

Ppp1r8 Cas9-CKO Strategy

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Project Overview

Project Name

Ppp1r8

Project type

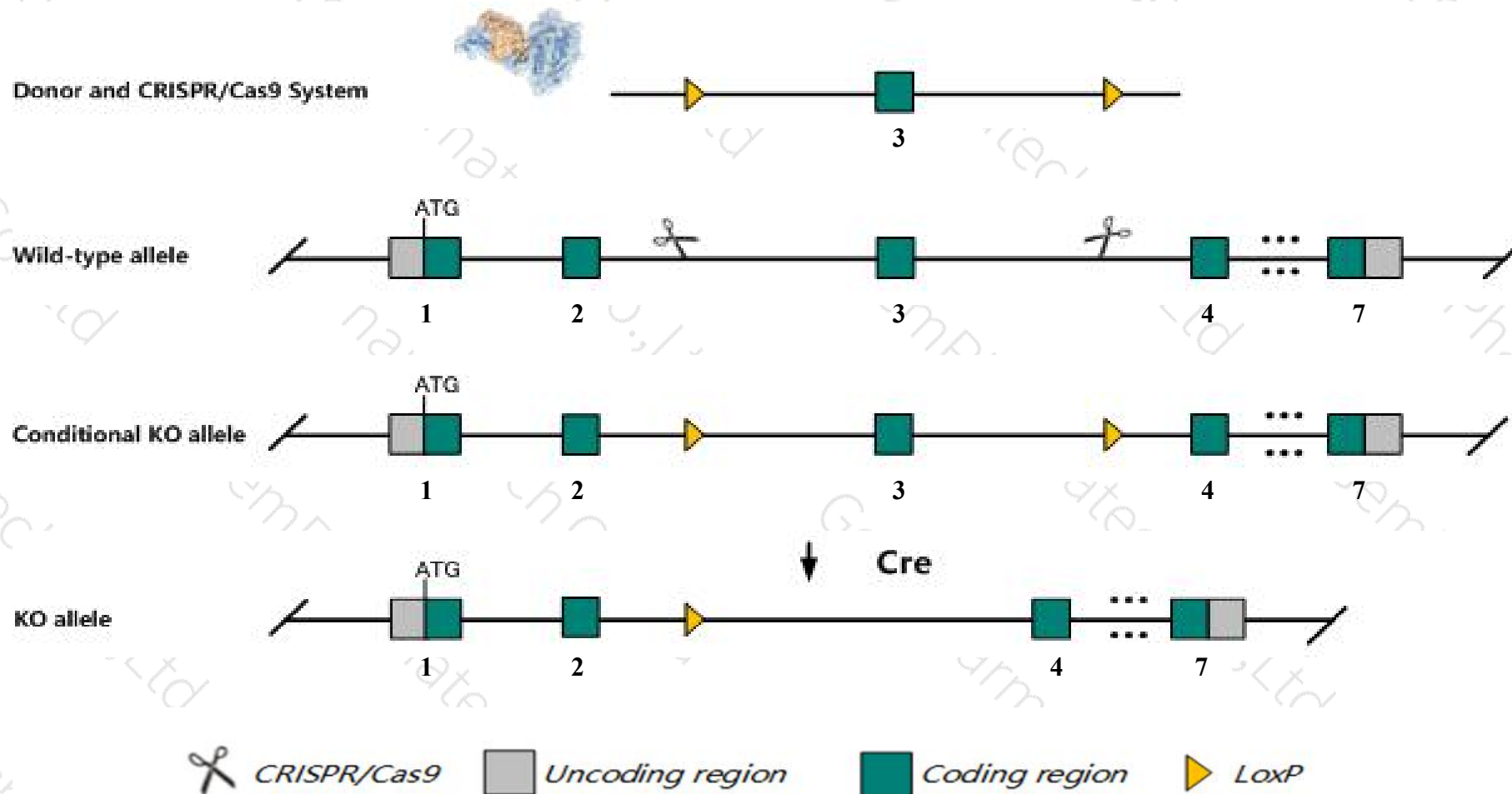
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppp1r8* gene. The schematic diagram is as follows:



Technical routes

- The *Ppp1r8* gene has 5 transcripts. According to the structure of *Ppp1r8* gene, exon3 of *Ppp1r8-201*(ENSMUST00000030702.13) transcript is recommended as the knockout region. The region contains 154bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ppp1r8* 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, embryos homozygous for knock-out allele exhibit severe growth retardation and impaired cell proliferation and die between embryonic days 6.5 and 7.5.
- The *Ppp1r8* gene is located on the Chr4. 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)

Ppp1r8 protein phosphatase 1, regulatory subunit 8 [Mus musculus (house mouse)]

Gene ID: 100336, updated on 13-Mar-2020

Summary



Official Symbol Ppp1r8 provided by [MGI](#)

Official Full Name protein phosphatase 1, regulatory subunit 8 provided by [MGI](#)

Primary source [MGI:MGI:2140494](#)

See related [Ensembl:ENSMUSG00000028882](#)

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 6330548N22Rik, AU044684, NIPP1

Expression Ubiquitous expression in CNS E11.5 (RPKM 36.1), CNS E14 (RPKM 26.4) and 28 other tissues [See more](#)

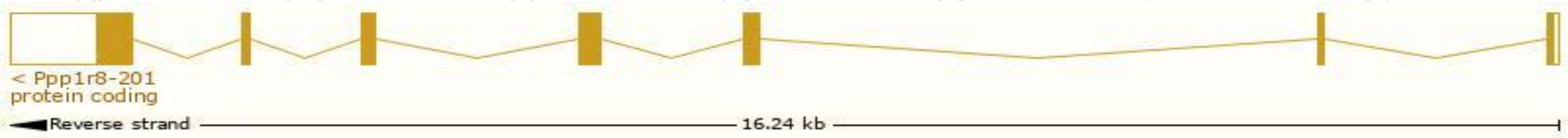
Orthologs [human all](#)

Transcript information (Ensembl)

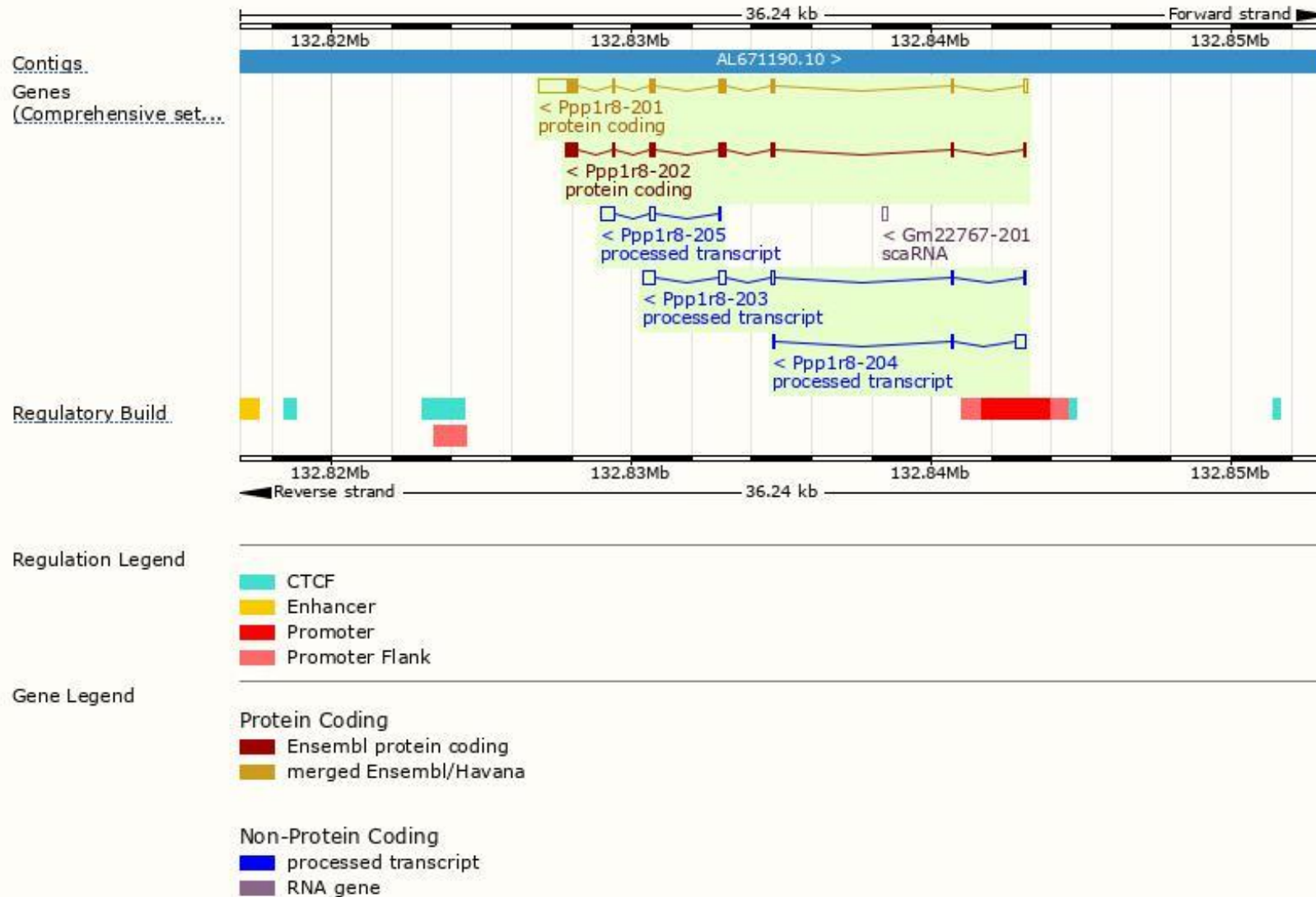
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppp1r8-201	ENSMUST00000030702.13	2037	351aa	Protein coding	CCDS18736	Q8R3G1	TSL:1 GENCODE basic APPRIS P3
Ppp1r8-202	ENSMUST000000105919.1	1090	350aa	Protein coding	CCDS71482	A2ADR8	TSL:3 GENCODE basic APPRIS ALT1
Ppp1r8-203	ENSMUST000000131725.7	883	No protein	Processed transcript	-	-	TSL:2
Ppp1r8-205	ENSMUST000000156777.1	694	No protein	Processed transcript	-	-	TSL:3
Ppp1r8-204	ENSMUST000000148228.1	480	No protein	Processed transcript	-	-	TSL:3

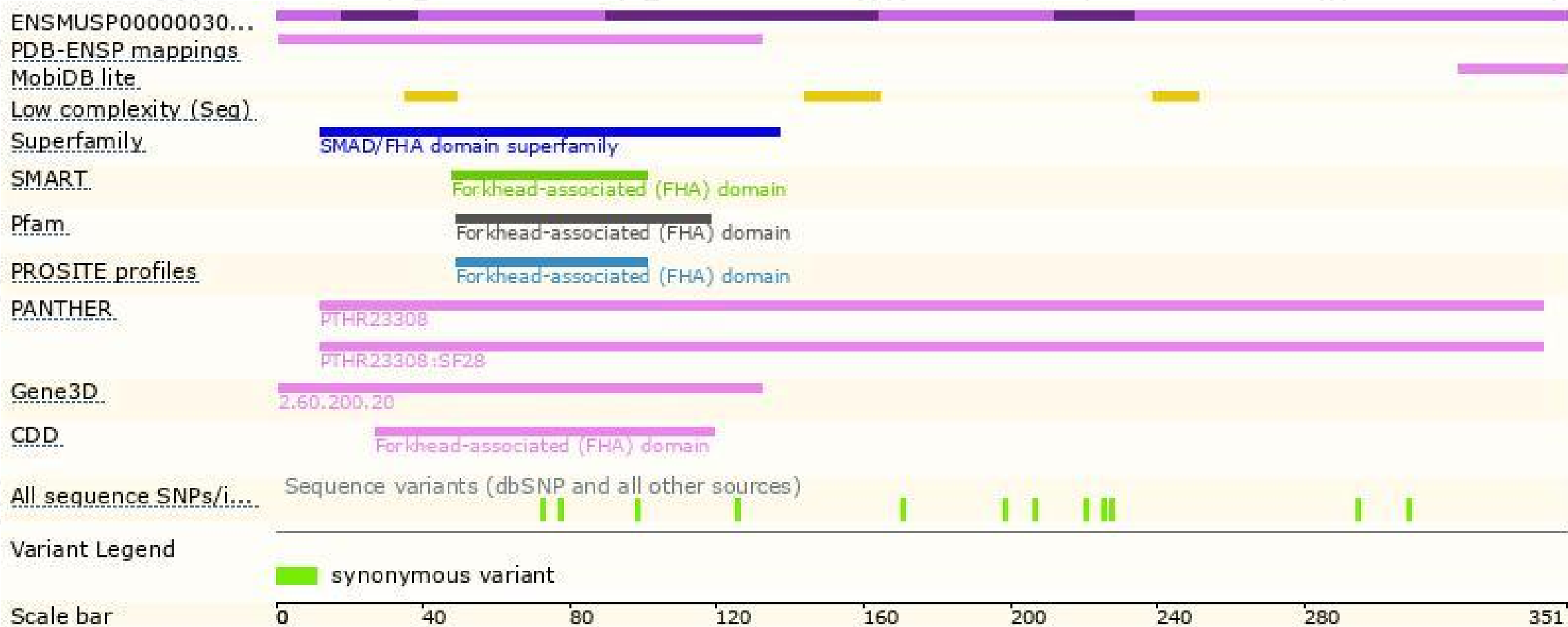
The strategy is based on the design of *Ppp1r8-201* transcript,the transcription is shown below:



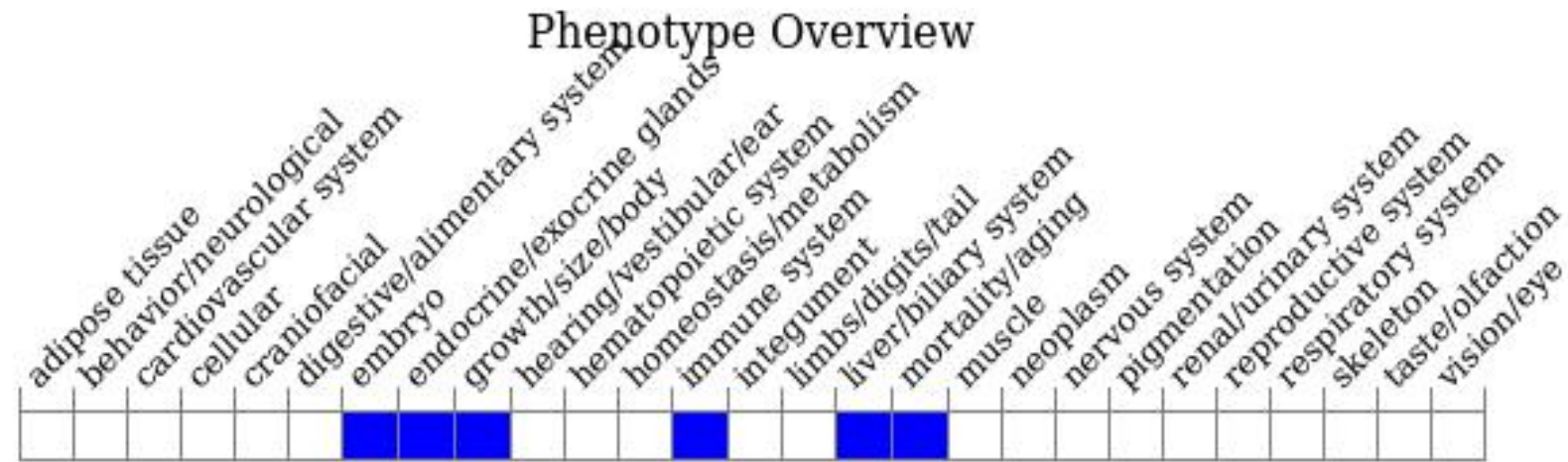
Genomic location distribution



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, embryos homozygous for knock-out allele exhibit severe growth retardation and impaired cell proliferation and die between embryonic days 6.5 and 7.5.

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

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