Mcm3ap Cas9-KO Strategy

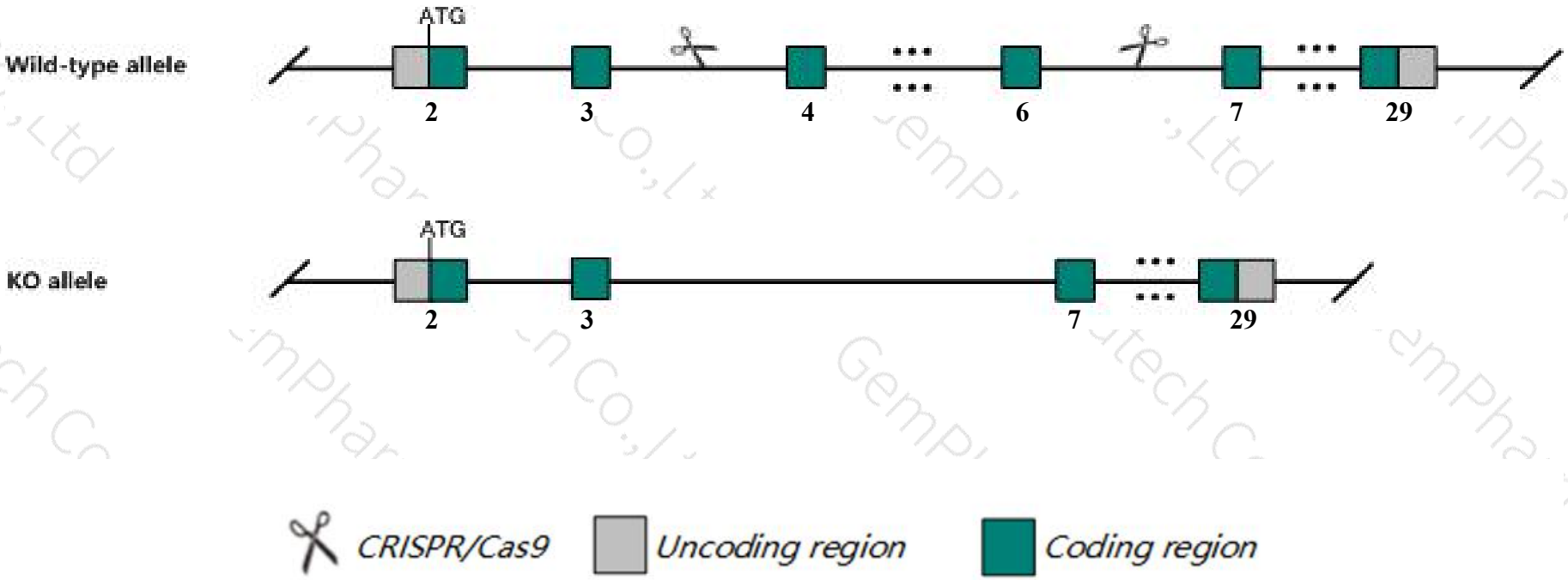
Designer: JiaYu

Project Overview

Project Name	***Mcm3ap***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Mcm3ap* gene. The schematic diagram is as follows:



Technical routes

➢ The *Mcm3ap* gene has 6 transcripts. According to the structure of *Mcm3ap* gene, exon4-exon6 of *Mcm3ap-201* (ENSMUST00000170795.2) transcript is recommended as the knockout region.The region contains 412bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Mcm3ap* gene. The brief process is as follows: CRISPR/Cas9 syste

Notice

➢ According to the existing MGI data,Mice homozygous for a null allele die by E12.

➢ The *Mcm3ap* gene is located on the Chr10. 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

Mcm3ap minichromosome maintenance complex component 3 associated protein [Mus musculus (house mouse)]

Gene ID: 54387, updated on 19-Mar-2019

Summary

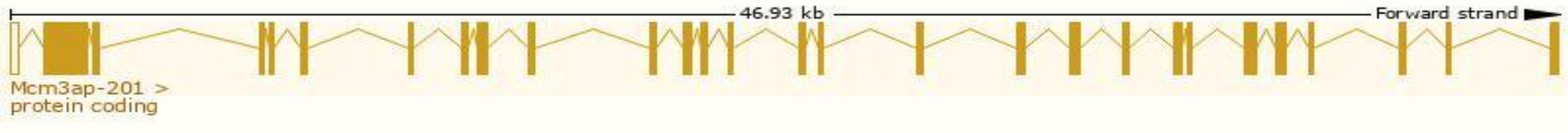
Official Symbol	Mcm3ap provided by MGI
Official Full Name	minichromosome maintenance complex component 3 associated protein provided byMGI
Primary source	MGI:MGI:1930089
See related	Ensembl:ENSMUSG00000001150
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	GANP
Expression	Ubiquitous expression in thymus adult (RPKM 11.2), CNS E14 (RPKM 10.8) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

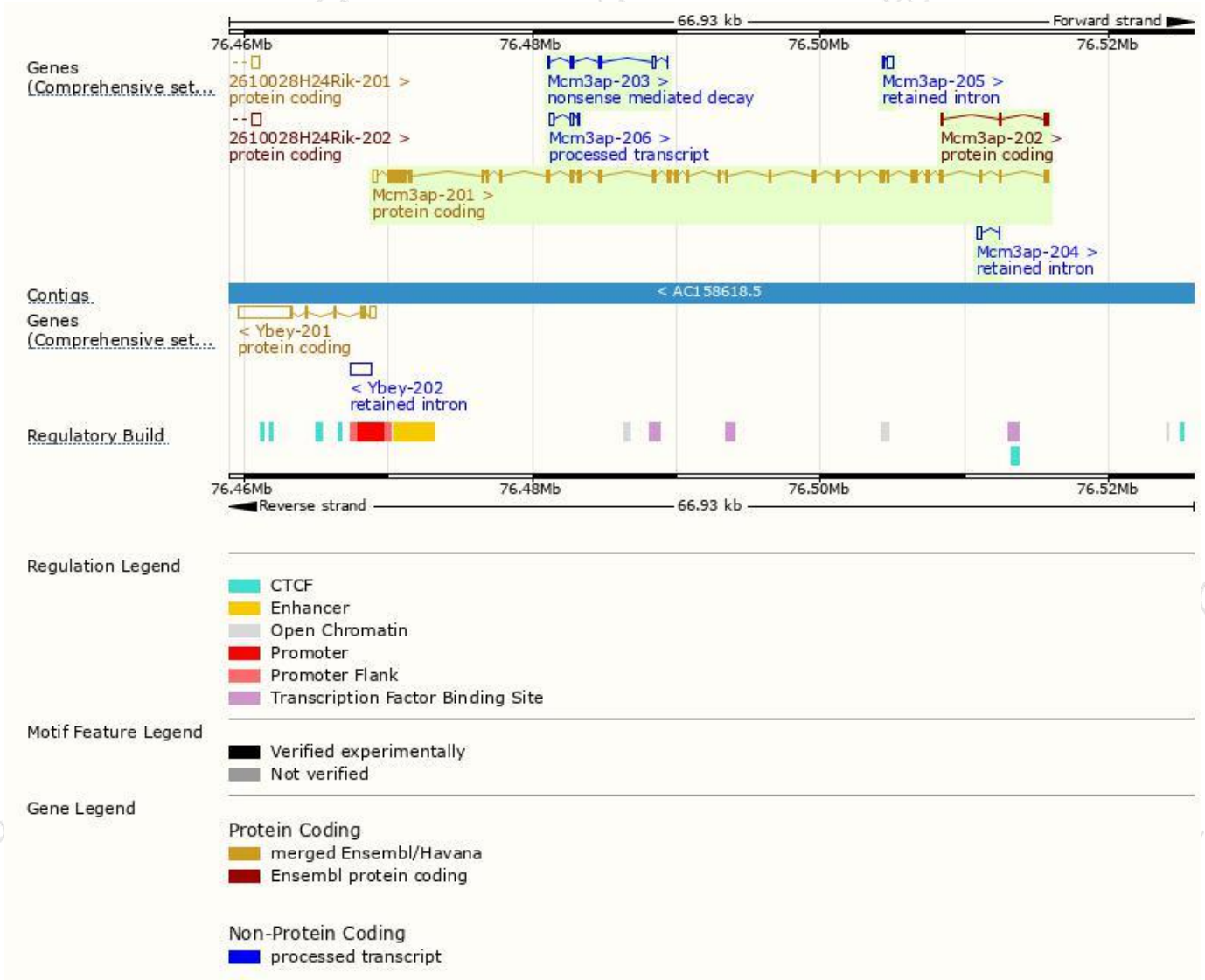
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Mcm3ap-201	ENSMUST00000170795.2	6427	1971aa	Protein coding	CCDS23947	Q9WUU9	TSL:1 GENCODE basic APPRIS P1
Mcm3ap-202	ENSMUST00000218361.1	465	116aa	Protein coding	-	A0A1W2P8E2	CDS 5' incomplete TSL:3
Mcm3ap-203	ENSMUST00000218881.1	578	81aa	Nonsense mediated decay	-	A0A1W2P6M1	CDS 5' incomplete TSL:5
Mcm3ap-206	ENSMUST00000220410.1	698	No protein	Processed transcript	-	-	TSL:3
Mcm3ap-205	ENSMUST00000219811.1	565	No protein	Retained intron	-	-	TSL:2
Mcm3ap-204	ENSMUST00000218904.1	378	No protein	Retained intron	-	-	TSL:3

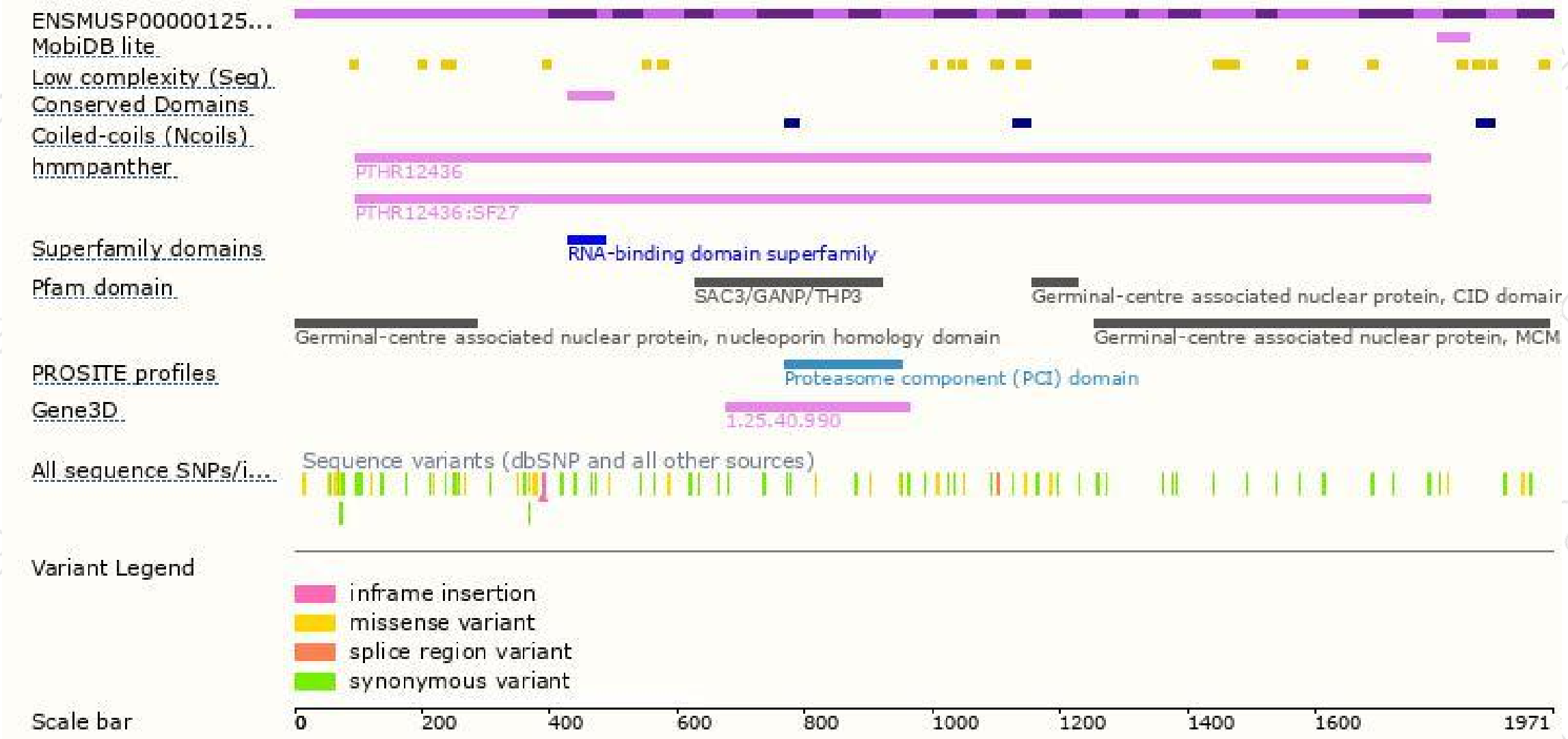
The strategy is based on the design of *Mcm3ap-201* transcript,The transcription is shown below



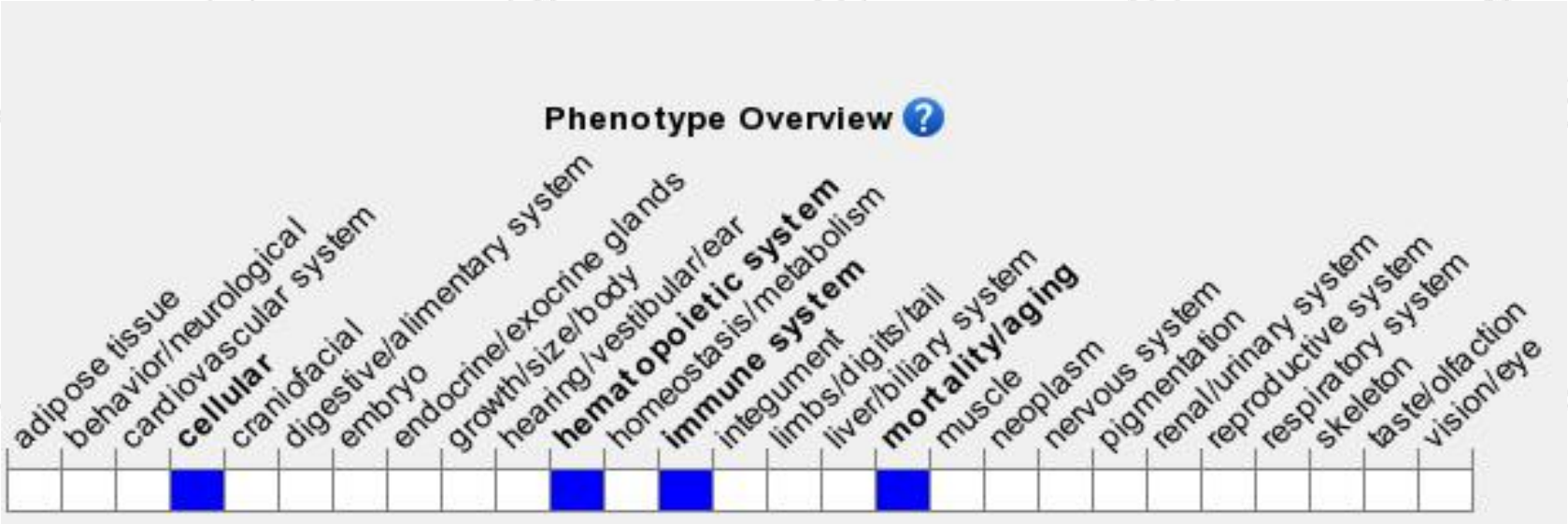
Genomic location distribution



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 die by E12.

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