

# *Mybphl* Cas9-CKO Strategy

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# Project Overview

**Project Name**

*Mybphl*

**Project type**

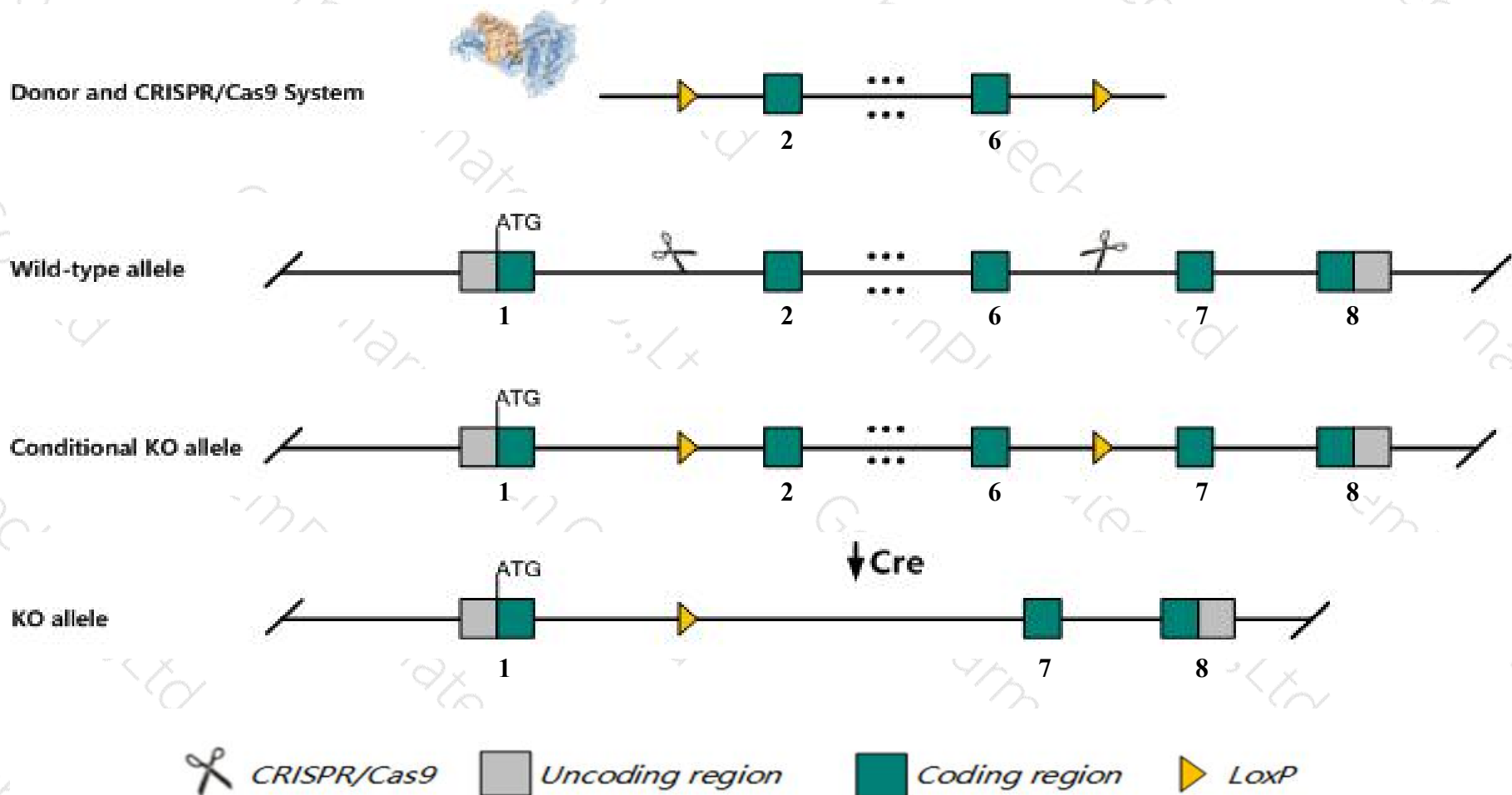
**Cas9-CKO**

**Strain background**

**C57BL/6JGpt**

# Conditional Knockout strategy

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



- The *Mybphl* gene has 1 transcript. According to the structure of *Mybphl* gene, exon2-exon6 of *Mybphl*-201 (ENSMUST00000090563.6) transcript is recommended as the knockout region. The region contains 722bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Mybphl* 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.

- Some amino acids will remain at the N-terminus and some functions may be retained.
- The *Mybphl* gene is located on the Chr3. 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)

## Mybphl myosin binding protein H-like [ *Mus musculus* (house mouse) ]

Gene ID: 68753, updated on 12-Aug-2019

### Summary

Official Symbol	Mybphl provided by <a href="#">MGI</a>
Official Full Name	myosin binding protein H-like provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:1916003</a>
See related	<a href="#">Ensembl:ENSMUSG00000068745</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110037P11Rik
Expression	Restricted expression toward heart adult (RPKM 87.9) <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

### Genomic context

Location: 3; 3 F3

See Mybphl in [Genome Data Viewer](#)

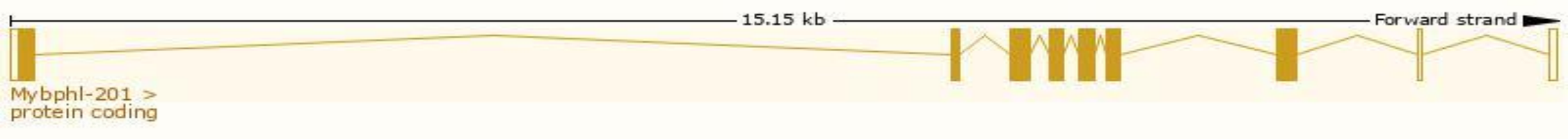
Exon count: 9

# Transcript information (Ensembl)

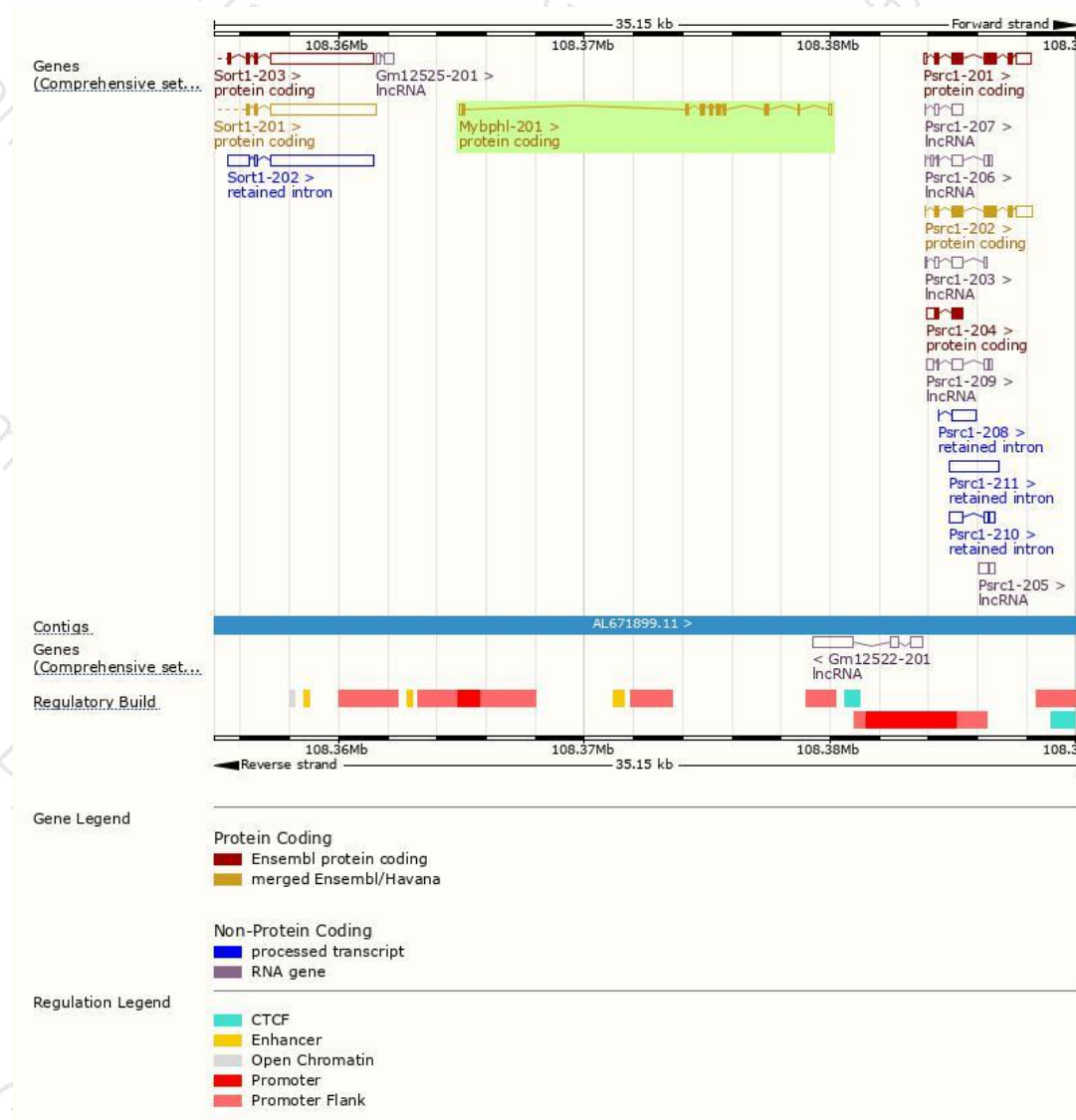
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Mybphl-201	<a href="#">ENSMUST00000090563.6</a>	1276	<a href="#">355aa</a>	Protein coding	<a href="#">CCDS17757</a>	<a href="#">Q5FW53</a>	TSL:1 GENCODE basic APPRIS P1

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

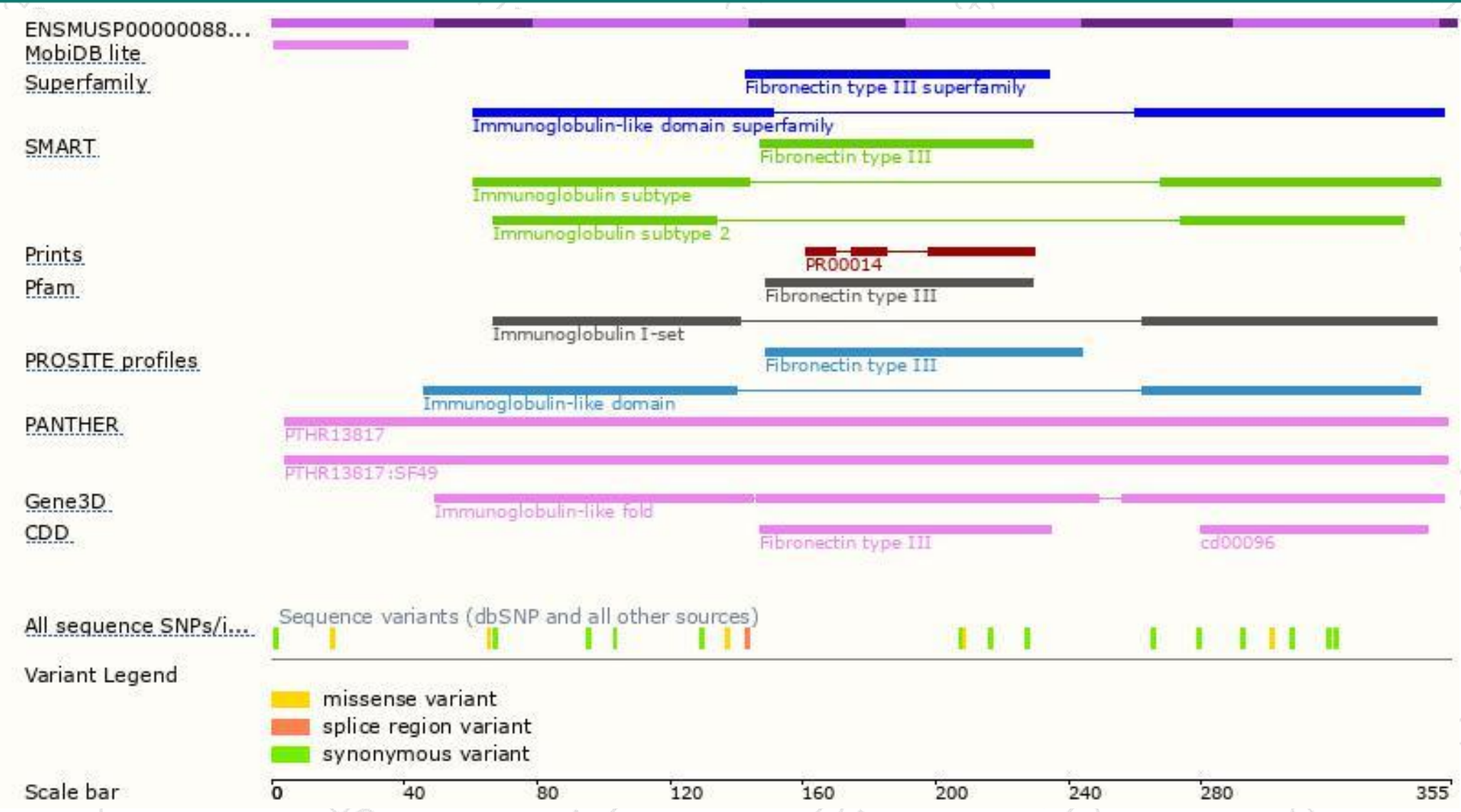


# Genomic location distribution

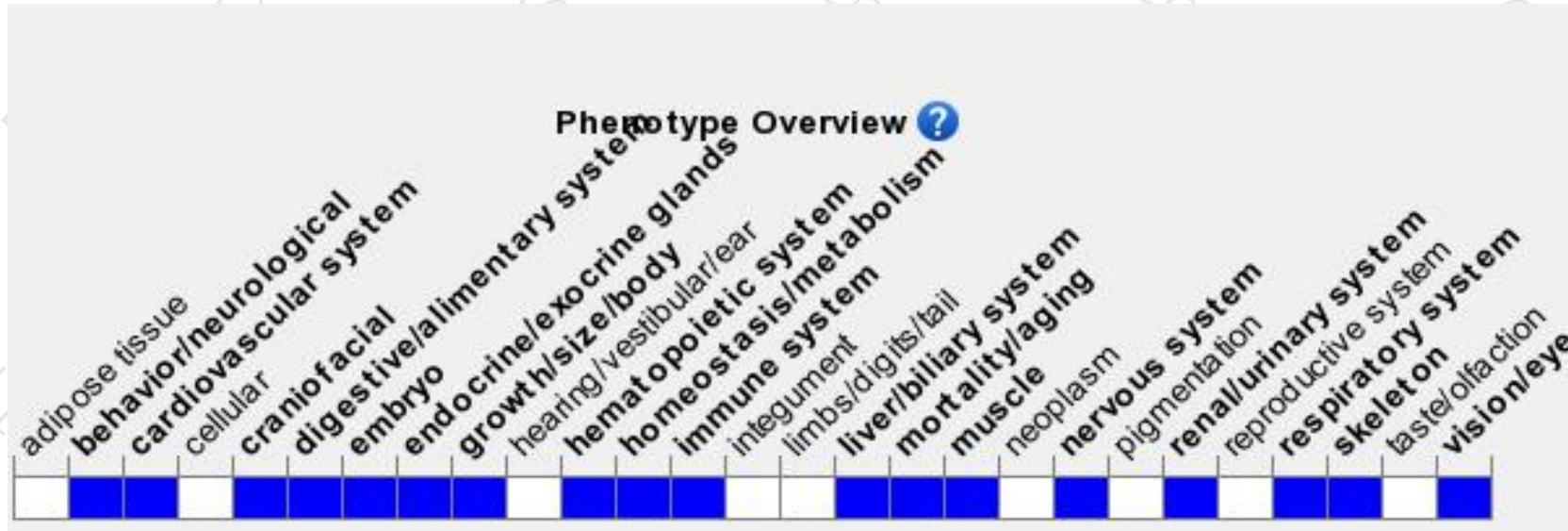




# Protein domain



# 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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