

Prmt7 Cas9-CKO Strategy

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Project Overview

Project Name

Prmt7

Project type

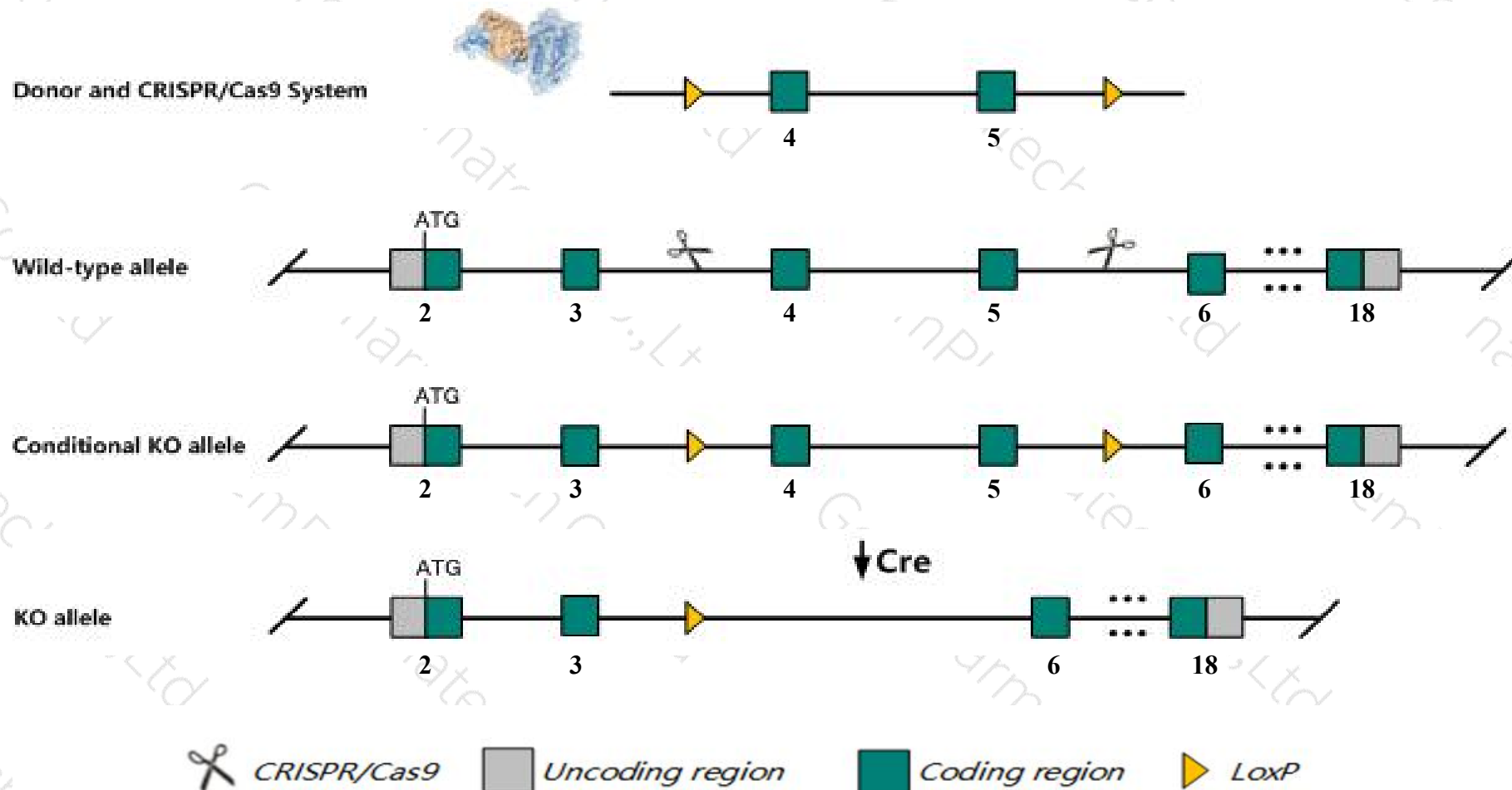
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prmt7* gene. The schematic diagram is as follows:



Technical routes

- The *Prmt7* gene has 7 transcripts. According to the structure of *Prmt7* gene, exon4-exon5 of *Prmt7*-201 (ENSMUST00000071592.11) transcript is recommended as the knockout region. The region contains 259bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Prmt7* 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 *Prmt7* gene is located on the Chr8. 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)

Prmt7 protein arginine N-methyltransferase 7 [*Mus musculus* (house mouse)]

Gene ID: 214572, updated on 10-Oct-2019

Summary

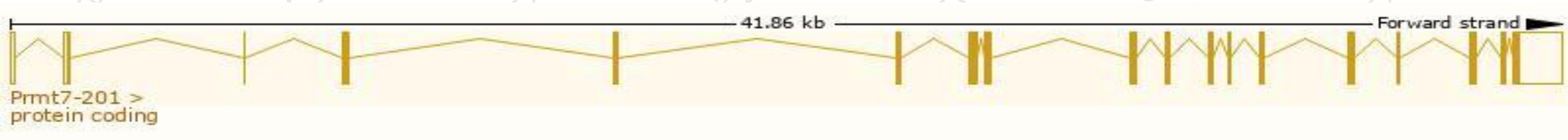
Official Symbol	Prmt7 provided by MGI
Official Full Name	protein arginine N-methyltransferase 7 provided by MGI
Primary source	MGI:MGI:2384879
See related	Ensembl:ENSMUSG00000060098
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC006705; 4933402B05Rik
Expression	Ubiquitous expression in testis adult (RPKM 37.9), ovary adult (RPKM 19.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

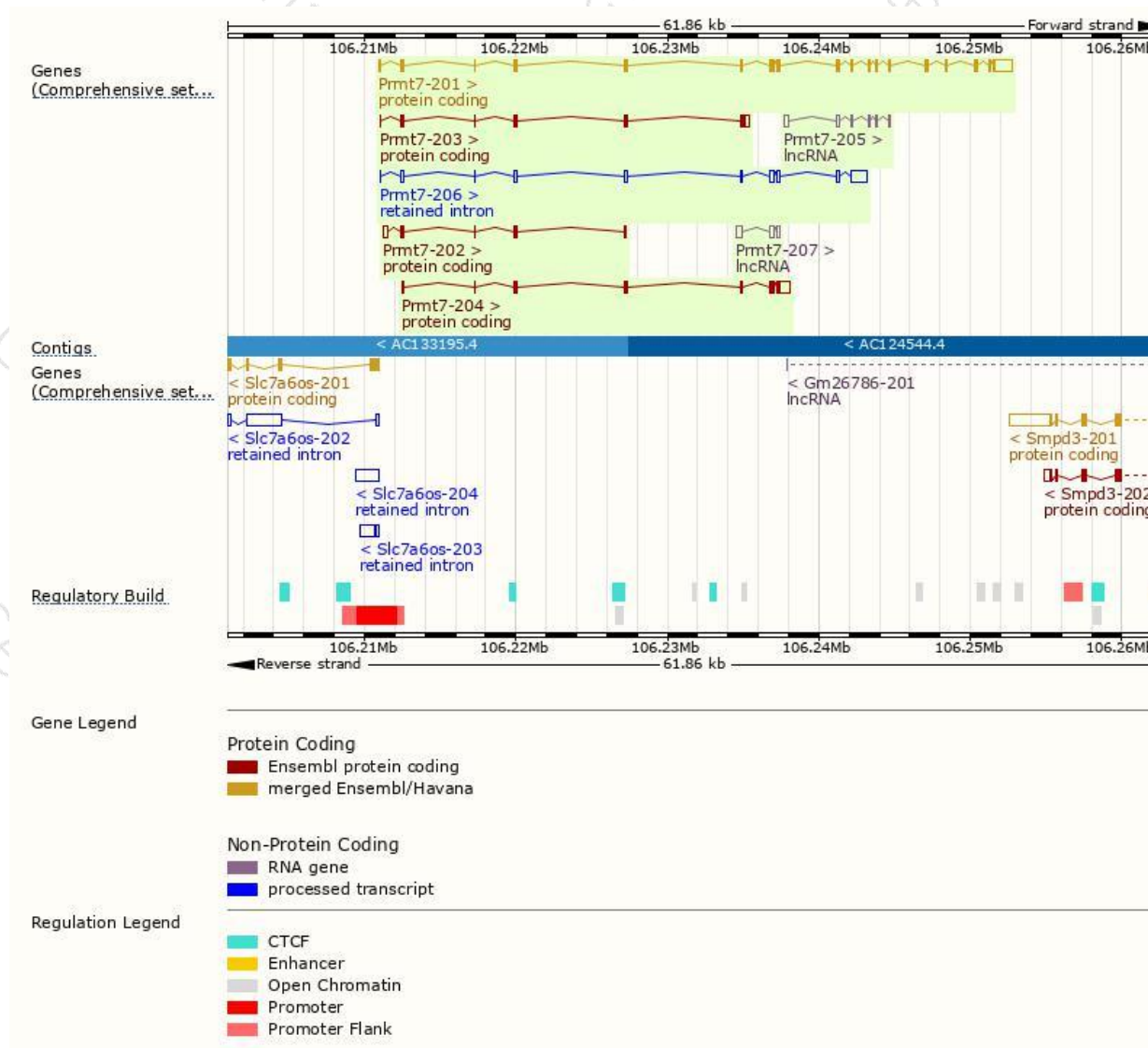
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Prmt7-201	ENSMUST00000071592.11	3472	692aa	Protein coding	CCDS22633	Q922X9	TSL:1 GENCODE basic APPRIS P1
Prmt7-204	ENSMUST00000128201.1	1535	298aa	Protein coding	-	F6RXJ8	CDS 5' incomplete TSL:1
Prmt7-203	ENSMUST00000109297.7	1094	217aa	Protein coding	-	D3Z1C9	TSL:1 GENCODE basic
Prmt7-202	ENSMUST00000109296.7	747	113aa	Protein coding	-	D3Z1D0	CDS 3' incomplete TSL:3
Prmt7-206	ENSMUST00000147063.7	2277	No protein	Retained intron	-	-	TSL:1
Prmt7-207	ENSMUST00000153272.1	851	No protein	lncRNA	-	-	TSL:2
Prmt7-205	ENSMUST00000134151.1	660	No protein	lncRNA	-	-	TSL:3

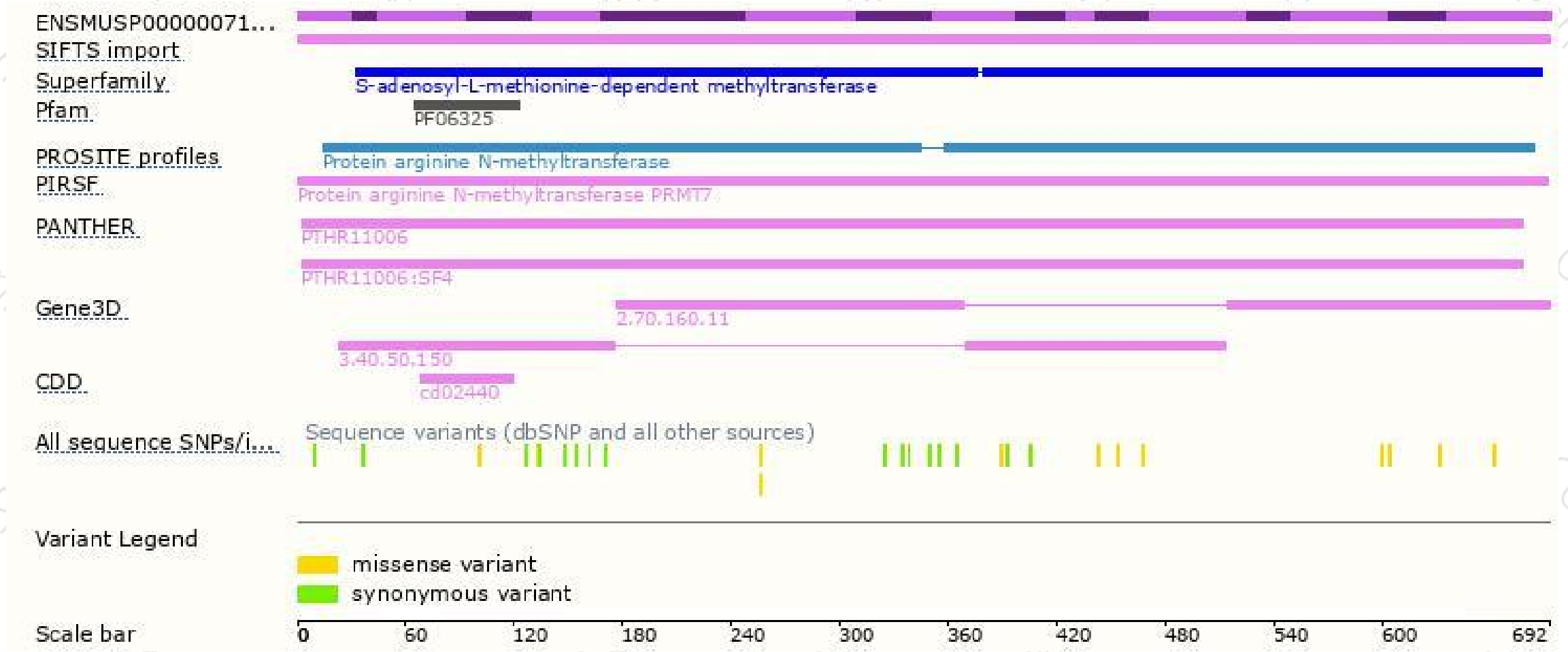
The strategy is based on the design of *Prmt7-201* transcript,The transcription is shown below



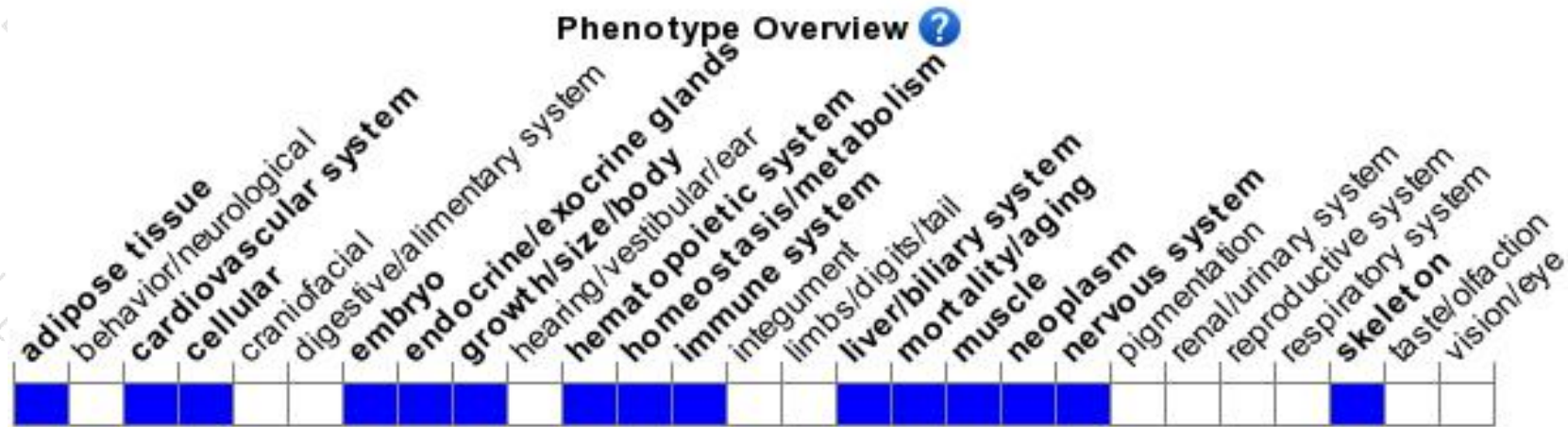
Genomic location distribution



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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