

Dnaja4 Cas9-CKO Strategy

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Project Overview

Project Name

Dnaja4

Project type

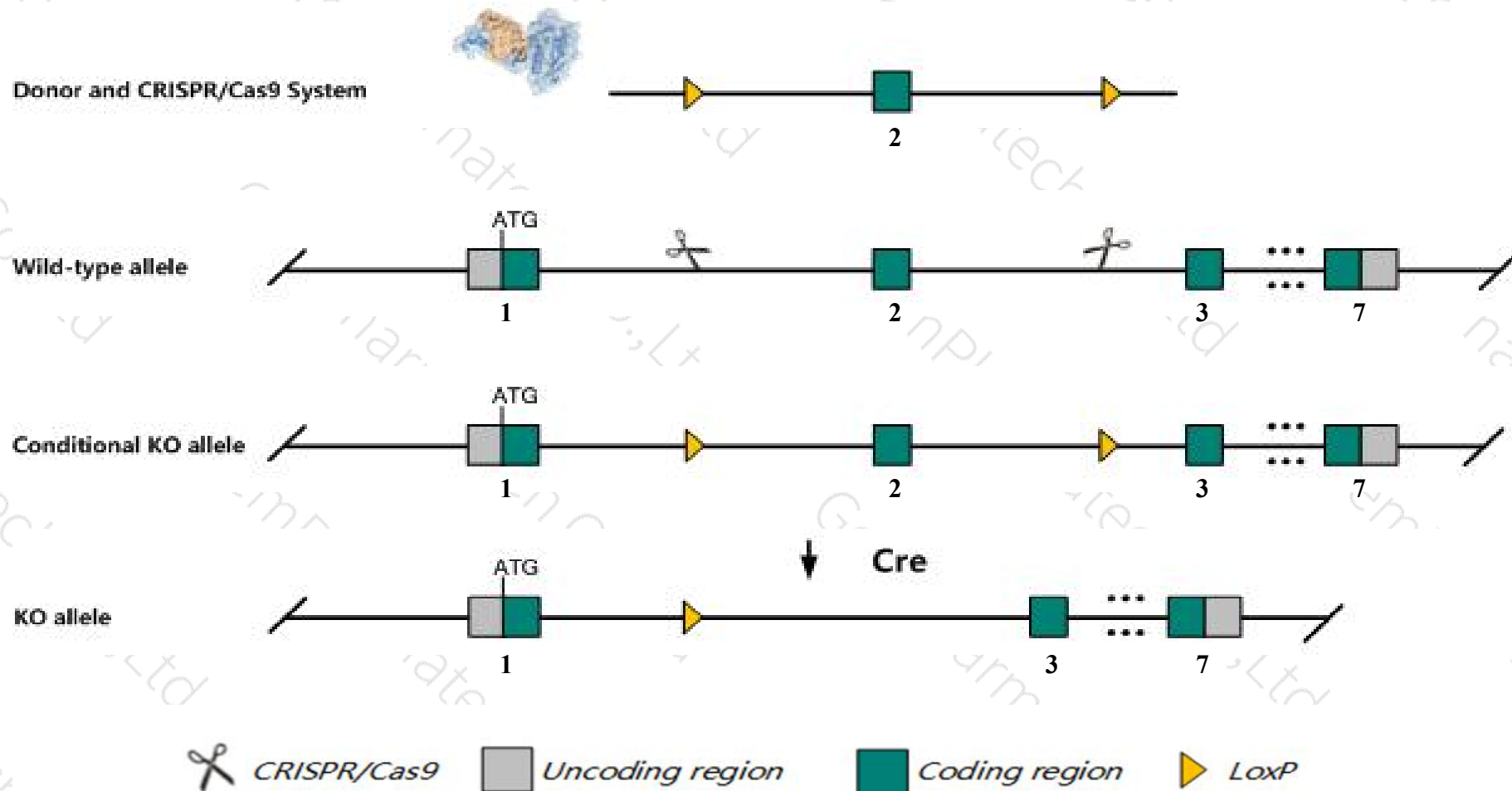
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dnaja4* gene. The schematic diagram is as follows:



- The *Dnaja4* gene has 3 transcripts. According to the structure of *Dnaja4* gene, exon2 of *Dnaja4-201* (ENSMUST00000070070.7) transcript is recommended as the knockout region. The region contains 181bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dnaja4* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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 flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The floxed region is near to the N-terminal of *Mir5710* gene, this strategy may influence the regulatory function of the N-terminal of *Mir5710* gene.
- The *Dnaja4* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Dnaja4 DnaJ heat shock protein family (Hsp40) member A4 [*Mus musculus* (house mouse)]

Gene ID: 58233, updated on 14-Aug-2019

Summary

- Official Symbol

Dnaja4 provided by MGI
- Official Full Name

DnaJ heat shock protein family (Hsp40) member A4 provided by MGI
- Primary source

MGI:MGI:1927638
- See related

Ensembl:ENSMUSG00000032285
- 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

Dj4; Hsj4; mmDjA4; AV358213; 1110021L12Rik
- Expression

Broad expression in testis adult (RPKM 35.2), heart adult (RPKM 15.3) and 20 other tissues [See more](#)
- Orthologs

[human](#) [all](#)

Genomic context

Location: 9; 9 A5.3

See Dnaja4 in [Genome Data Viewer](#)

Exon count: 8

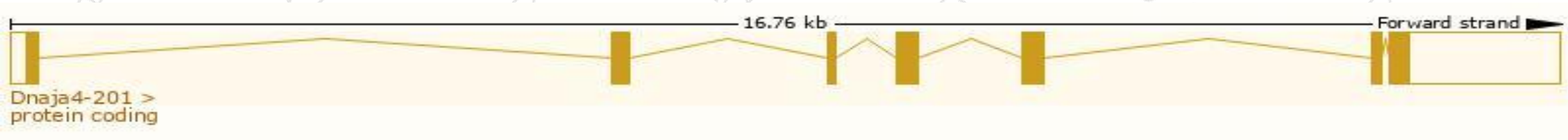
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	9	NC_000075.6 (54698848..54716317)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	9	NC_000075.5 (54547366..54564119)

Transcript information (Ensembl)

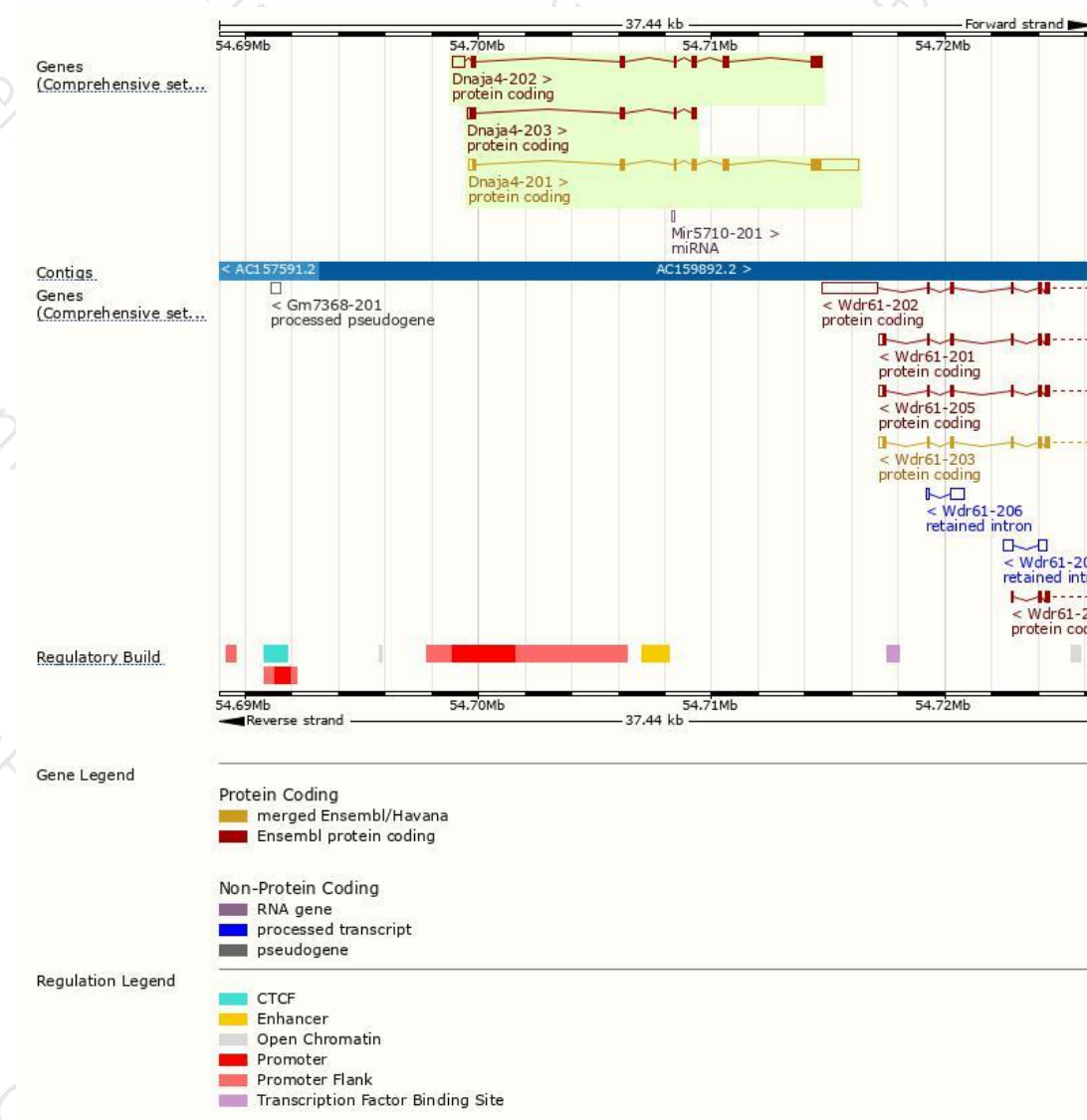
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dnaja4-201	ENSMUST00000070070.7	3003	397aa	Protein coding	CCDS23193	Q9JMC3	TSL:1 GENCODE basic APPRIS P1
Dnaja4-202	ENSMUST00000120452.7	1827	397aa	Protein coding	CCDS23193	Q9JMC3	TSL:1 GENCODE basic APPRIS P1
Dnaja4-203	ENSMUST00000154690.7	756	207aa	Protein coding	-	D3Z1U5	CDS 3' incomplete TSL:5

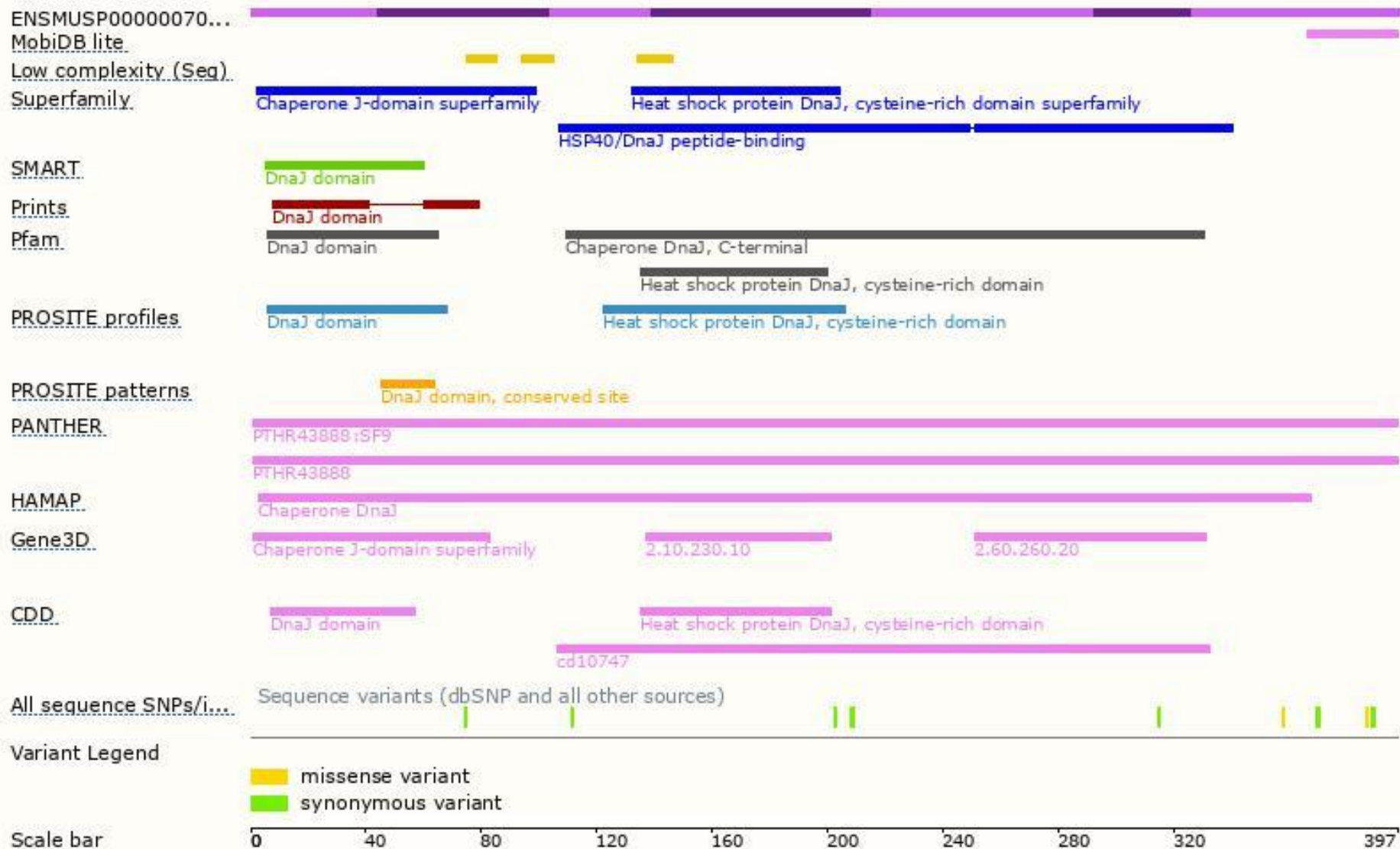
The strategy is based on the design of *Dnaja4-201* transcript,The transcription is shown below



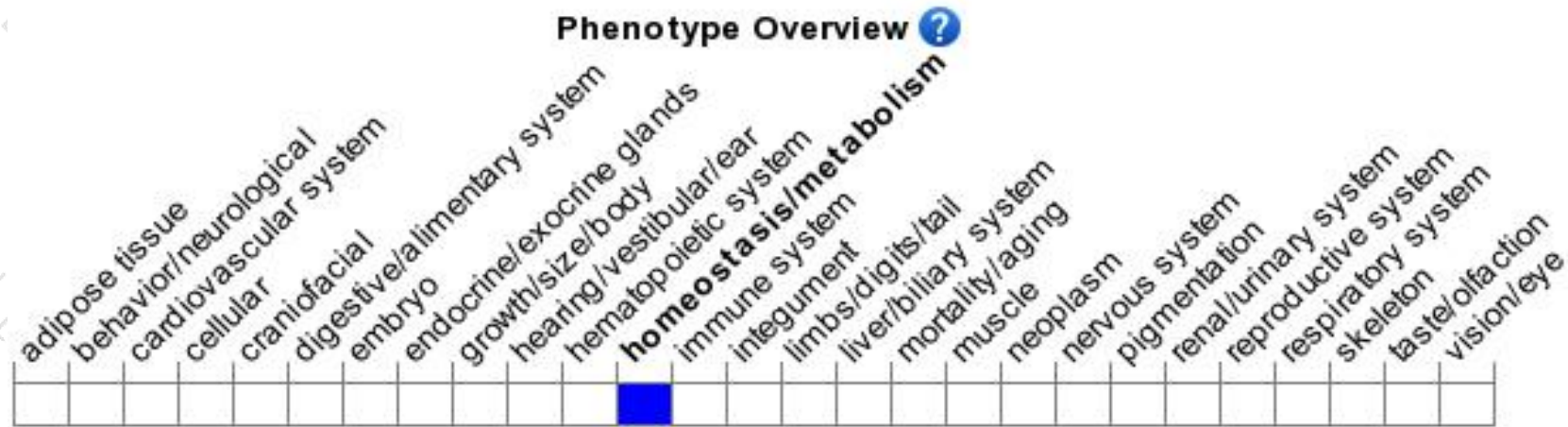
Genomic location distribution



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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