

# ***Dnajc1*** Cas9-KO Strategy

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**Reviewer:**

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# Project Overview

**Project Name**

***Dnajc1***

**Project type**

**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dnajc1* gene. The schematic diagram is as follows:



- The *Dnajc1* gene has 11 transcripts. According to the structure of *Dnajc1* gene, exon2-exon3 of *Dnajc1*-209 (ENSMUST00000166495.7) transcript is recommended as the knockout region. The region contains 149bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dnajc1* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Dnajc1* gene is located on the Chr2. 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 transcript *Dnajc1-210*(incomplete) may not be affect.
- 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)

## Dnajc1 DnaJ heat shock protein family (Hsp40) member C1 [ *Mus musculus* (house mouse) ]

Gene ID: 13418, updated on 12-Aug-2019

### Summary

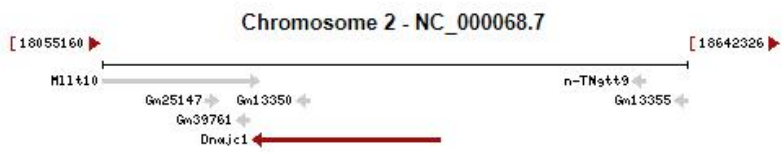
- Official Symbol** Dnajc1 provided by [MGI](#)
- Official Full Name** DnaJ heat shock protein family (Hsp40) member C1 provided by [MGI](#)
- Primary source** [MGI:MGI:103268](#)
- See related** [Ensembl:ENSMUSG00000026740](#)
- Gene type** protein coding
- RefSeq status** VALIDATED
- Organism** [Mus musculus](#)
- Lineage** Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
- Also known as** MTJ1; ERdj1; ERj1p; Dnajl1; AA960110; 4733401K02Rik; D230036H06Rik
- Expression** Ubiquitous expression in testis adult (RPKM 10.4), thymus adult (RPKM 9.4) and 28 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

### Genomic context

**Location:** 2; 2 A3 [See Dnajc1 in Genome Data Viewer](#)

**Exon count:** 13

Annotation release	Status	Assembly	Chr	Location
<a href="#">108</a>	current	GRCm38.p6 ( <a href="#">GCF_000001635.26</a> )	2	NC_000068.7 (18205634..18394099, complement)
Build 37.2	previous assembly	MGSCv37 ( <a href="#">GCF_000001635.18</a> )	2	NC_000068.6 (18138762..18314134, complement)

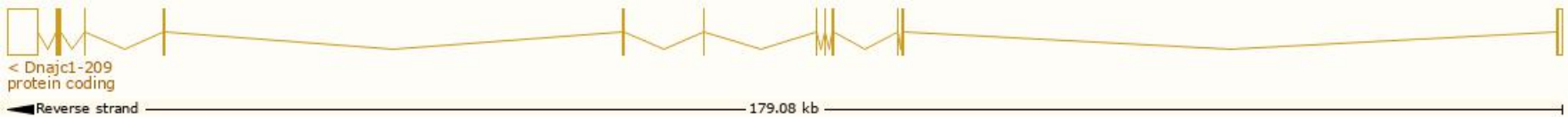


# Transcript information (Ensembl)

The gene has 11 transcripts,all transcripts are shown below:

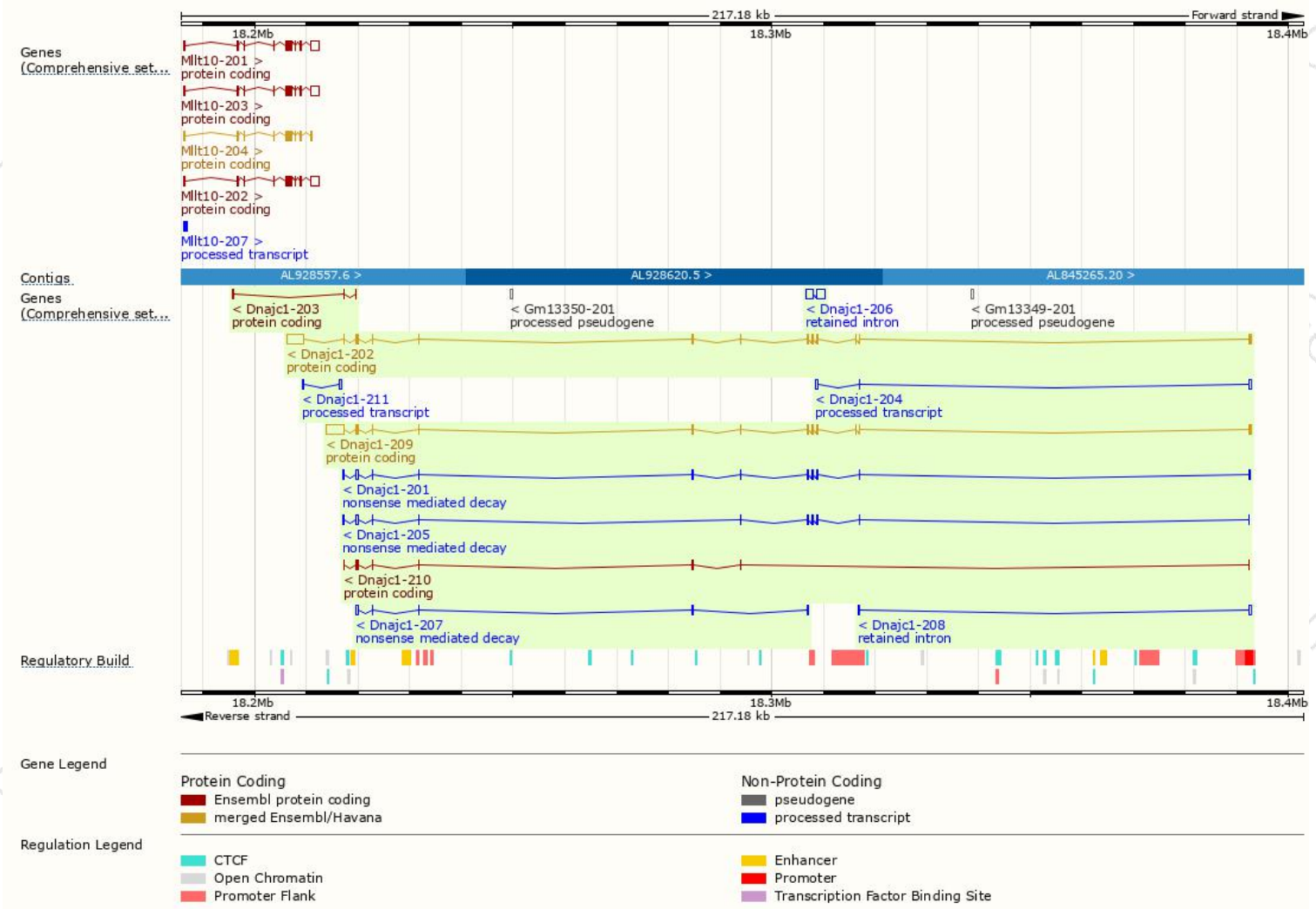
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dnajc1-209	<a href="#">ENSMUST00000166495.7</a>	5497	<a href="#">552aa</a>	Protein coding	<a href="#">CCDS15709</a>	<a href="#">Q61712</a>	TSL:1 GENCODE basic APPRIS P1
Dnajc1-202	<a href="#">ENSMUST00000091418.11</a>	5070	<a href="#">552aa</a>	Protein coding	<a href="#">CCDS15709</a>	<a href="#">Q61712</a>	TSL:1 GENCODE basic APPRIS P1
Dnajc1-210	<a href="#">ENSMUST00000168723.1</a>	1175	<a href="#">357aa</a>	Protein coding	-	<a href="#">F6ZL86</a>	CDS 5' incomplete TSL:5
Dnajc1-203	<a href="#">ENSMUST00000148401.7</a>	456	<a href="#">58aa</a>	Protein coding	-	<a href="#">F6WEH1</a>	CDS 5' incomplete TSL:3
Dnajc1-201	<a href="#">ENSMUST00000028072.12</a>	1876	<a href="#">105aa</a>	Nonsense mediated decay	-	<a href="#">F8WH68</a>	TSL:5
Dnajc1-205	<a href="#">ENSMUST00000163130.7</a>	1490	<a href="#">79aa</a>	Nonsense mediated decay	-	<a href="#">F6YK70</a>	CDS 5' incomplete TSL:5
Dnajc1-207	<a href="#">ENSMUST00000164835.1</a>	746	<a href="#">34aa</a>	Nonsense mediated decay	-	<a href="#">F7C8U2</a>	CDS 5' incomplete TSL:3
Dnajc1-204	<a href="#">ENSMUST00000153055.2</a>	1001	No protein	Processed transcript	-	-	TSL:1
Dnajc1-211	<a href="#">ENSMUST00000172210.1</a>	720	No protein	Processed transcript	-	-	TSL:3
Dnajc1-206	<a href="#">ENSMUST00000164606.1</a>	2850	No protein	Retained intron	-	-	TSL:1
Dnajc1-208	<a href="#">ENSMUST00000165793.1</a>	749	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Dnajc1-209* transcript, the transcription is shown below:



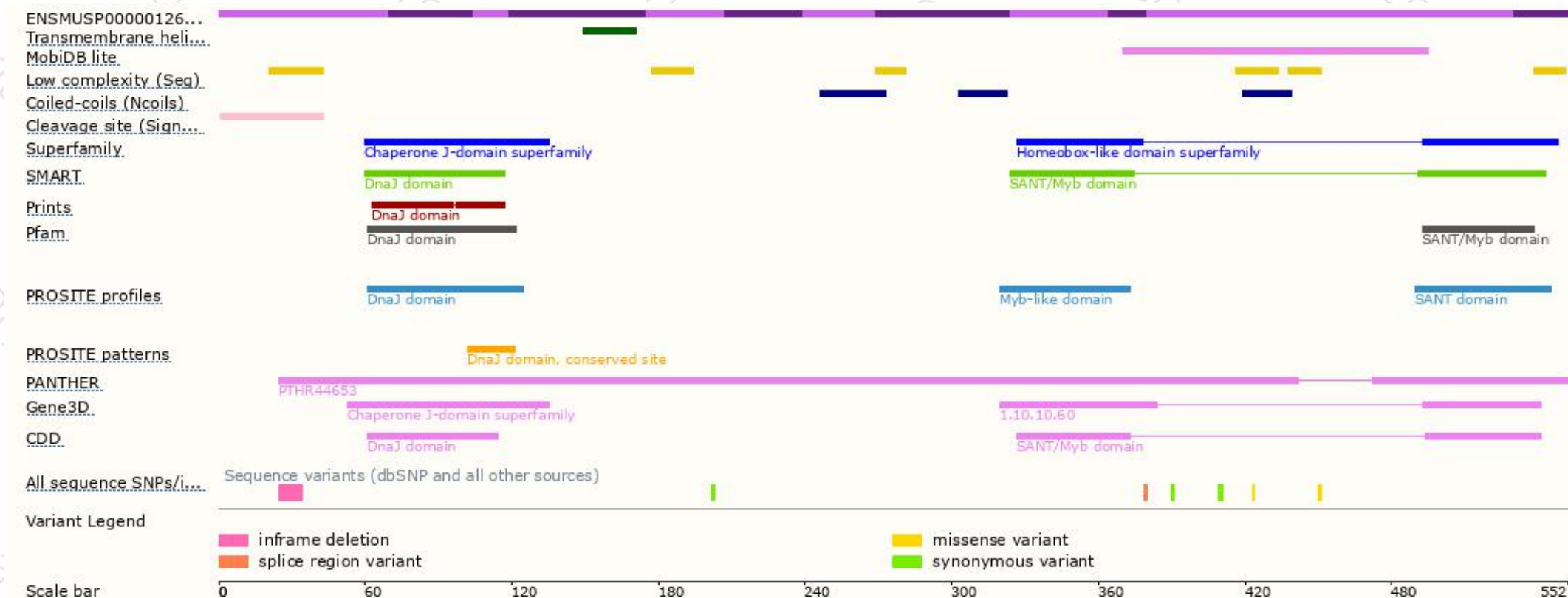


# Genomic location distribution





# Protein domain



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

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