

# ***Dnajc25 Cas9-KO Strategy***

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**Reviewer: Zihe Cui**

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# Project Overview

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**Project Name**

***Dnajc25***

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**Project type**

**Cas9-KO**

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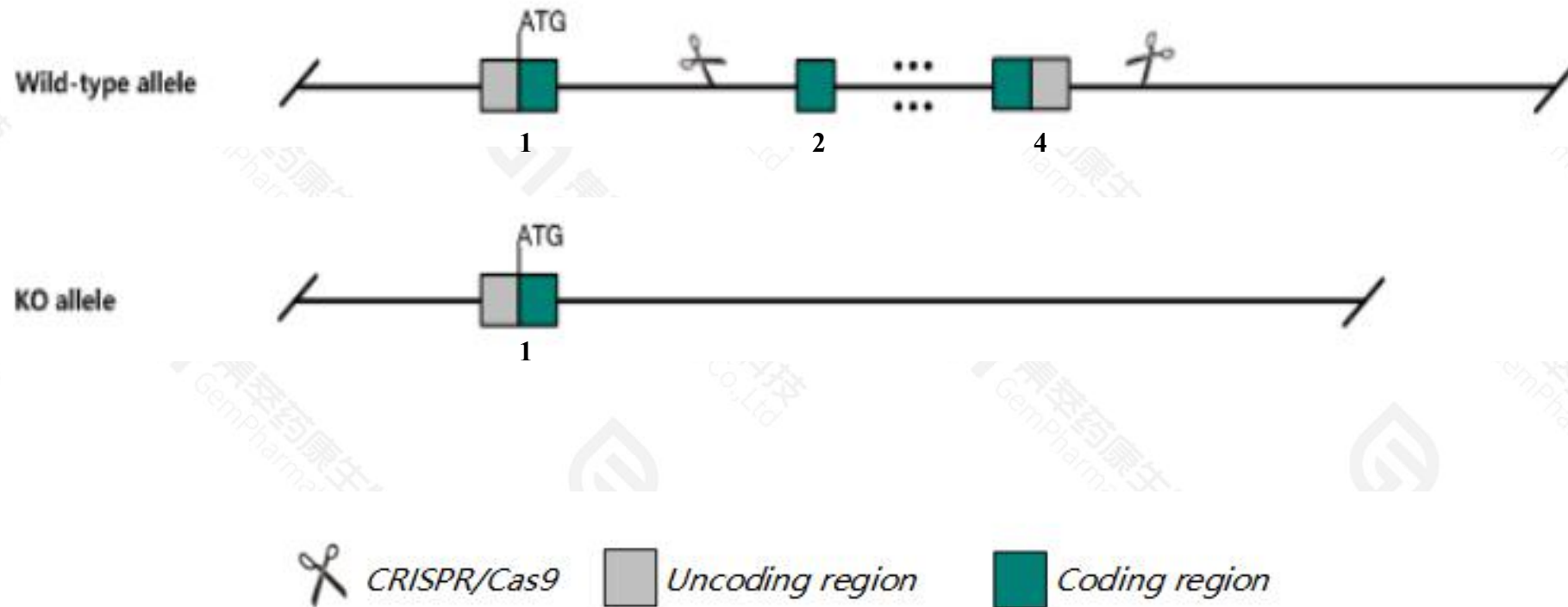
**Strain background**

**C57BL/6JGpt**

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# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dnajc25* gene. The schematic diagram is as follows:



- The *Dnajc25* gene has 5 transcripts. According to the structure of *Dnajc25* gene, exon2-exon4 of *Dnajc25-201*(ENSMUST00000095070.4) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dnajc25* 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.



- Deletion of exon2-exon4 does not cause *Dnajc25* gene frame-shift mutation, but most of the coding region is deleted.
- The deletion region is located in the intron of *Gm20503* gene and may affect the function of *Gm20503* gene.
- The *Dnajc25* 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.

## Dnajc25 DnaJ heat shock protein family (Hsp40) member C25 [Mus musculus (house mouse)]

Gene ID: 72429, updated on 26-Sep-2020

### Summary



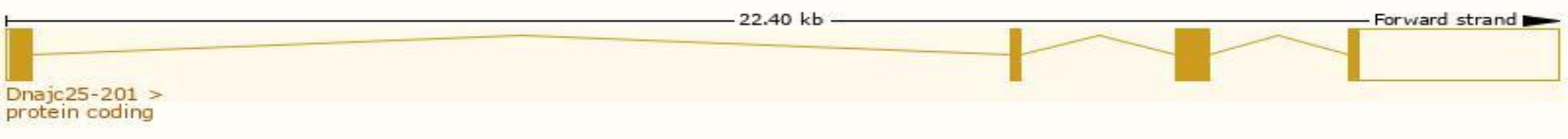
<b>Official Symbol</b>	Dnajc25 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	DnaJ heat shock protein family (Hsp40) member C25 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1919679</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000070972</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	2010109C08Rik, 2010203O07Rik
<b>Expression</b>	Ubiquitous expression in ovary adult (RPKM 8.6), adrenal adult (RPKM 6.2) and 28 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

The gene has 5 transcripts,all transcripts are shown below:

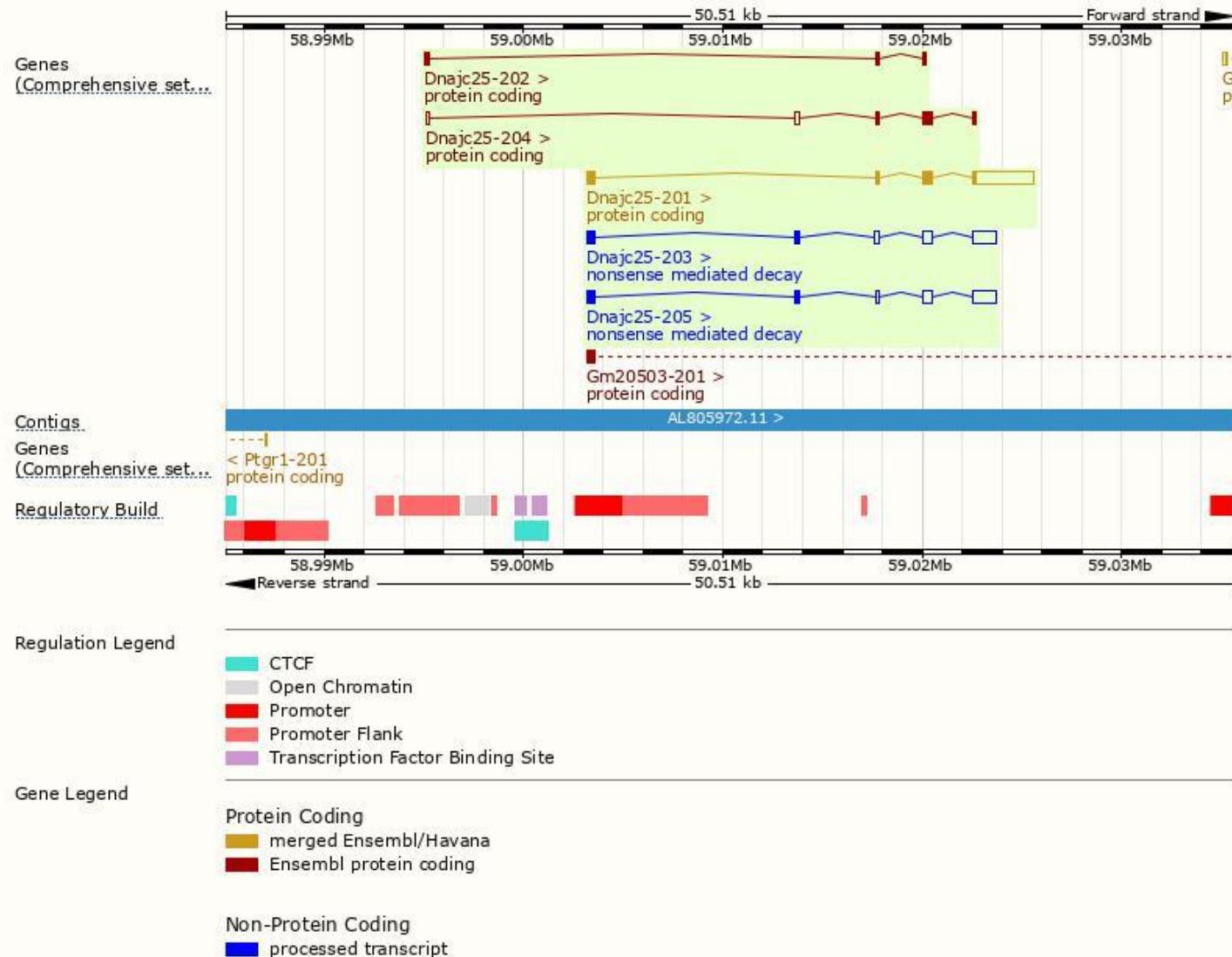
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dnajc25-201	<a href="#">ENSMUST00000095070.4</a>	4023	<a href="#">357aa</a>	Protein coding	<a href="#">CCDS18216</a>		TSL:1 , GENCODE basic , APPRIS P1 ,
Dnajc25-204	<a href="#">ENSMUST00000152199.9</a>	1141	<a href="#">238aa</a>	Protein coding	-		TSL:5 , GENCODE basic ,
Dnajc25-202	<a href="#">ENSMUST00000148366.8</a>	385	<a href="#">79aa</a>	Protein coding	-		CDS 3' incomplete , TSL:1 ,
Dnajc25-203	<a href="#">ENSMUST00000150309.9</a>	2485	<a href="#">159aa</a>	Nonsense mediated decay	-		TSL:5 ,
Dnajc25-205	<a href="#">ENSMUST00000153467.3</a>	2393	<a href="#">152aa</a>	Nonsense mediated decay	-		TSL:5 ,

The strategy is based on the design of *Dnajc25-201* transcript,the transcription is shown below:



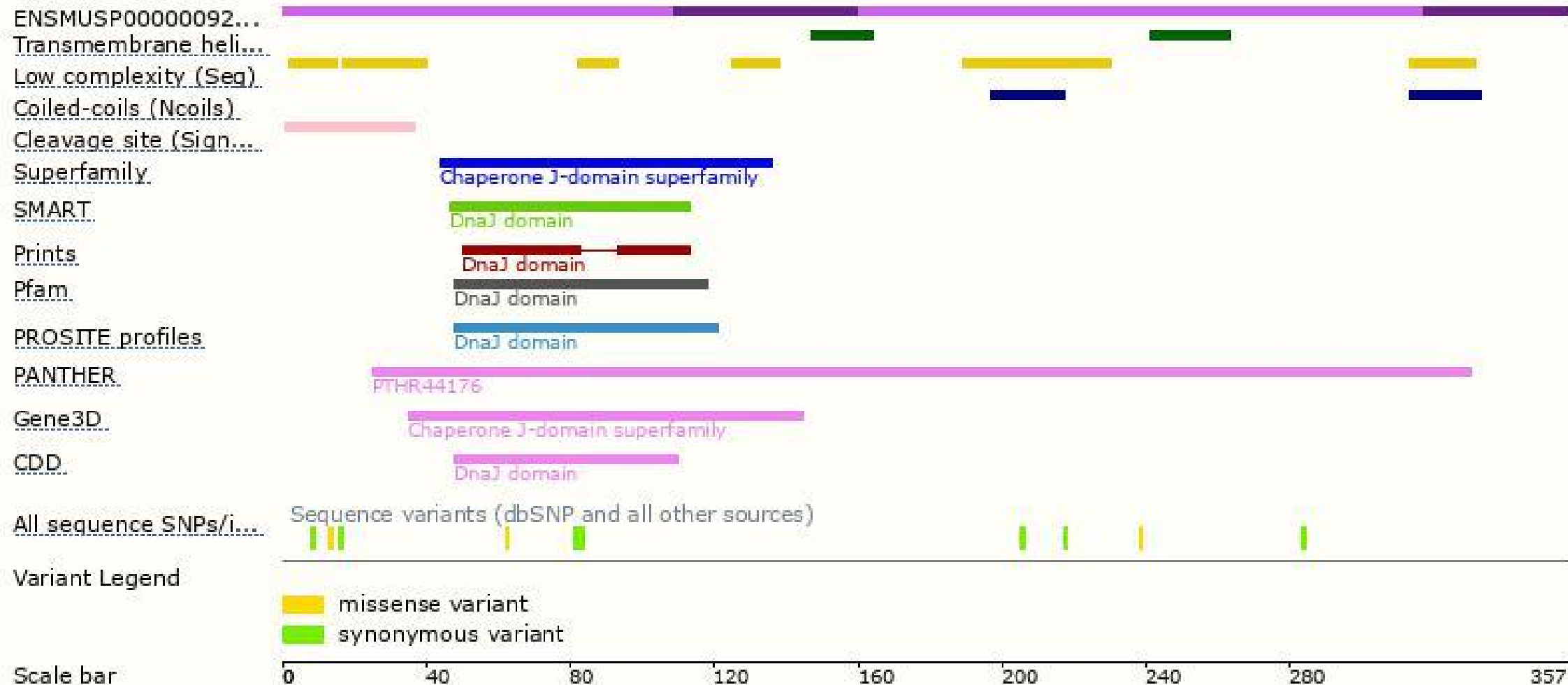


# Genomic location distribution





# Protein domain



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