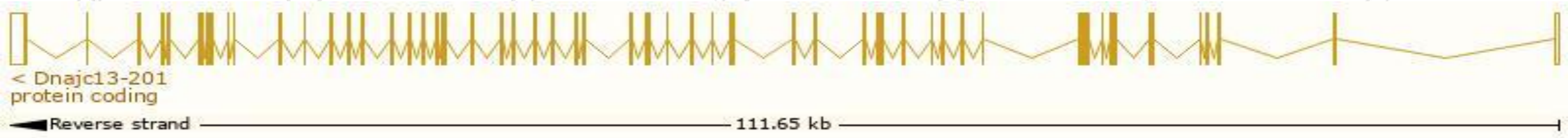
Official Symbol	Dnajc13 provided by MGI
Official Full Name	DnaJ heat shock protein family (Hsp40) member C13 provided by MGI
Primary source	MGI:MGI:2676368
See related	Ensembl:ENSMUSG00000032560
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	D030002L11Rik, Gm1124, RME-8, Rme8, mKIAA0678
Expression	Ubiquitous expression in placenta adult (RPKM 11.9), kidney adult (RPKM 9.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

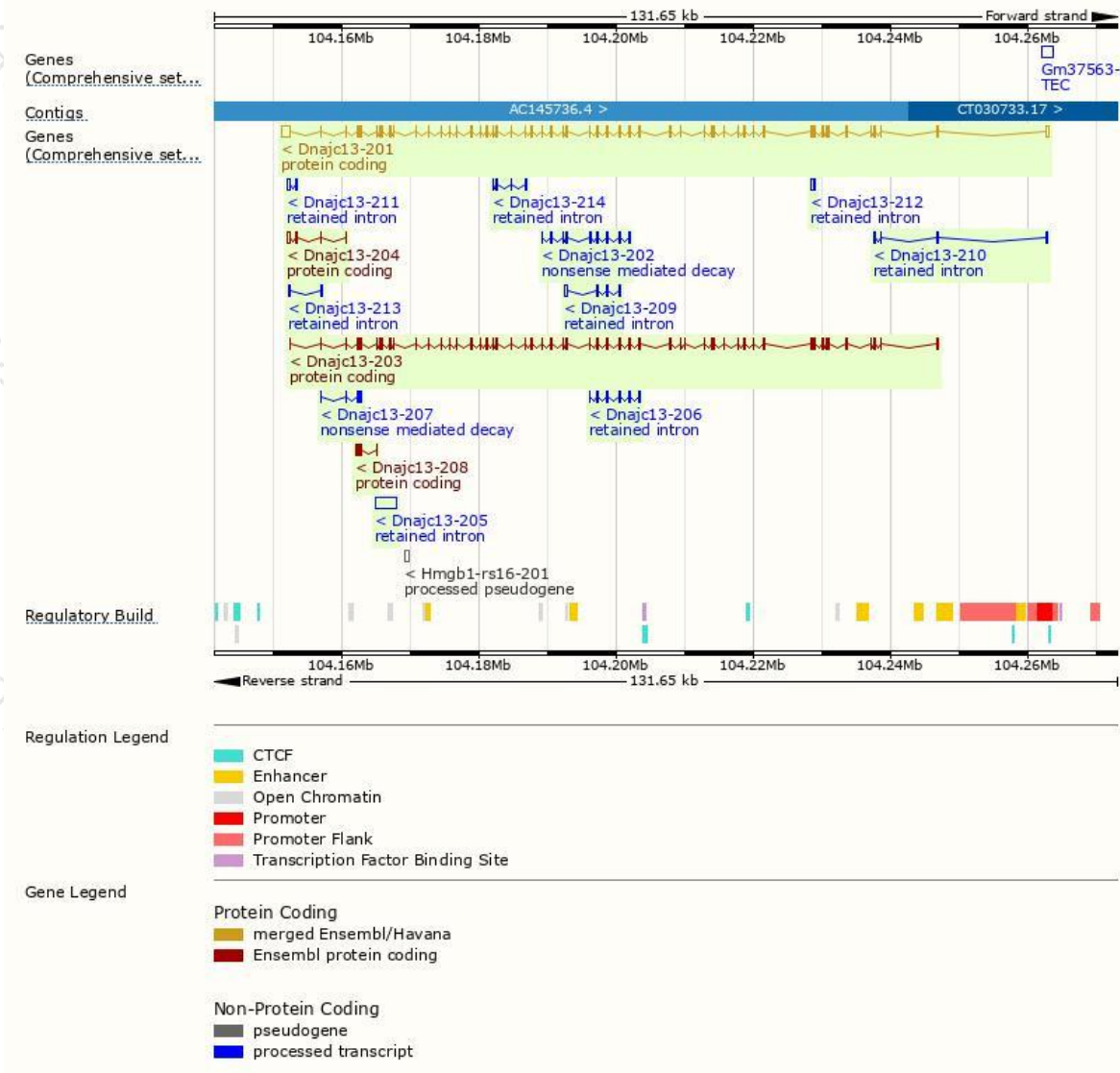
The gene has 14 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dnajc13-201	ENSMUST00000035170.12	8012	2243aa	Protein coding	CCDS52904	G3X922	TSL:5 GENCODE basic APPRIS P2
Dnajc13-203	ENSMUST000000186788.6	6747	2248aa	Protein coding	-	D4AFX7	TSL:1 GENCODE basic APPRIS ALT1
Dnajc13-204	ENSMUST000000188139.2	668	96aa	Protein coding	-	A0A1L1STR9	CDS 5' incomplete TSL:5
Dnajc13-208	ENSMUST000000188998.1	614	184aa	Protein coding	-	A0A087WS25	CDS 5' incomplete TSL:2
Dnajc13-202	ENSMUST000000185503.6	1222	174aa	Nonsense mediated decay	-	A0A087WRC9	CDS 5' incomplete TSL:5
Dnajc13-207	ENSMUST000000188885.1	492	59aa	Nonsense mediated decay	-	A0A087WSI0	CDS 5' incomplete TSL:3
Dnajc13-205	ENSMUST000000188425.1	3237	No protein	Retained intron	-	-	TSL:NA
Dnajc13-206	ENSMUST000000188592.1	734	No protein	Retained intron	-	-	TSL:5
Dnajc13-209	ENSMUST000000189103.6	641	No protein	Retained intron	-	-	TSL:2
Dnajc13-214	ENSMUST000000191199.1	615	No protein	Retained intron	-	-	TSL:5
Dnajc13-211	ENSMUST000000189813.1	601	No protein	Retained intron	-	-	TSL:3
Dnajc13-210	ENSMUST000000189299.1	568	No protein	Retained intron	-	-	TSL:2
Dnajc13-212	ENSMUST000000190600.1	526	No protein	Retained intron	-	-	TSL:2
Dnajc13-213	ENSMUST000000190926.1	453	No protein	Retained intron	-	-	TSL:2

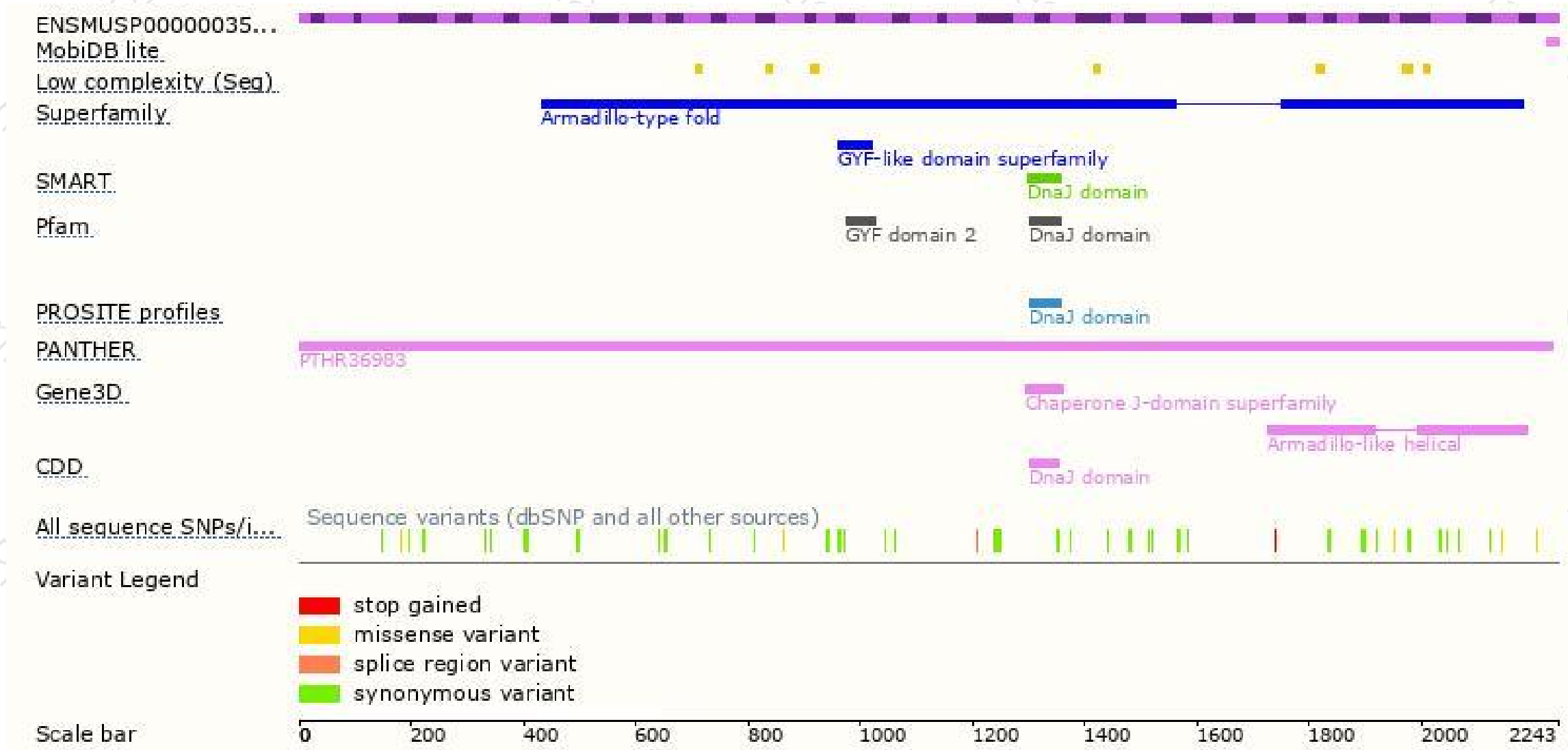
The strategy is based on the design of *Dnajc13-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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