

Pabpc1l Cas9-KO Strategy

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Project Overview

Project Name

Pabpc11

Project type

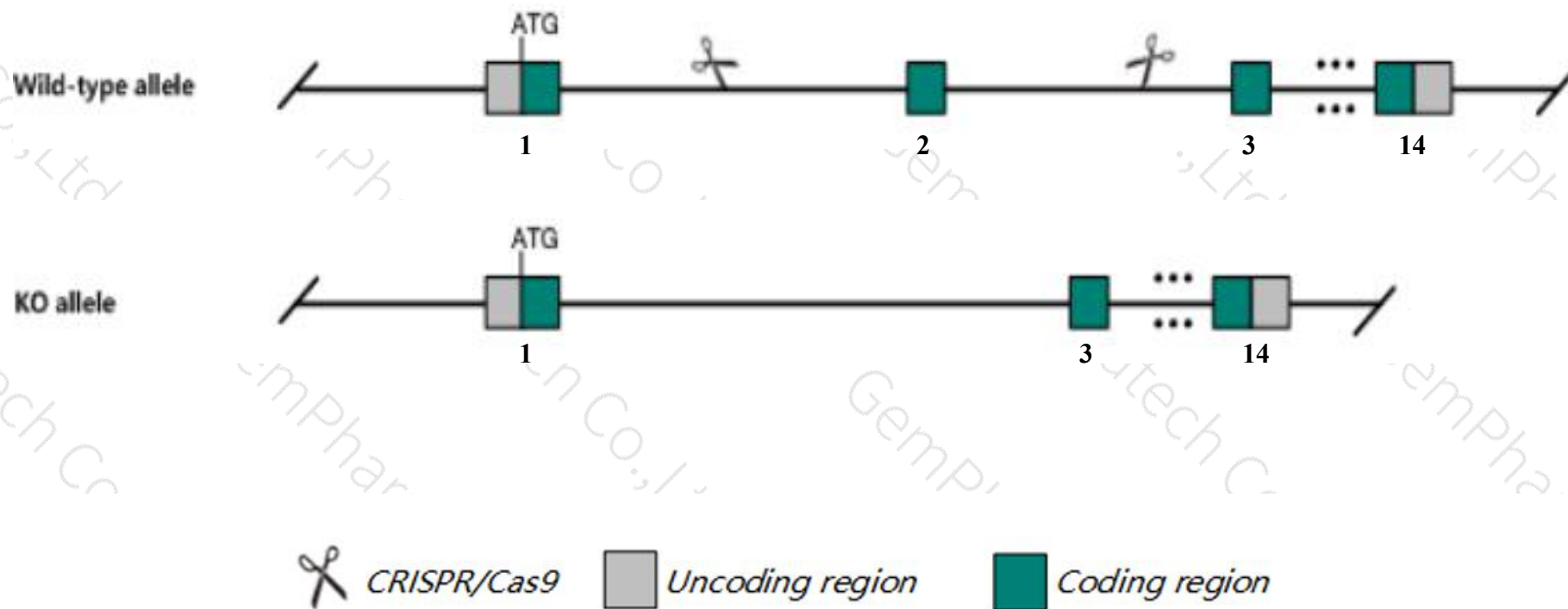
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pabpc11* gene. The schematic diagram is as follows:



- The *Pabpc11* gene has 5 transcripts. According to the structure of *Pabpc11* gene, exon2 of *Pabpc11-201*(ENSMUST00000067715.4) transcript is recommended as the knockout region. The region contains 194bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pabpc11* 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.

- According to the existing MGI data, mice homozygous for a knock-out allele exhibit impaired oocyte maturation and female infertility.
- The *Pabpc11* 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.
- 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)

Pabpc1l poly(A) binding protein, cytoplasmic 1-like [Mus musculus (house mouse)]

Gene ID: 381404, updated on 13-Mar-2020

Summary



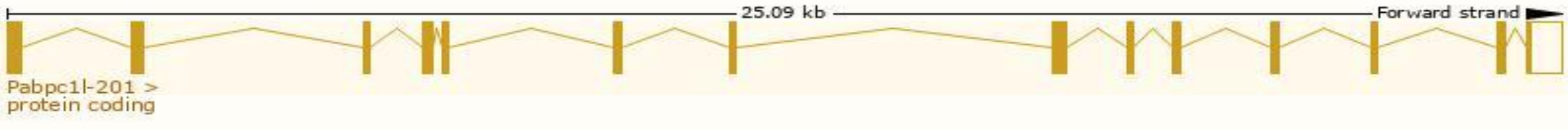
Official Symbol	Pabpc1l provided by MGI
Official Full Name	poly(A) binding protein, cytoplasmic 1-like provided by MGI
Primary source	MGI:MGI:1922908
See related	Ensembl:ENSMUSG00000054582
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810053B01Rik, Epab
Expression	Broad expression in testis adult (RPKM 2.9), ovary adult (RPKM 2.7) and 15 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

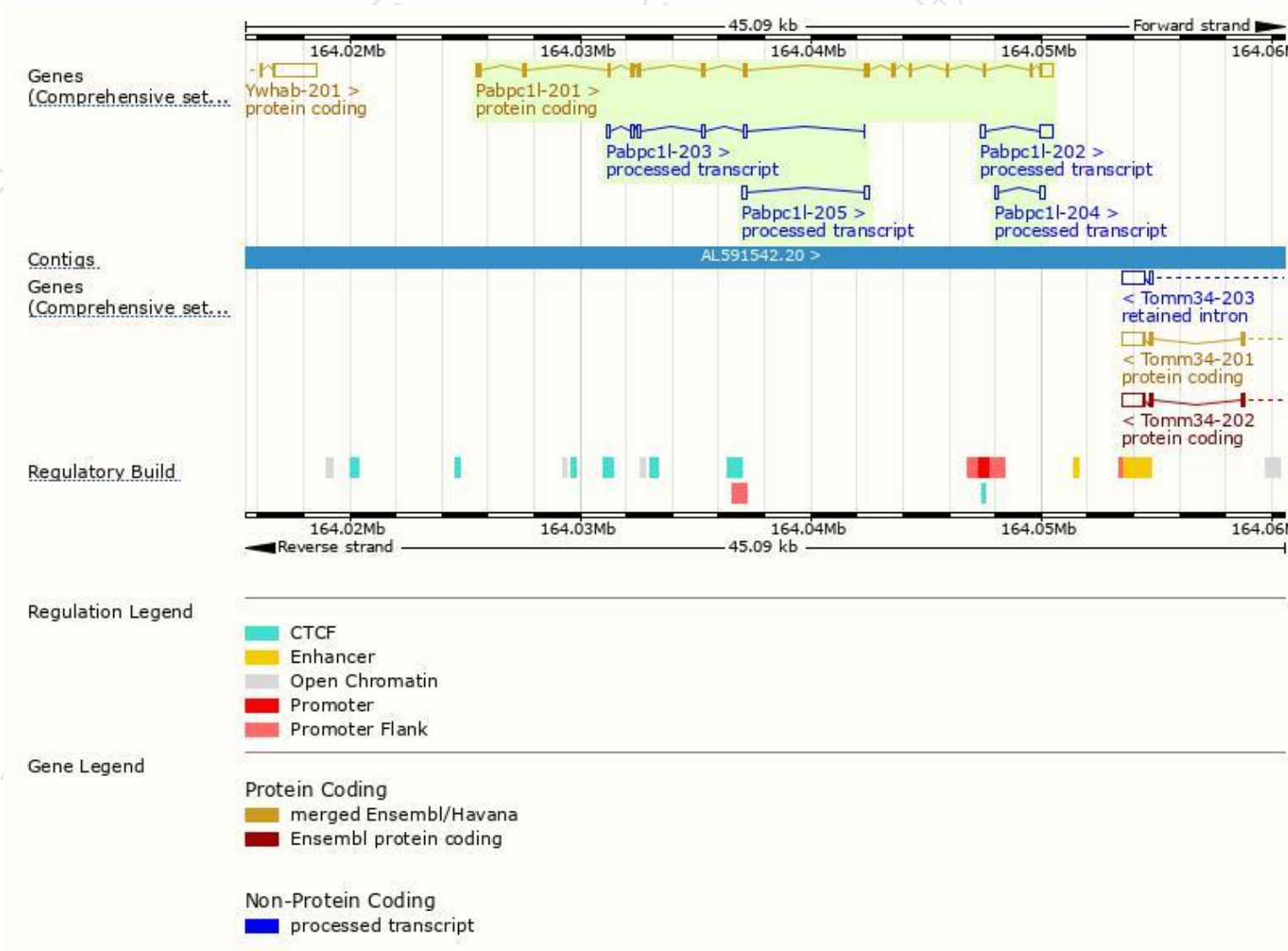
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pabpc1l-201	ENSMUST00000067715.4	2354	607aa	Protein coding	CCDS50792	A2A5N3	TSL:1 GENCODE basic APPRIS P1
Pabpc1l-202	ENSMUST00000126272.1	750	No protein	Processed transcript	-	-	TSL:1
Pabpc1l-203	ENSMUST00000141671.1	617	No protein	Processed transcript	-	-	TSL:5
Pabpc1l-205	ENSMUST00000156087.1	438	No protein	Processed transcript	-	-	TSL:2
Pabpc1l-204	ENSMUST00000150523.1	328	No protein	Processed transcript	-	-	TSL:3

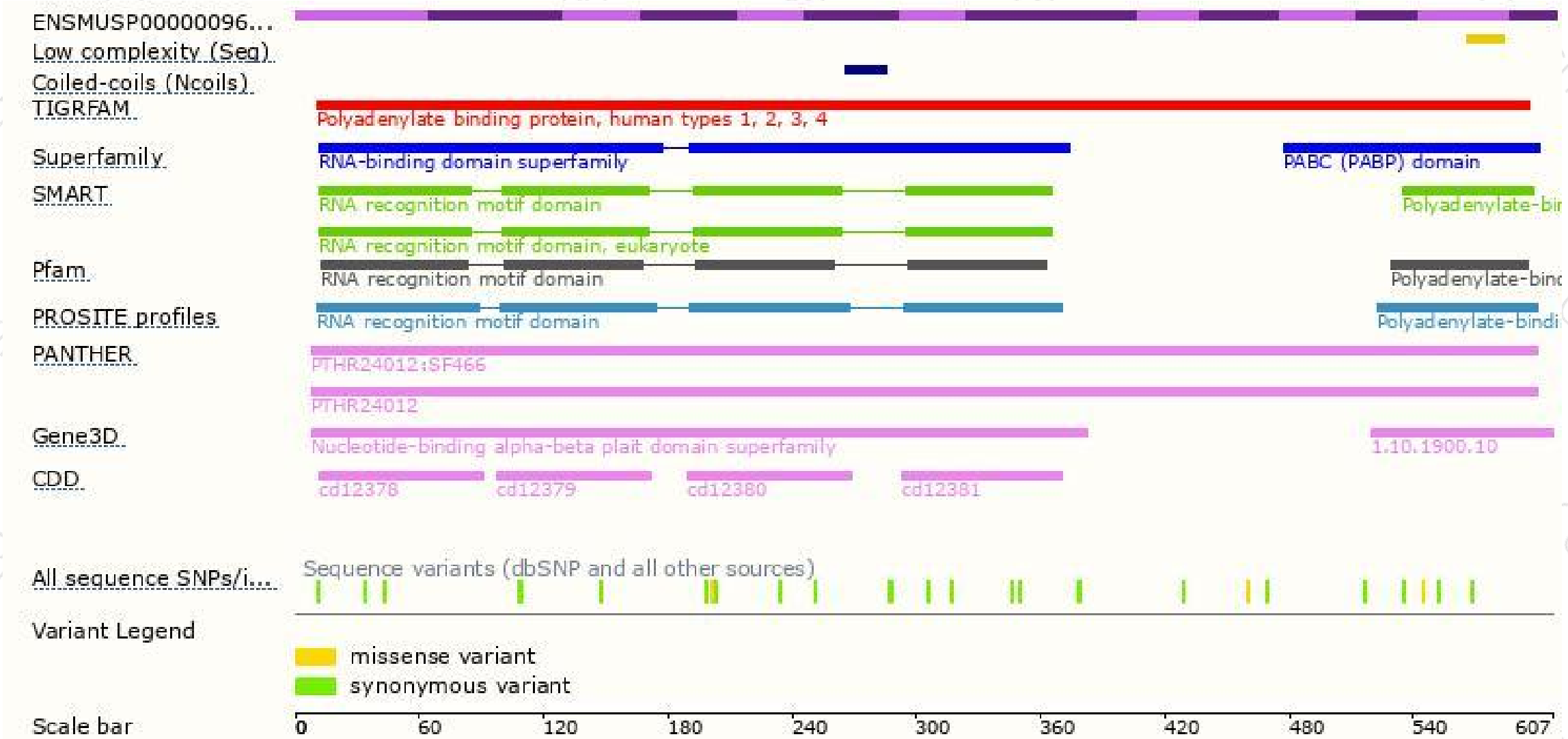
The strategy is based on the design of *Pabpc1l-201* transcript,the transcription is shown below:



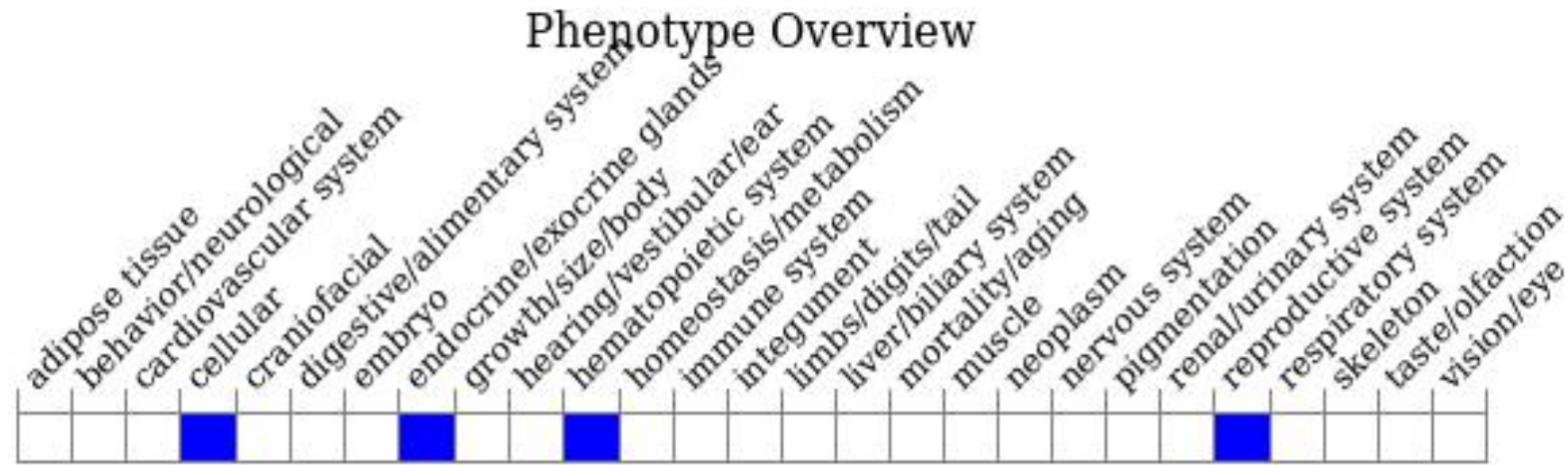
Genomic location distribution



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 impaired oocyte maturation and female infertility.

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

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