

***Wnt5b* Cas9-KO Strategy**

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Reviewer:

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Project Overview

Project Name

Wnt5b

Project type

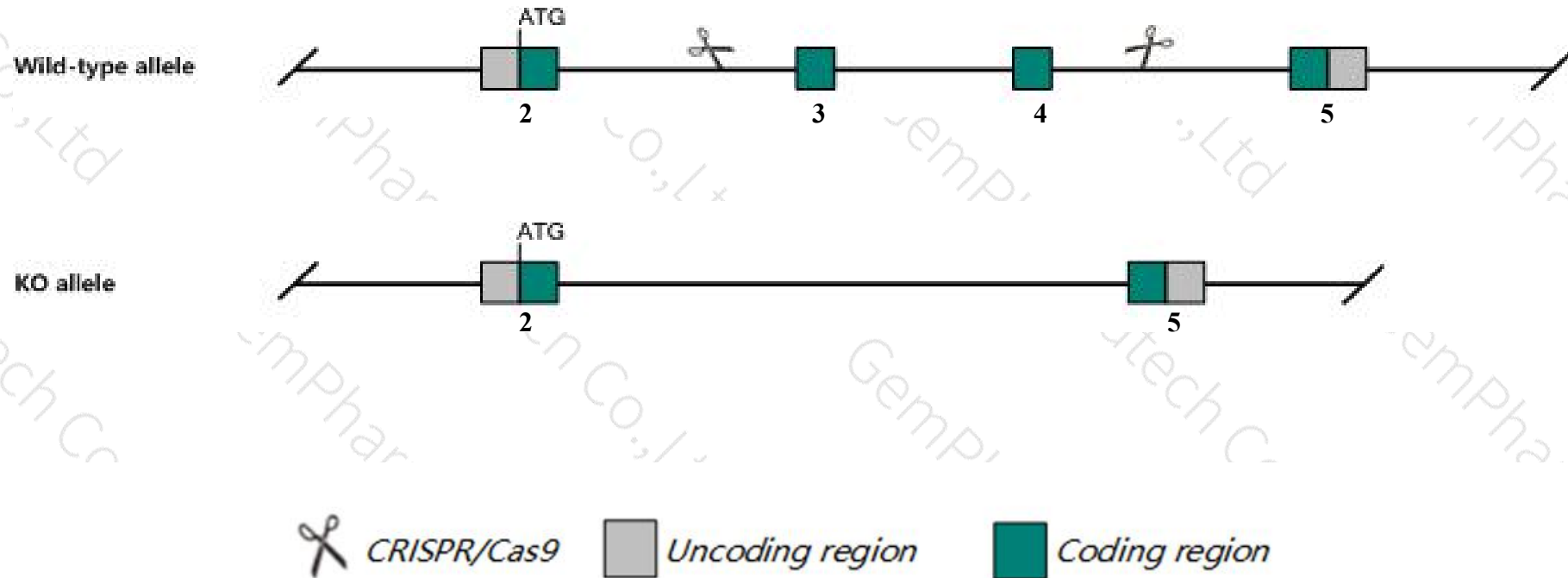
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wnt5b* gene. The schematic diagram is as follows:



- The *Wnt5b* gene has 4 transcripts. According to the structure of *Wnt5b* gene, exon3-exon4 of *Wnt5b*-204 (ENSMUST00000178696.7) transcript is recommended as the knockout region. The region contains 541bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wnt5b* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit normal numbers of thoracic motor neurons and proportions of motor columnar subtypes.
- The *Wnt5b* gene is located on the Chr6. 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)

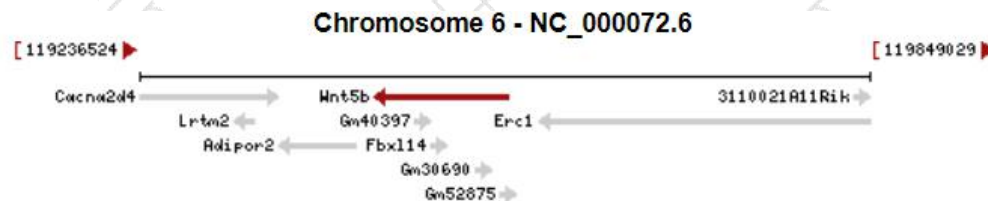
Wnt5b wingless-type MMTV integration site family, member 5B [*Mus musculus* (house mouse)]

Gene ID: 22419, updated on 12-Aug-2019

Summary



Official Symbol	Wnt5b provided by MGI
Official Full Name	wingless-type MMTV integration site family, member 5B provided by MGI
Primary source	MGI:MGI:98959
See related	Ensembl:ENSMUSG00000030170
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	Wnt-5b; AW545702
Expression	Ubiquitous expression in ovary adult (RPKM 4.7), limb E14.5 (RPKM 3.9) and 25 other tissues See more
Orthologs	human all

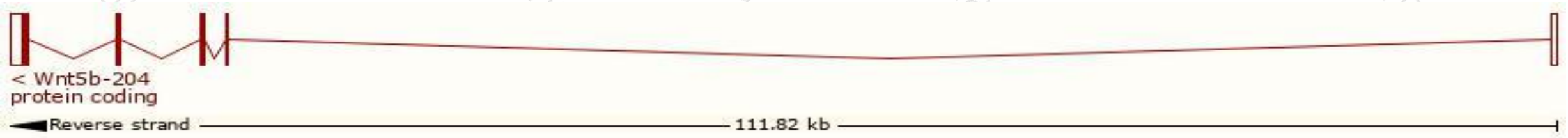


Transcript information (Ensembl)

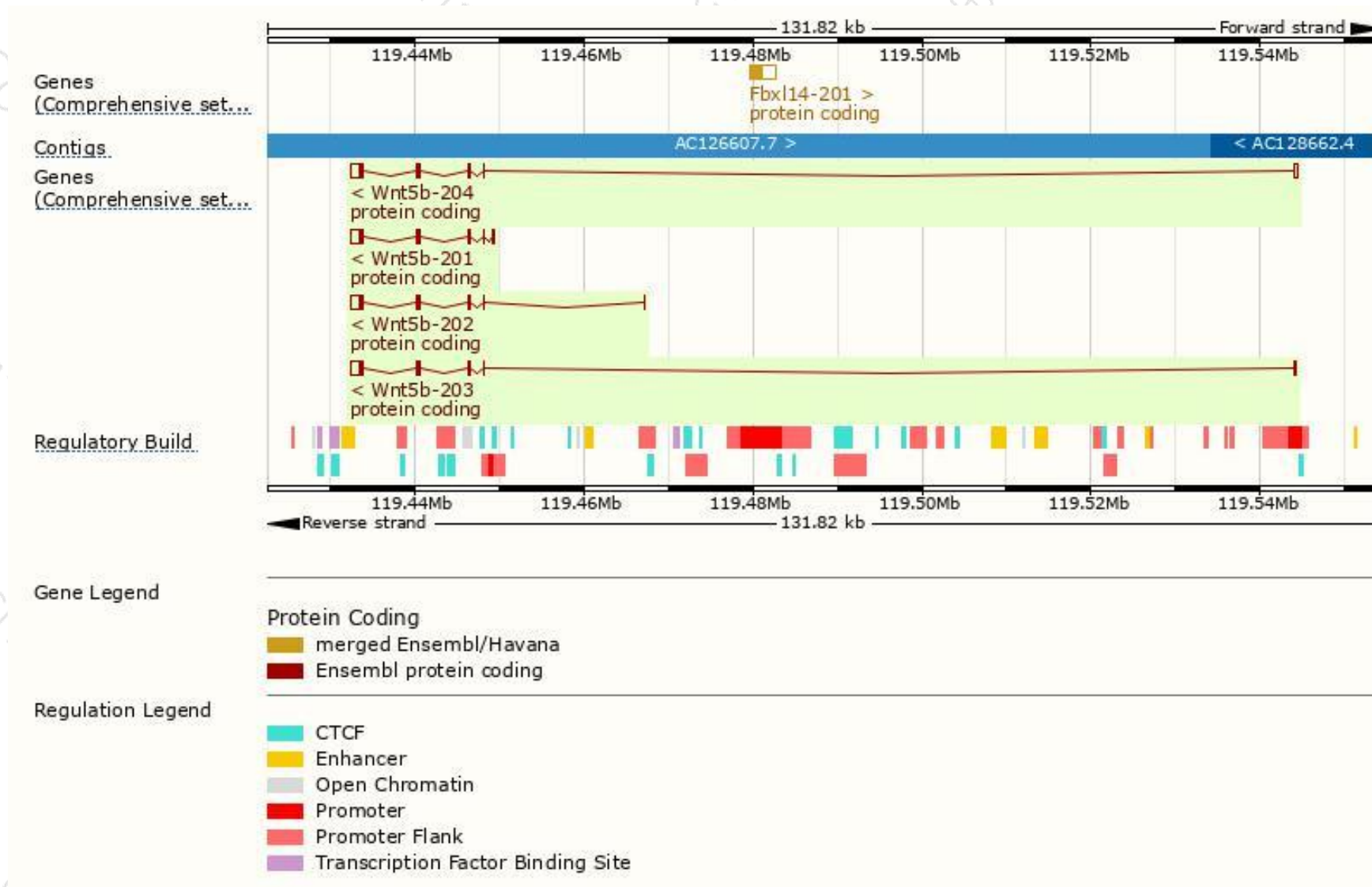
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Translation ID	Biotype	CCDS	UniProt	Flags
Wnt5b-204	ENSMUST00000178696.7	2371	359aa	ENSMUSP00000137065.1	Protein coding	CCDS20474	P22726	TSL:1 GENCODE basic APPRIS P2
Wnt5b-201	ENSMUST00000117171.7	2174	359aa	ENSMUSP00000113188.1	Protein coding	CCDS20474	P22726	TSL:1 GENCODE basic APPRIS P2
Wnt5b-203	ENSMUST00000119369.1	2339	372aa	ENSMUSP00000112448.1	Protein coding	-	A0A0R4J1M1	TSL:1 GENCODE basic APPRIS ALT2
Wnt5b-202	ENSMUST00000118120.7	2115	321aa	ENSMUSP00000112819.1	Protein coding	-	D3YTW9	TSL:1 GENCODE basic APPRIS ALT2

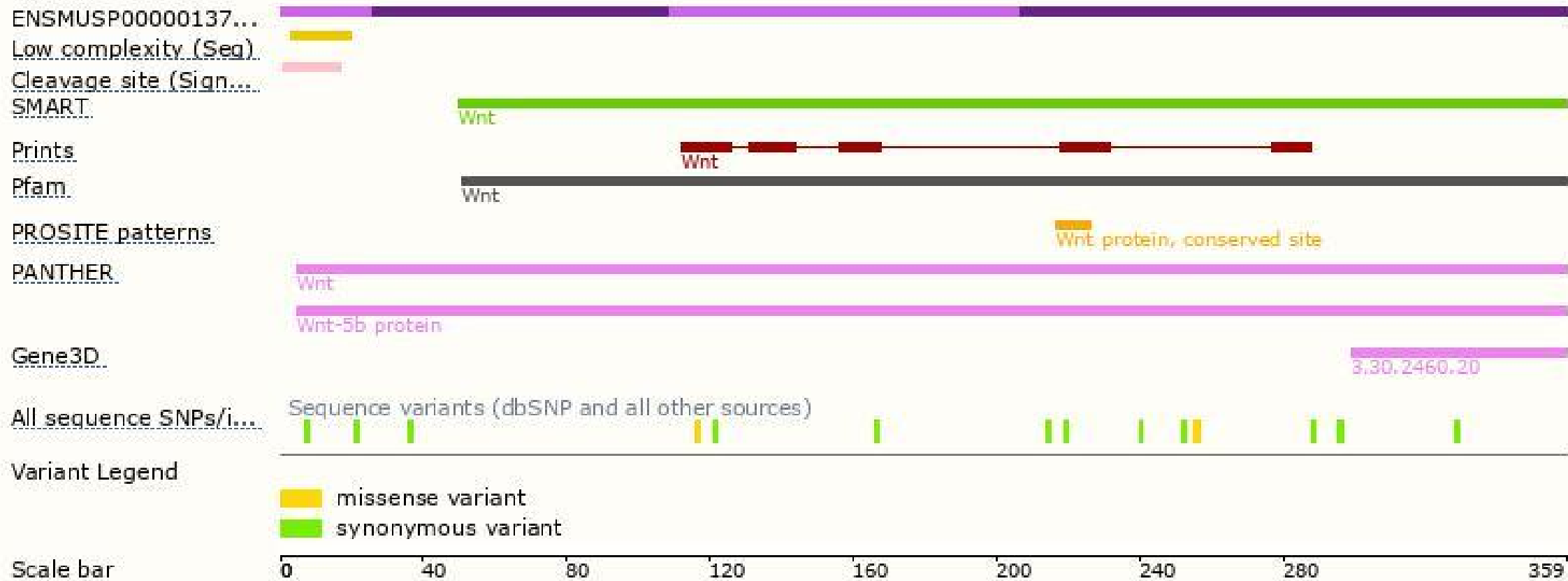
The strategy is based on the design of *Wnt5b-204* transcript,The transcription is shown below



Genomic location distribution

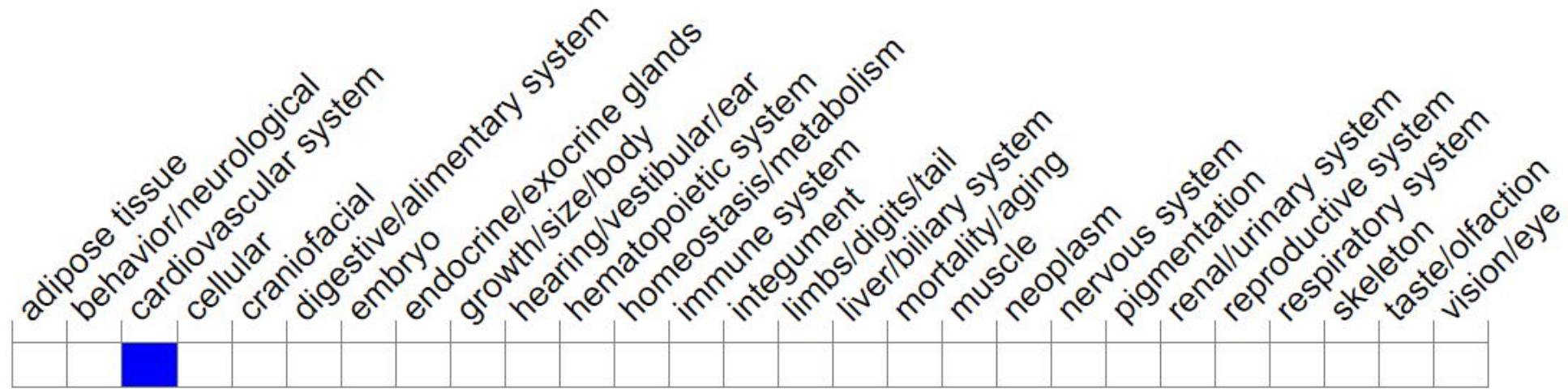


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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