# *Egln1* Cas9-KO Strategy

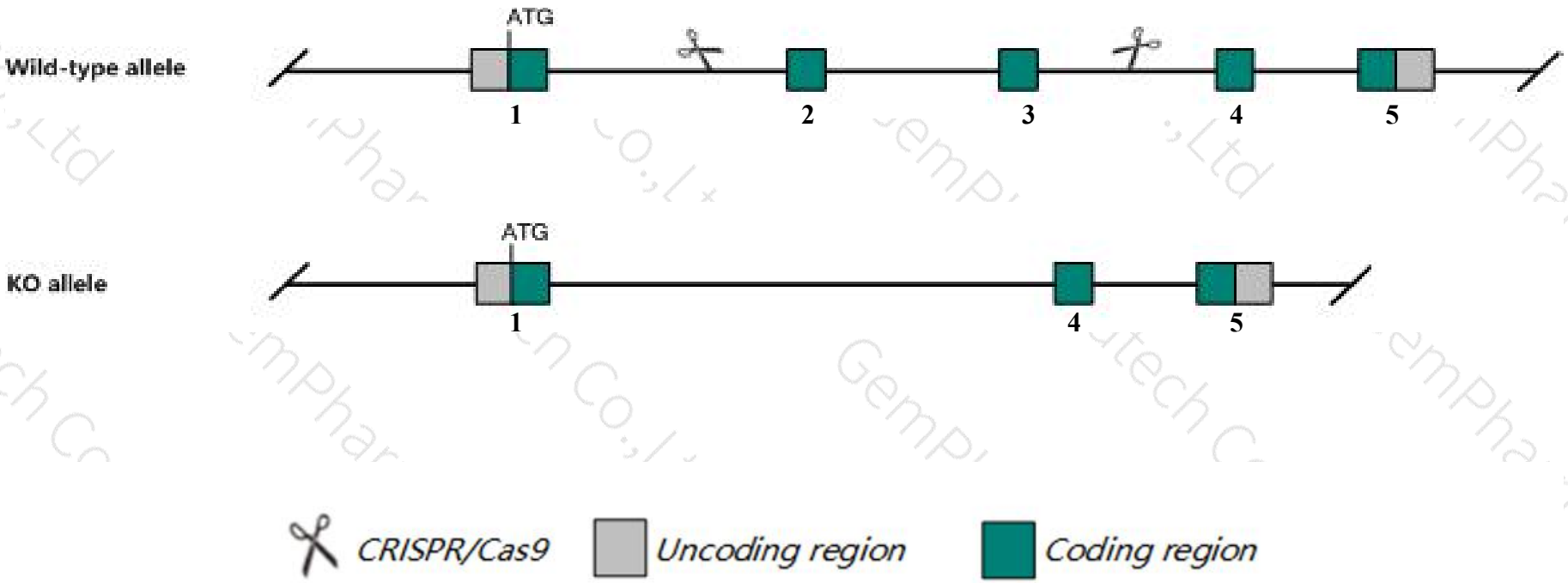
Designer: Xiaojing Li
Design Date: 2019-9-16
Reviewer: JiaYu

# Project Overview

| | |
|---|---|
| **Project Name** | ***Egln1*** |
| **Project type** | **Cas9-KO** |
| **Strain background** | **C57BL/6JGpt** |

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Egln1* gene. The schematic diagram is as follows:



# Technical routes

➢ The *Egln1* gene has 1 transcript. According to the structure of *Egln1* gene, exon2-exon3 of *Egln1-201* (ENSMUST00000034469.6) transcript is recommended as the knockout region.The region contains 257bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Egln1* gene. The brief process is as follows: CRISPR/Cas9 system

# Notice

- According to the existing MGI data,Mice homozygous for a null allele display embryonic lethality during organogenesis with abnormal placental and cardiac morphology. Ubiquitous induced conditional null mice display increased angiogenesis, angiectasia, and increased hematopoietic activity.

- The *Egln1* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

# Gene information（NCBI）

集萃药康 GemPharmatech

## Egln1 egl-9 family hypoxia-inducible factor 1 [Mus musculus (house mouse)]

Gene ID: 112405, updated on 5-Mar-2019

### Summary

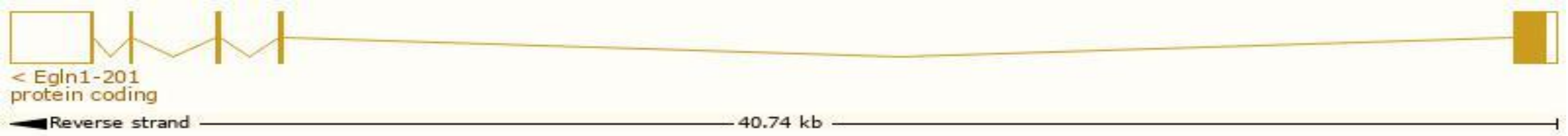
| | |
|---|---|
| **Official Symbol** | Egln1 provided by MGI |
| **Official Full Name** | egl-9 family hypoxia-inducible factor 1 provided by MGI |
| **Primary source** | MGI:MGI:1932286 |
| **See related** | Ensembl:ENSMUSG00000031987 |
| **Gene type** | protein coding |
| **RefSeq status** | VALIDATED |
| **Organism** | Mus musculus |
| **Lineage** | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus |
| **Also known as** | AI503754, C1orf12, HIF-PH2, HPH-2, Hif-p4h-2, ORF13, Phd2, SM-20 |
| **Expression** | Ubiquitous expression in heart adult (RPKM 63.4), ovary adult (RPKM 20.9) and 27 other tissues See more |
| **Orthologs** | human all |

# Transcript information（Ensembl）

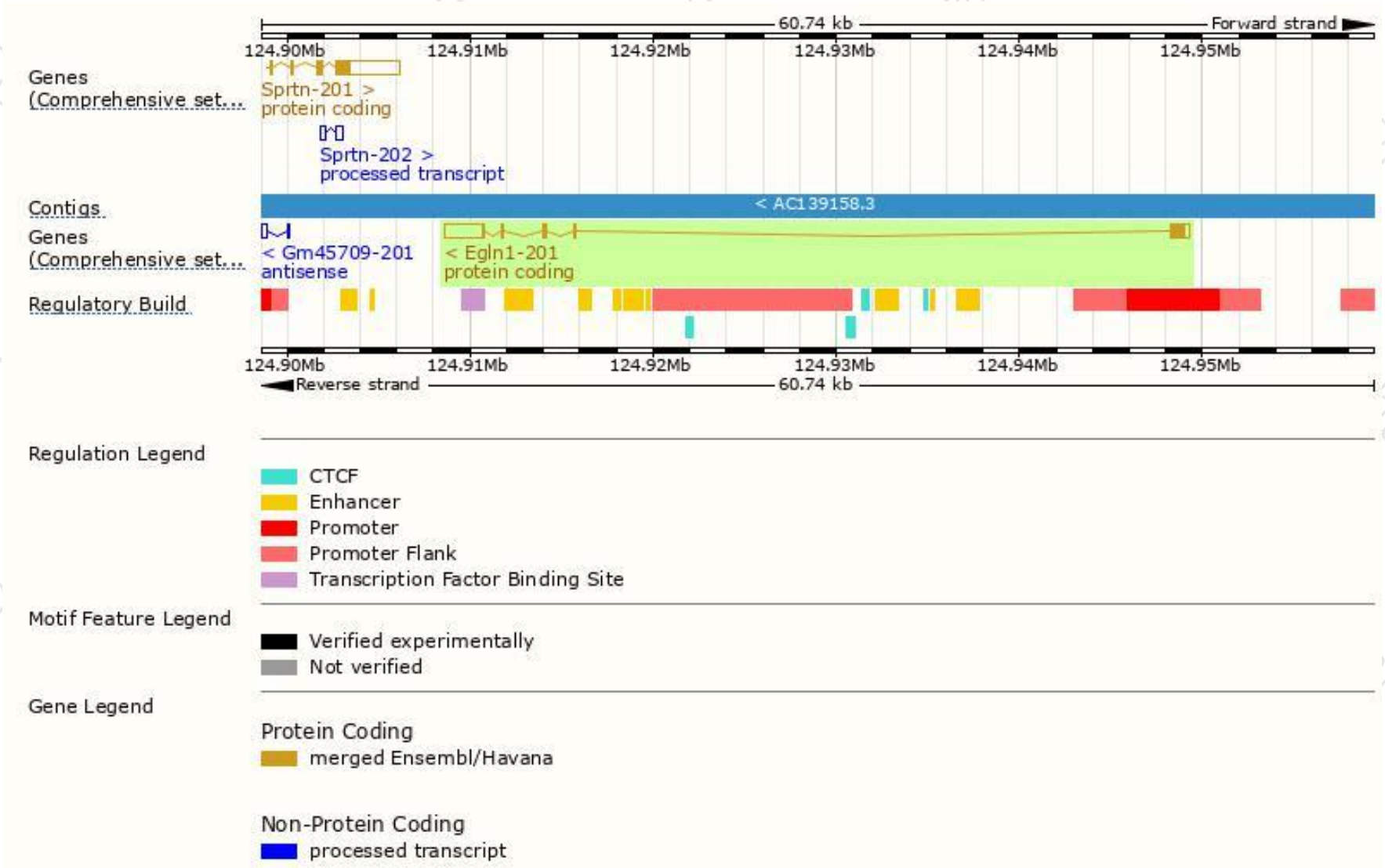
The gene has 1 transcript,and the transcript is shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|---|---|---|---|---|---|---|---|
| Egln1-201 | ENSMUST00000034469.6 | 3594 | 400aa | Protein coding | CCDS52706 | Q91YE3 | TSL:1 GENCODE basic APPRIS P1 |

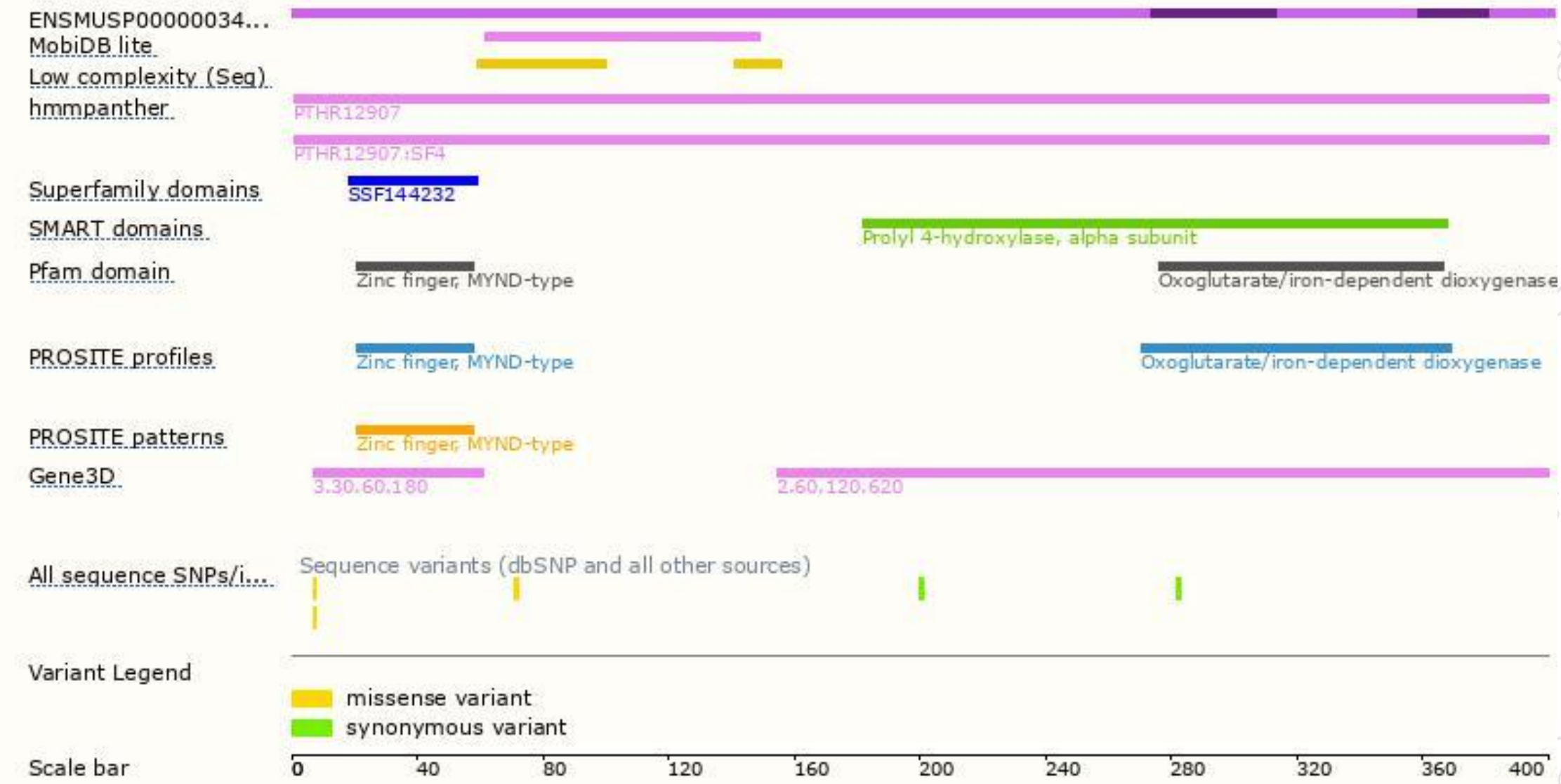
The strategy is based on the design of *Egln1-201* transcript,The transcription is shown below



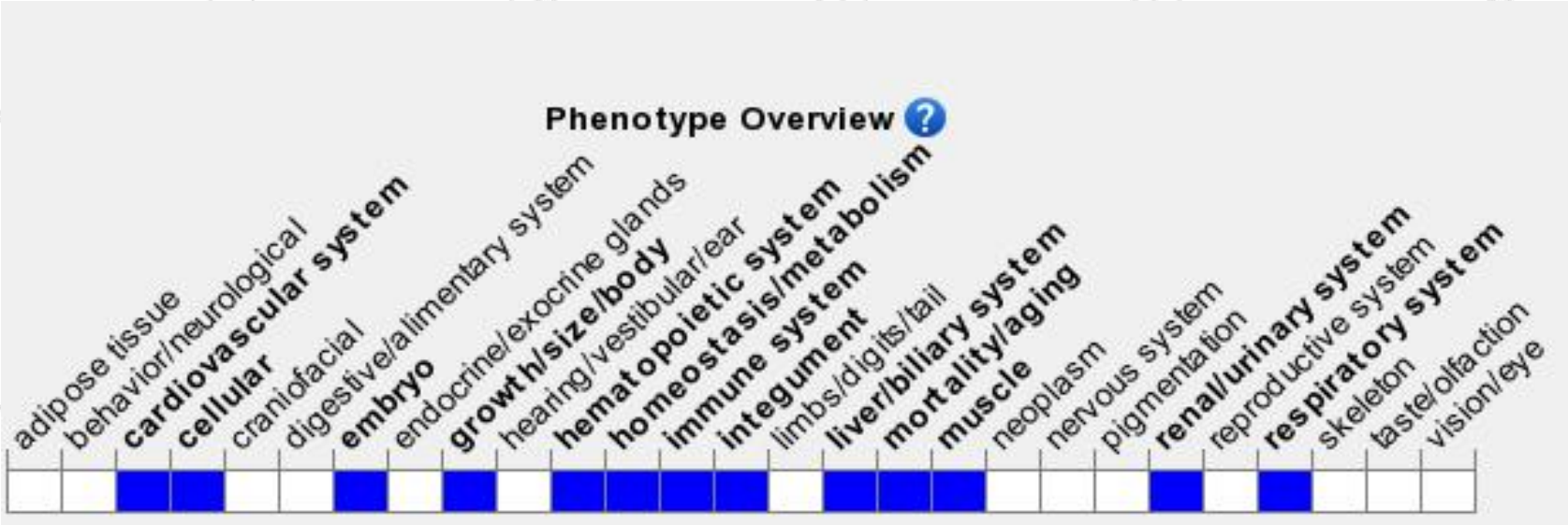
# Genomic location distribution



# 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,Mice homozygous for a null allele display embryonic lethality during organogenesis with abnormal placental and cardiac morphology. Ubiquitous induced conditional null mice display increased angiogenesis, angiectasia, and increased hematopoietic activity.

集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd