

Tm9sf3 Cas9-CKO Strategy

Designer: Shilei Zhu

Reviewer: Lingyan Wu

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Project Overview

Project Name

Tm9sf3

Project type

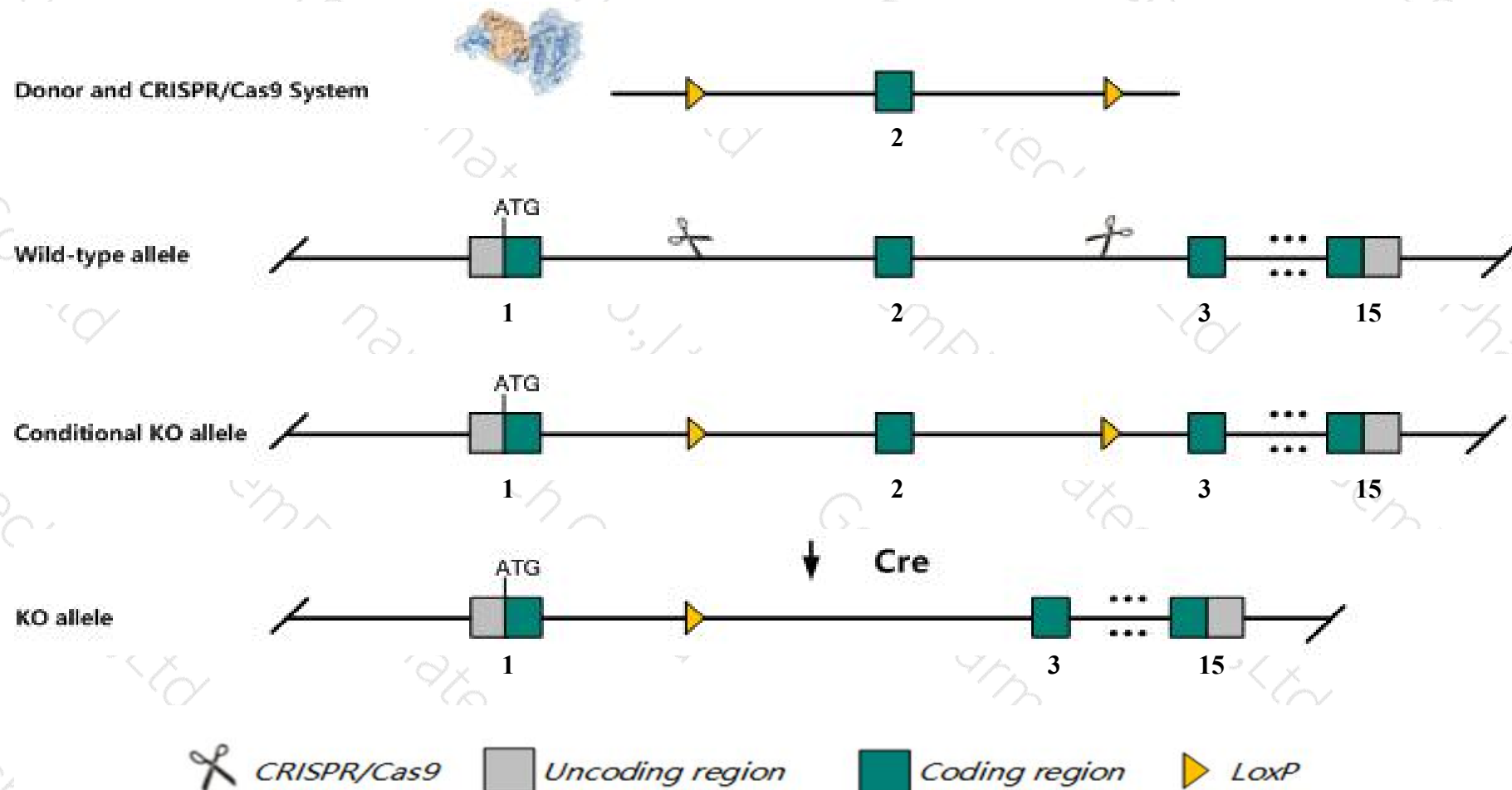
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tm9sf3* gene. The schematic diagram is as follows:



- The *Tm9sf3* gene has 2 transcripts. According to the structure of *Tm9sf3* gene, exon2 of *Tm9sf3*-202 (ENSMUST00000237871.1) transcript is recommended as the knockout region. The region contains 196bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tm9sf3* 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 *Tm9sf3* gene is located on the Chr19. 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)

Tm9sf3 transmembrane 9 superfamily member 3 [Mus musculus (house mouse)]

Gene ID: 107358, updated on 13-Mar-2020

Summary



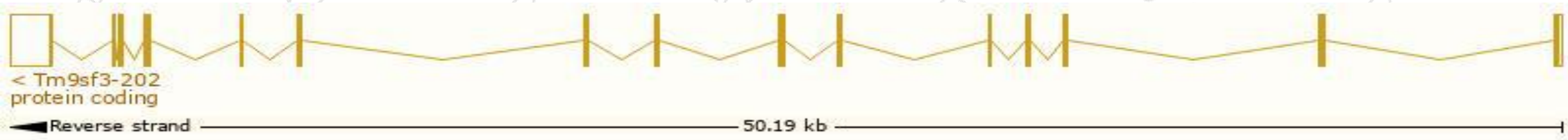
Official Symbol	Tm9sf3 provided by MGI
Official Full Name	transmembrane 9 superfamily member 3 provided by MGI
Primary source	MGI:MGI:1914262
See related	Ensembl:ENSMUSG00000025016
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810073M23Rik, 2810031D16Rik, AI115521, AI413748, AW146116, AW549777, Smbp, mKIAA4036
Expression	Ubiquitous expression in placenta adult (RPKM 39.6), bladder adult (RPKM 34.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

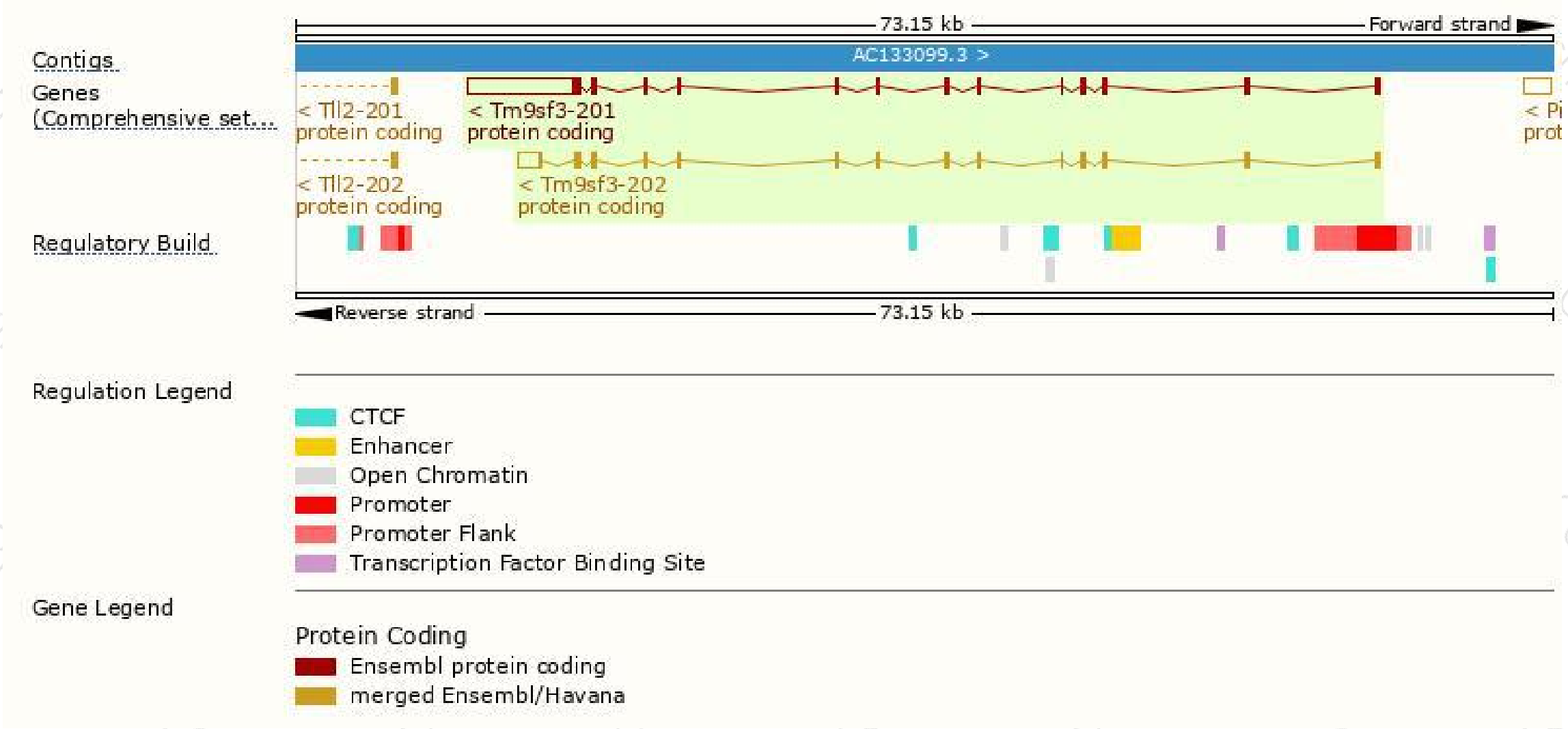
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tm9sf3-202	ENSMUST00000237871.1	3170	587aa	Protein coding	CCDS29808	Q9ET30	GENCODE basic APPRIS P1
Tm9sf3-201	ENSMUST00000025989.9	8096	584aa	Protein coding	-	A0A498WGK6	TSL:1 GENCODE basic

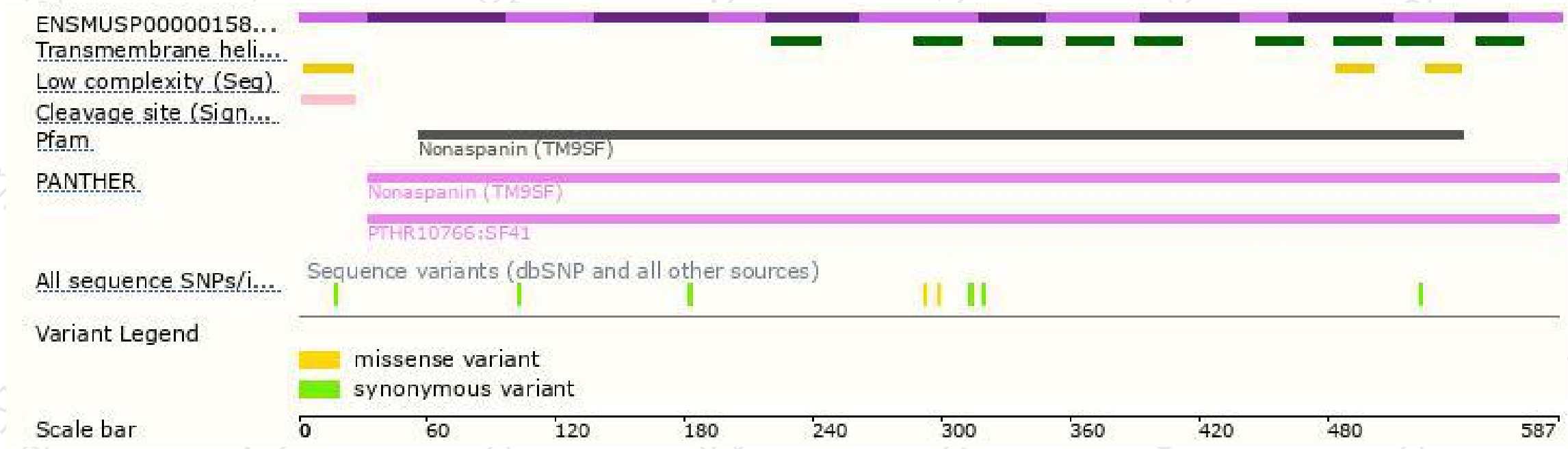
The strategy is based on the design of *Tm9sf3-202* transcript,the transcription is shown below:



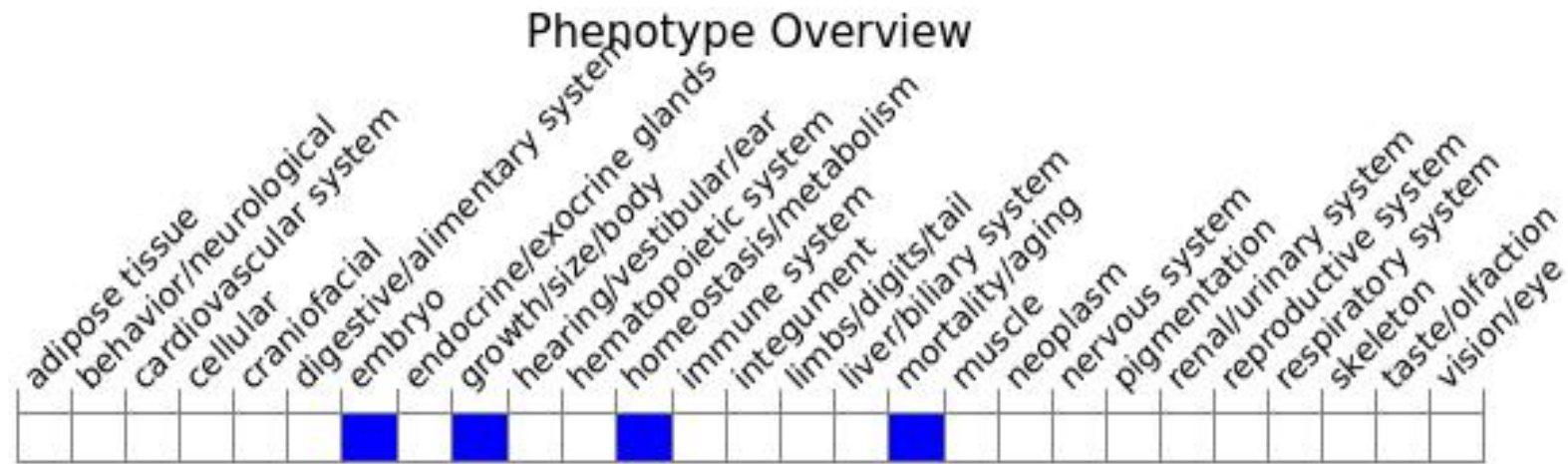
Genomic location distribution



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

