

Mapk15 Cas9-CKO Strategy

Designer: QiongZhou

Project Overview

Project Name

Mapk15

Project type

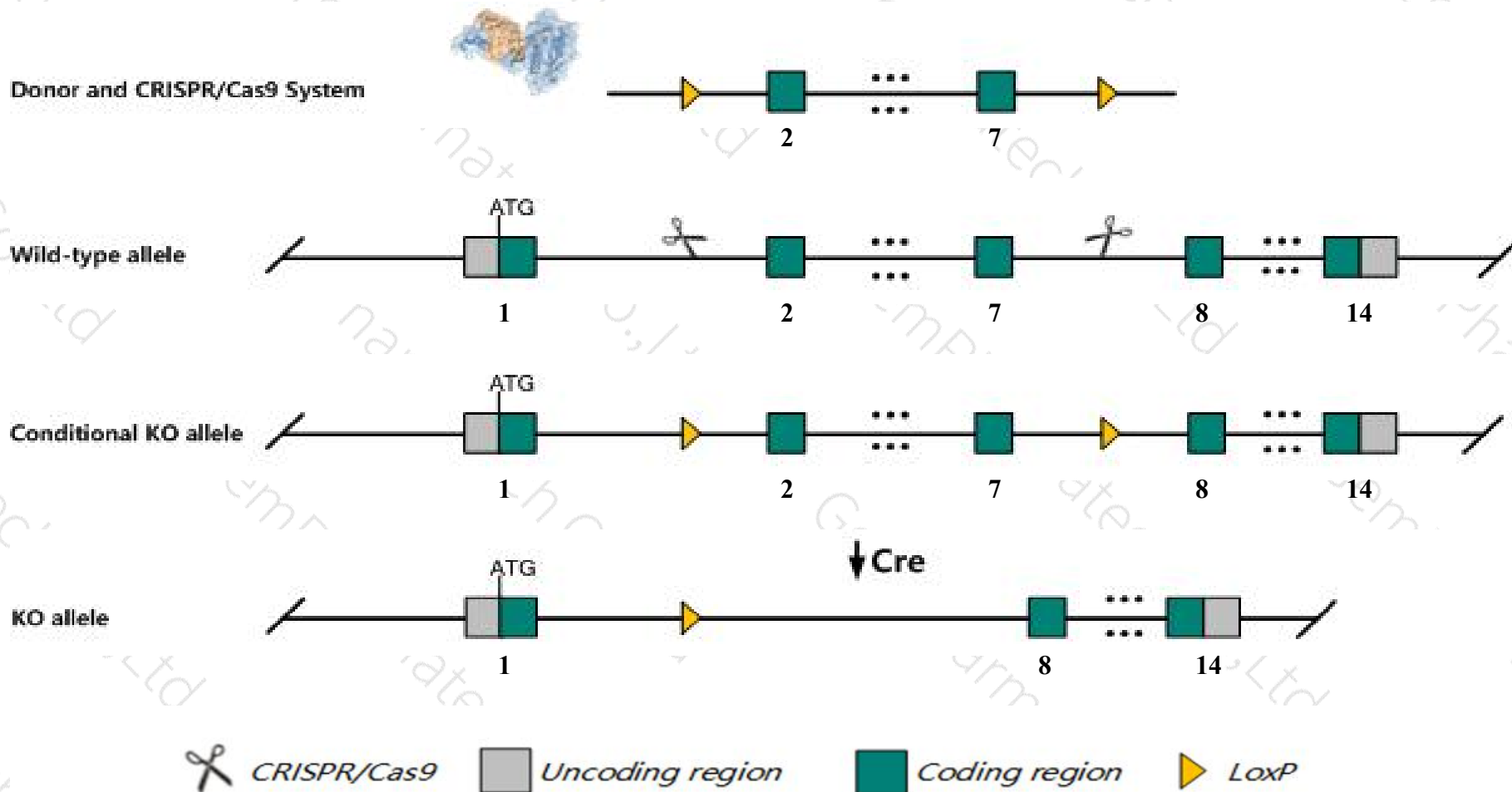
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Mapk15* gene. The schematic diagram is as follows:



Technical routes

- The *Mapk15* gene has 5 transcripts. According to the structure of *Mapk15* gene, exon2-exon7 of *Mapk15-201* (ENSMUST00000089669.5) transcript is recommended as the knockout region. The region contains 655bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Mapk15* 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.

Notice

- The *Mapk15* gene is located on the Chr15. 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)

Mapk15 mitogen-activated protein kinase 15 [Mus musculus (house mouse)]

Gene ID: 332110, updated on 31-Jan-2019

Summary



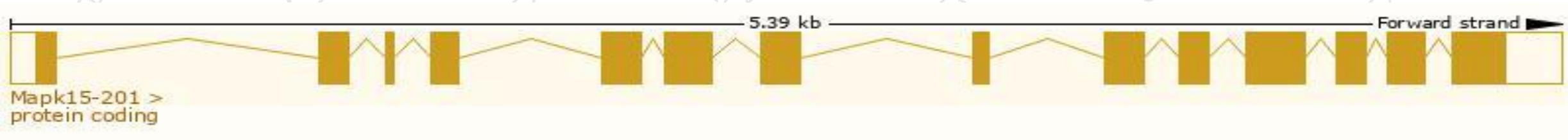
Official Symbol	Mapk15 provided by MGI
Official Full Name	mitogen-activated protein kinase 15 provided by MGI
Primary source	MGI:MGI:2652894
See related	Ensembl:ENSMUSG00000063704
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC048082, ERK-8
Expression	Biased expression in testis adult (RPKM 48.8), lung adult (RPKM 26.9) and 8 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

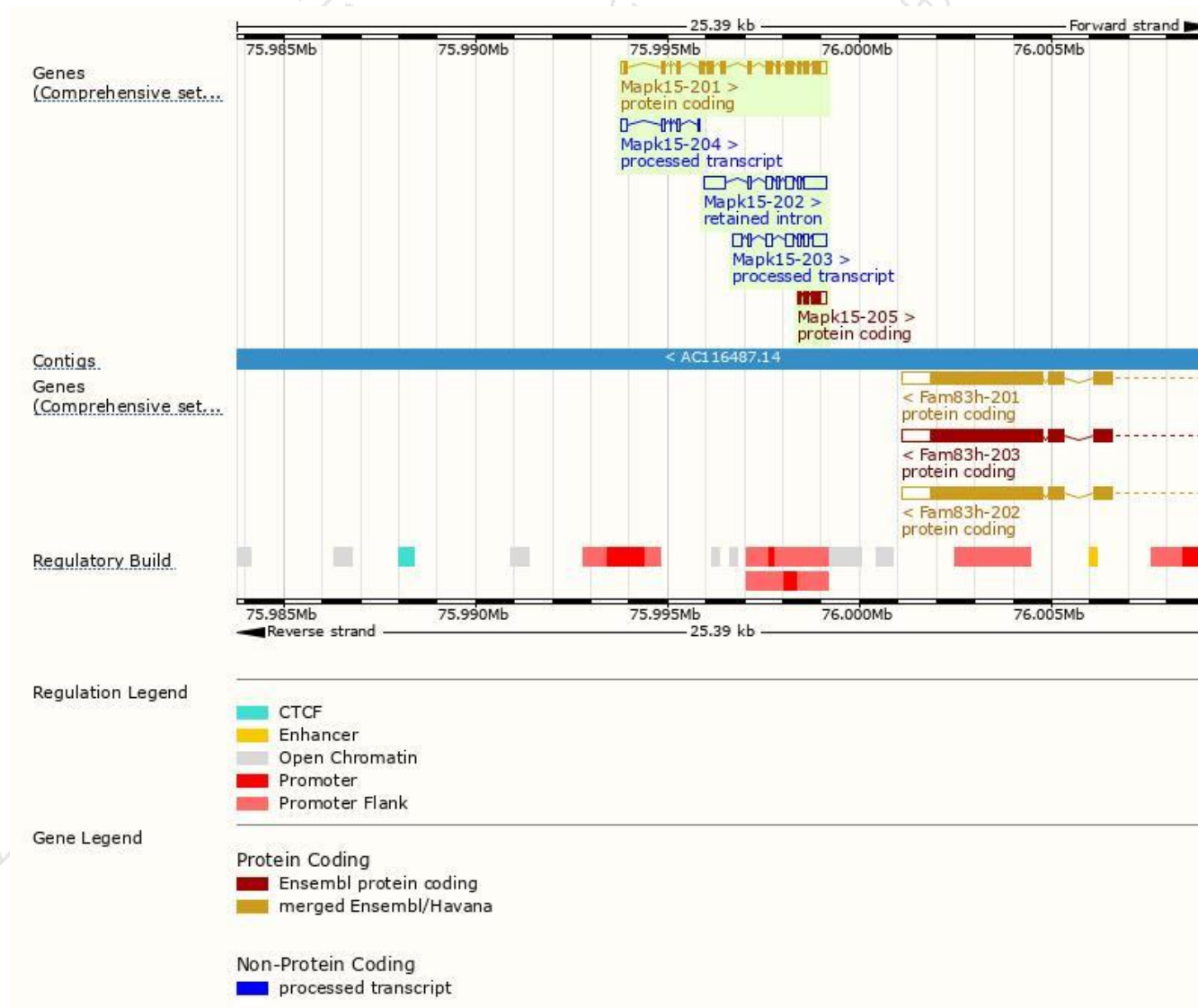
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Mapk15-201	ENSMUST00000089669.5	1931	549aa	Protein coding	CCDS27558	Q80Y86	TSL:1 GENCODE basic APPRIS P1
Mapk15-205	ENSMUST00000230929.1	626	145aa	Protein coding	-	A0A2R8VHA4	CDS 5' incomplete
Mapk15-202	ENSMUST00000160092.8	1788	No protein	Retained intron	-	-	TSL:1
Mapk15-203	ENSMUST00000160637.2	1250	No protein	lncRNA	-	-	TSL:1
Mapk15-204	ENSMUST00000161961.1	419	No protein	lncRNA	-	-	TSL:3

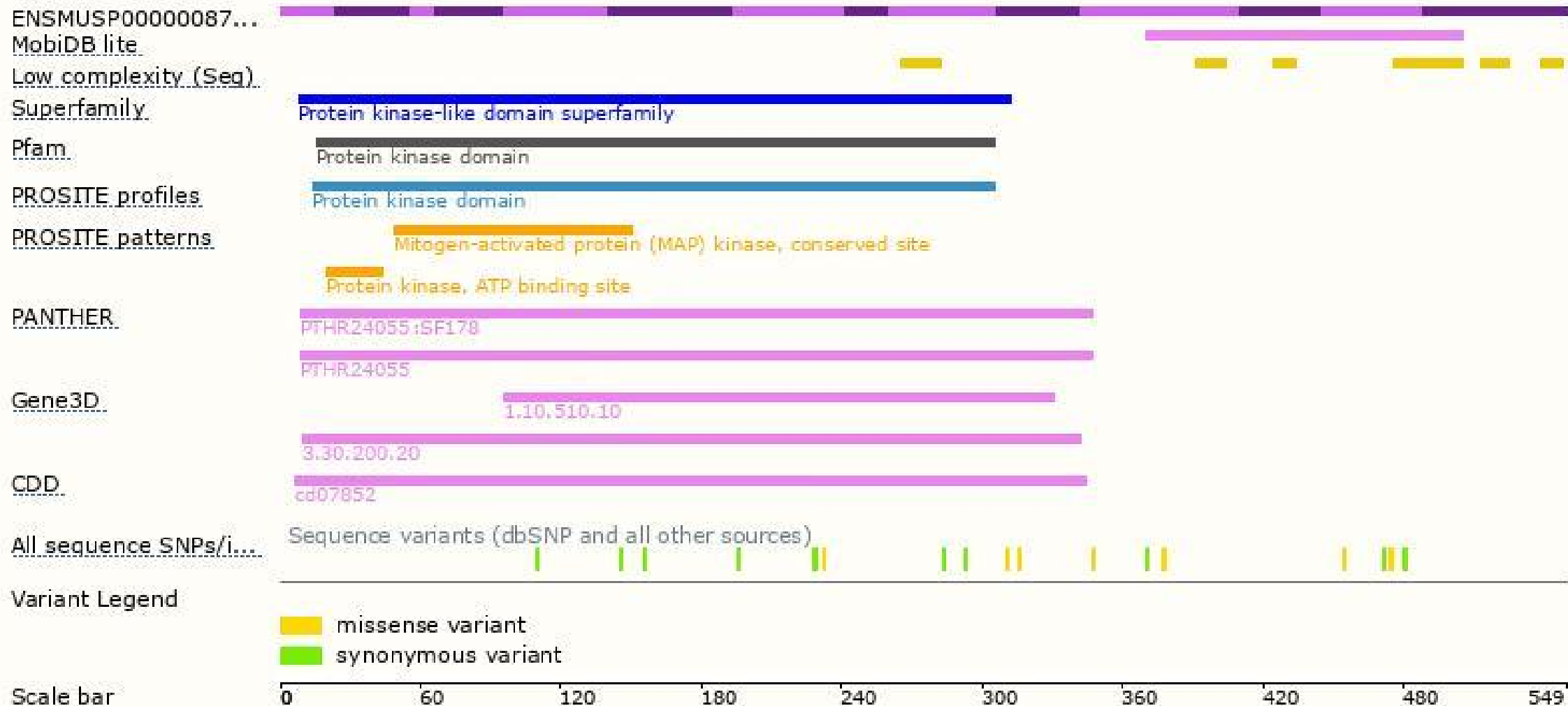
The strategy is based on the design of *Mapk15-201* transcript,the transcription is shown below:



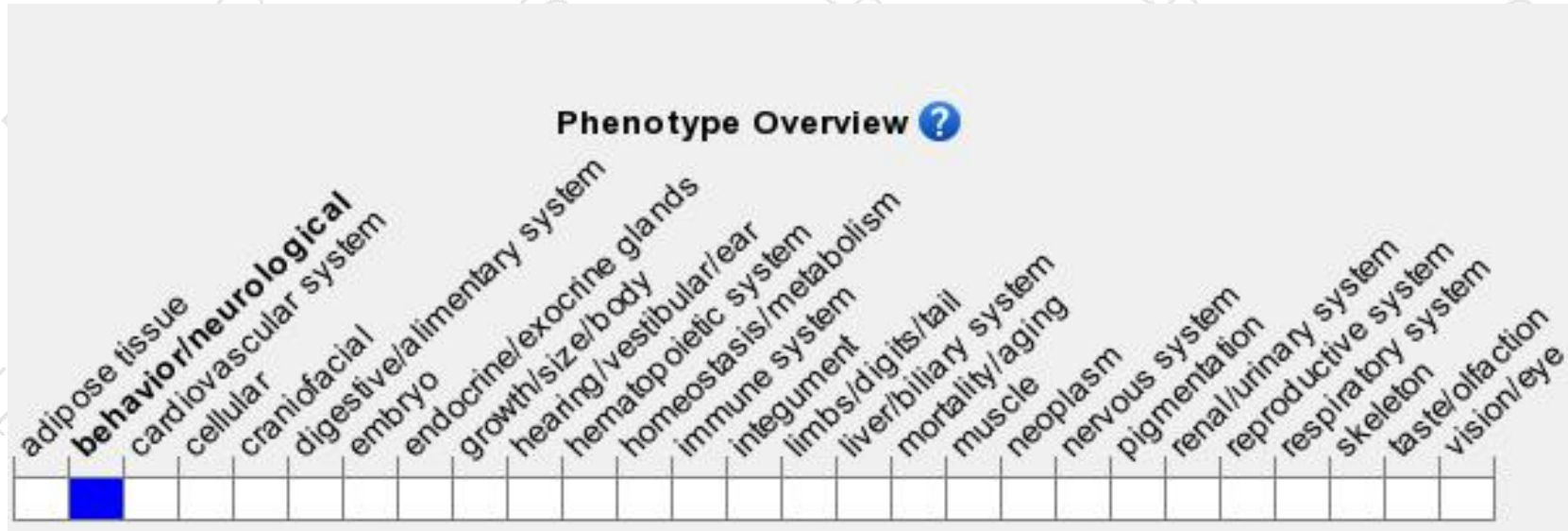
Genomic location distribution



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.

Tel: 400-9660890

