

Pdlim1 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Pdlim1

Project type

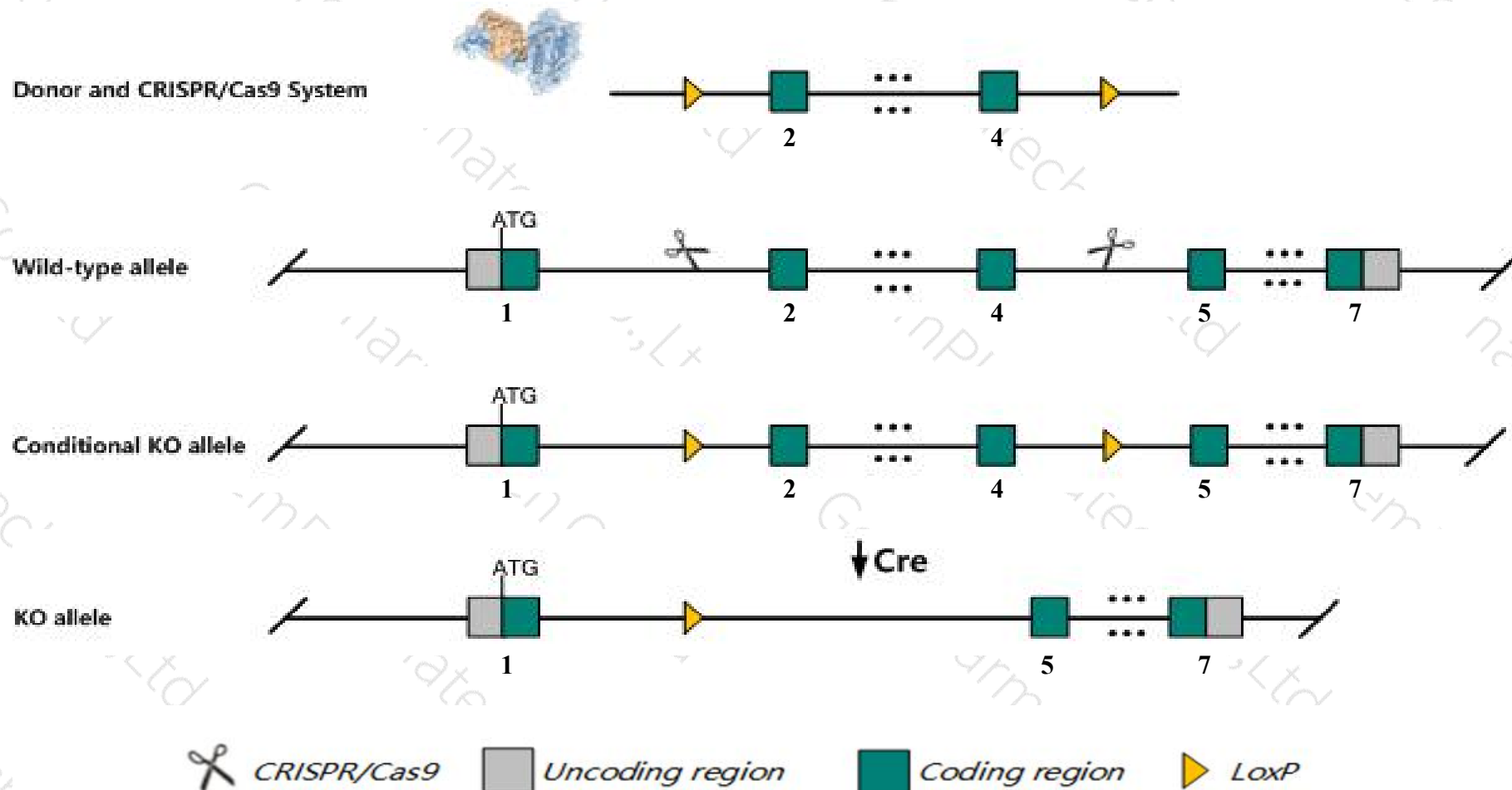
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pdlim1* gene. The schematic diagram is as follows:



- The *Pdlim1* gene has 5 transcripts. According to the structure of *Pdlim1* gene, exon2-exon4 of *Pdlim1*-201 (ENSMUST00000068439.12) transcript is recommended as the knockout region. The region contains 431bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pdlim1* 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.

- According to the existing MGI data, Mice homozygous for a gene trap allele exhibit enhanced platelet response to GPVI agonists and thrombosis.
- The *Pdlim1* gene is located on the Chr19. 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)

Pdim1 PDZ and LIM domain 1 (elfin) [Mus musculus (house mouse)]

Gene ID: 54132, updated on 19-Mar-2019

Summary



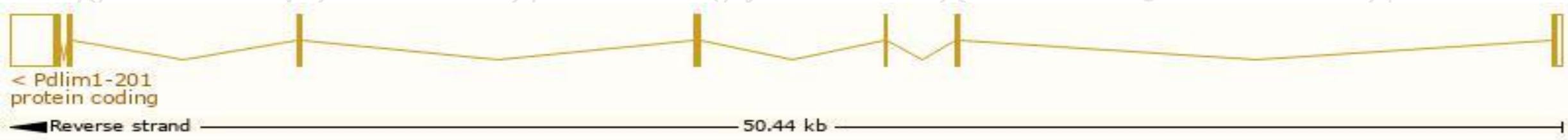
Official Symbol	Pdim1 provided by MGI
Official Full Name	PDZ and LIM domain 1 (elfin) provided by MGI
Primary source	MGI:MGI:1860611
See related	Ensembl:ENSMUSG00000055044
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CLP36, Clim1, mClim1
Expression	Broad expression in large intestine adult (RPKM 123.7), placenta adult (RPKM 92.4) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

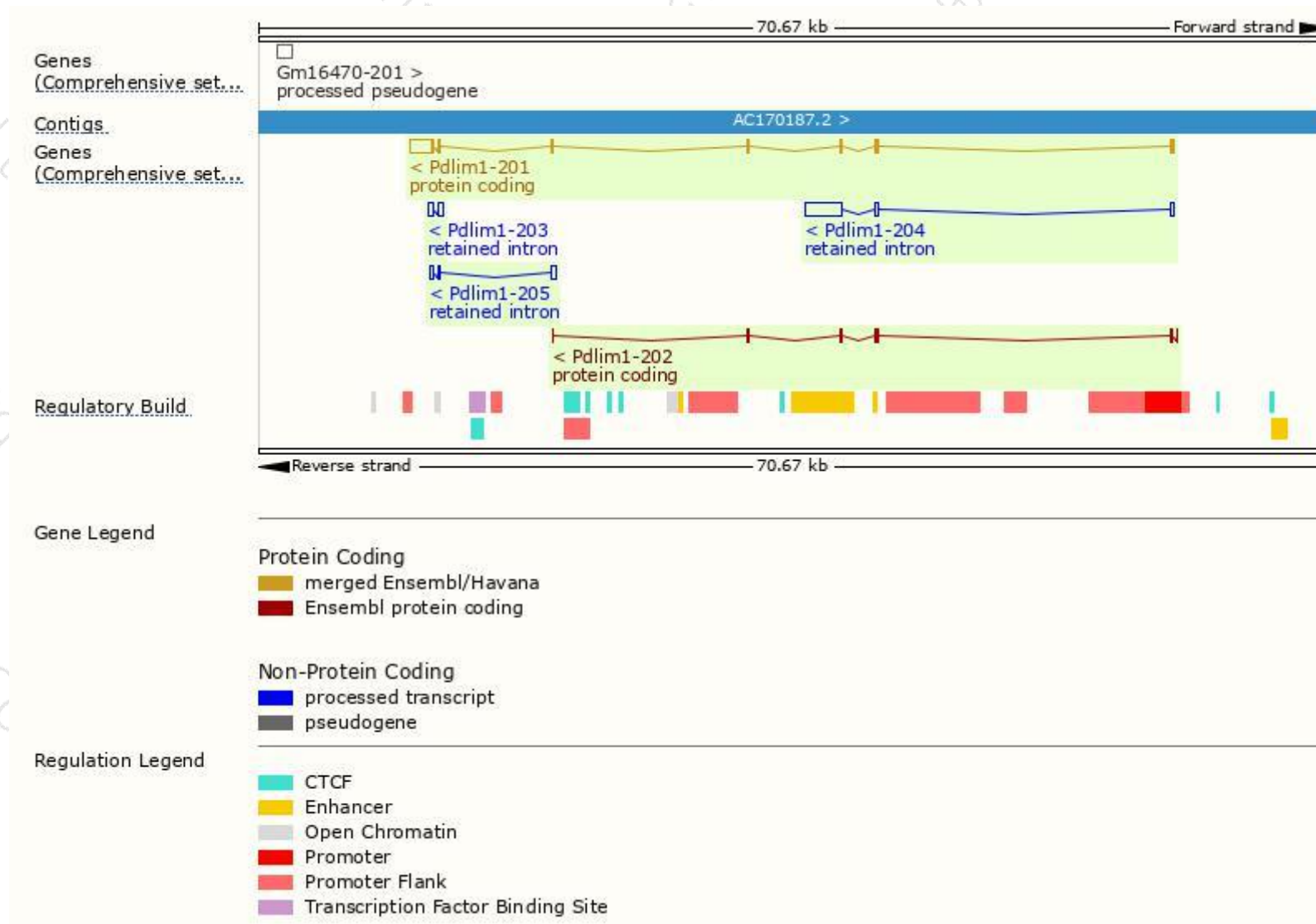
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pdlim1-201	ENSMUST00000068439.12	2571	327aa	Protein coding	CCDS37977	Q70400	TSL:1 GENCODE basic APPRIS P1
Pdlim1-202	ENSMUST00000182432.1	692	198aa	Protein coding	-	S4R1V0	CDS 3' incomplete TSL:3
Pdlim1-204	ENSMUST00000182636.1	2835	No protein	Retained intron	-	-	TSL:1
Pdlim1-203	ENSMUST00000182540.1	715	No protein	Retained intron	-	-	TSL:2
Pdlim1-205	ENSMUST00000182813.1	666	No protein	Retained intron	-	-	TSL:2

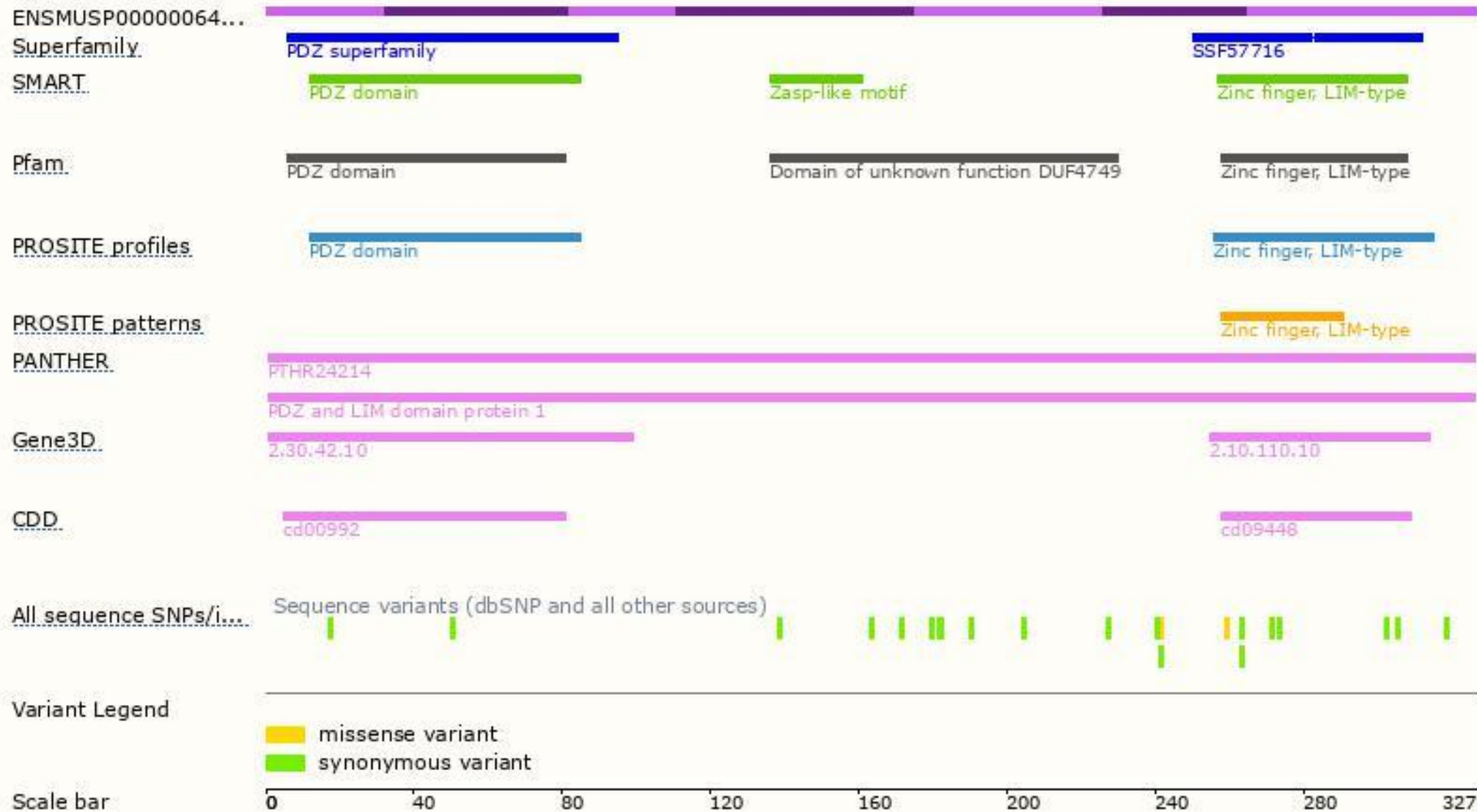
The strategy is based on the design of *Pdlim1-201* transcript,The transcription is shown below



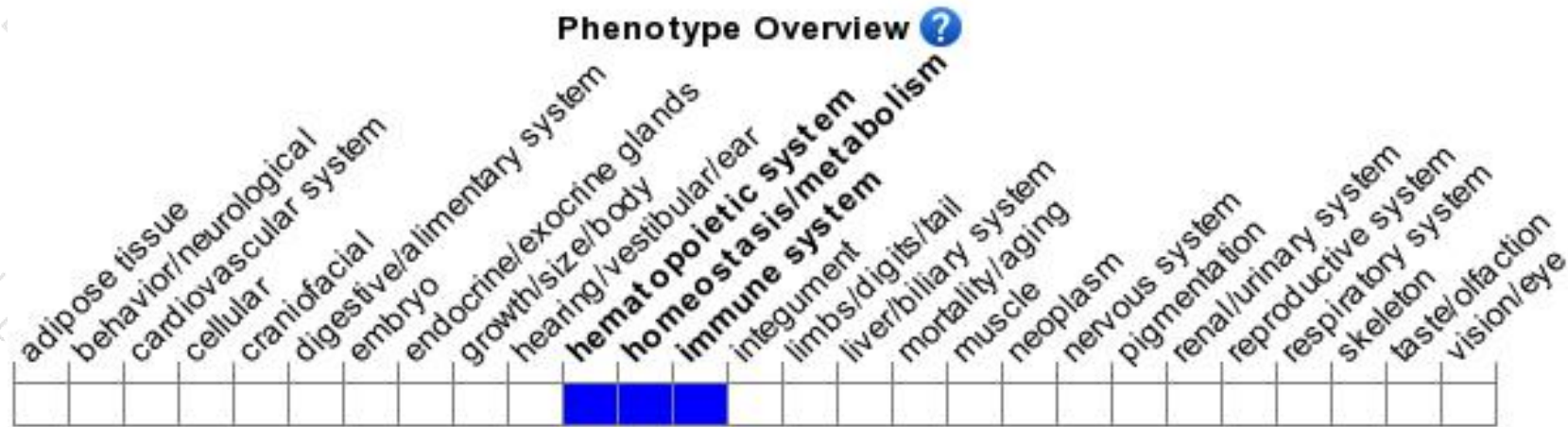
Genomic location distribution



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/>).

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

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