

Slc25a1 Cas9-CKO Strategy

Designer: Xueting Zhang

Reviewer: Yanhua Shen

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Project Overview

Project Name

Slc25a1

Project type

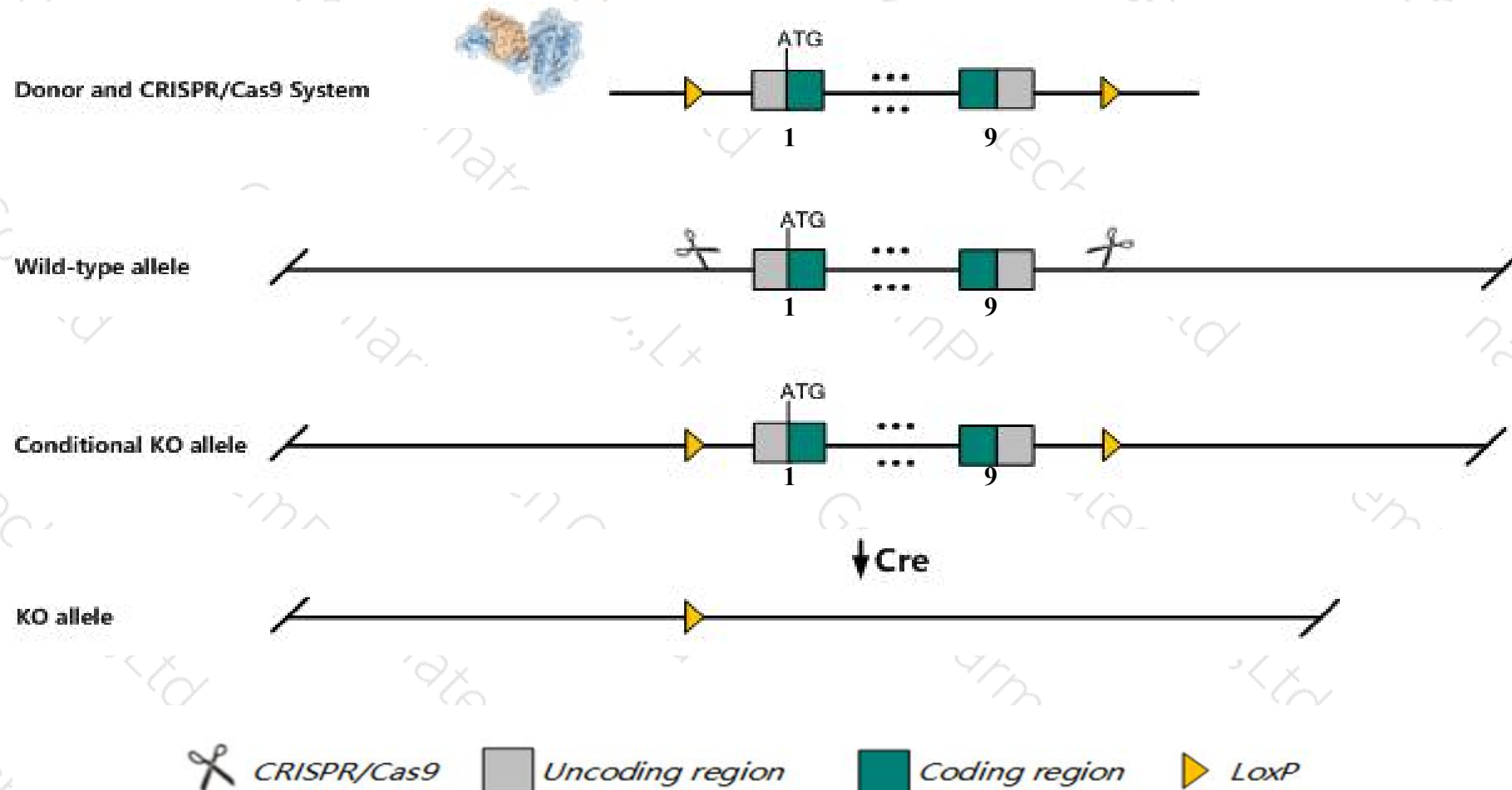
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc25a1* gene. The schematic diagram is as follows:



- The *Slc25a1* gene has 6 transcripts. According to the structure of *Slc25a1* gene, exon1-exon9 of *Slc25a1-201* (ENSMUST00000003622.15) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc25a1* 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.

- The floxed region is near to the C-terminal of *AA914427* gene, this strategy may influence the regulatory function of the C-terminal of *AA914427* gene.
- The *Slc25a1* gene is located on the Chr16. 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)

Slc25a1 solute carrier family 25 (mitochondrial carrier, citrate transporter), member 1 [*Mus musculus* (house mouse)]

Gene ID: 13358, updated on 12-Aug-2019

Summary

Official Symbol Slc25a1 provided by [MGI](#)
Official Full Name solute carrier family 25 (mitochondrial carrier, citrate transporter), member 1 provided by [MGI](#)
Primary source [MGI:MGI:1345283](#)
See related [Ensembl:ENSMUSG00000003528](#)
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 Ctp; Dgsj; Slc20a3; AI194714; 1300019P08Rik; 2610100G11Rik
Expression Broad expression in mammary gland adult (RPKM 548.0), subcutaneous fat pad adult (RPKM 316.7) and 16 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 16 A3; 16 11.11 cM

See Slc25a1 in [Genome Data Viewer](#)

Exon count: 9

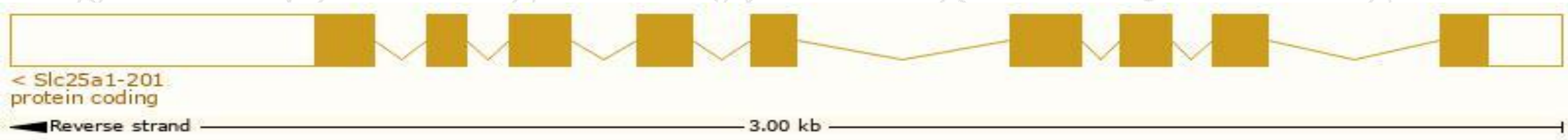
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	16	NC_000082.6 (17925211..17928219, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	16	NC_000082.5 (17925304..17928312, complement)

Transcript information (Ensembl)

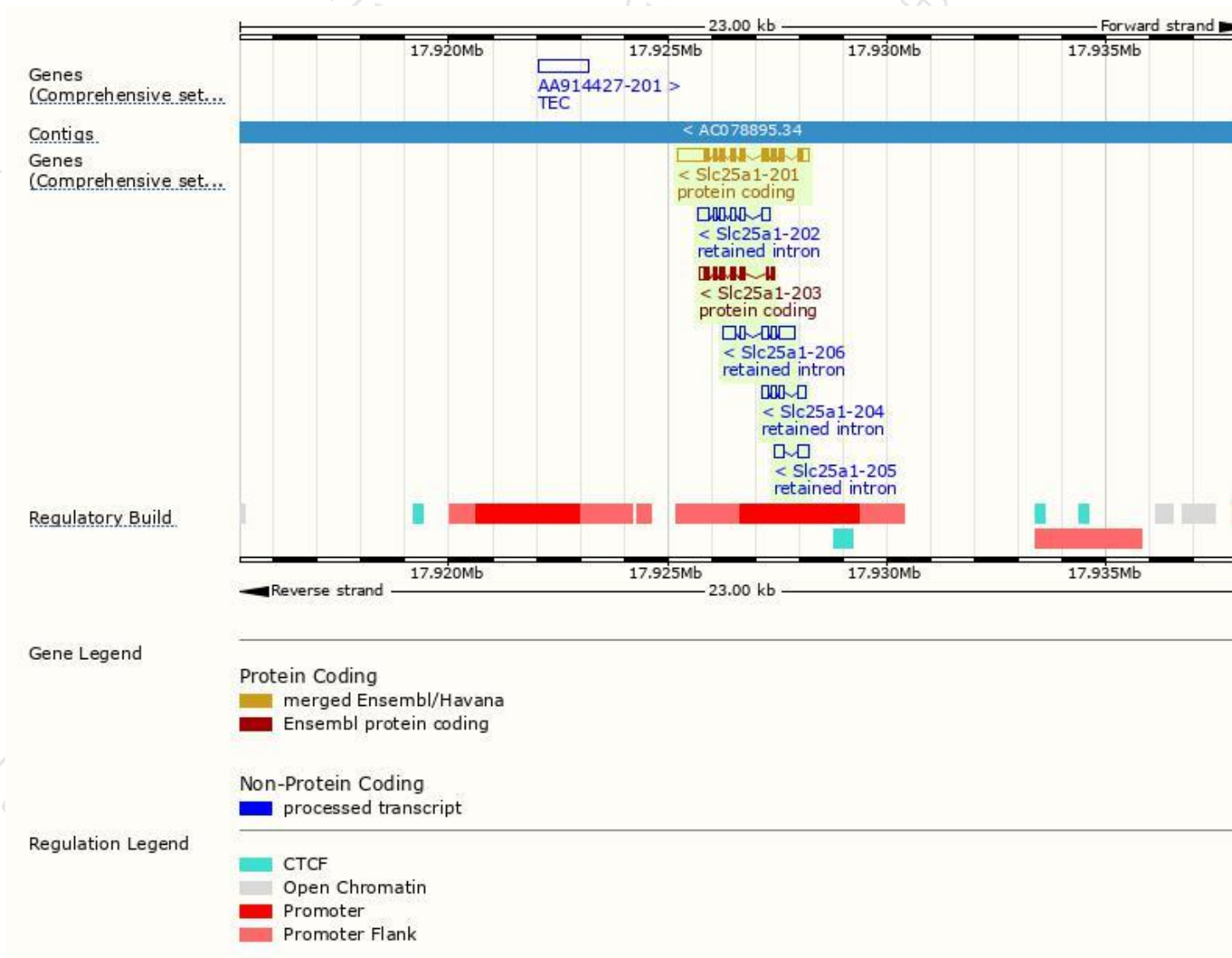
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc25a1-201	ENSMUST00000003622.15	1666	311aa	Protein coding	CCDS28014	Q8JZU2	TSL:1 GENCODE basic APPRIS P1
Slc25a1-203	ENSMUST00000131507.1	689	197aa	Protein coding	-	F6VVY4	CDS 5' incomplete TSL:3
Slc25a1-206	ENSMUST00000150925.7	941	No protein	Retained intron	-	-	TSL:2
Slc25a1-202	ENSMUST00000129270.7	816	No protein	Retained intron	-	-	TSL:2
Slc25a1-204	ENSMUST00000142022.1	495	No protein	Retained intron	-	-	TSL:2
Slc25a1-205	ENSMUST00000147384.1	460	No protein	Retained intron	-	-	TSL:2

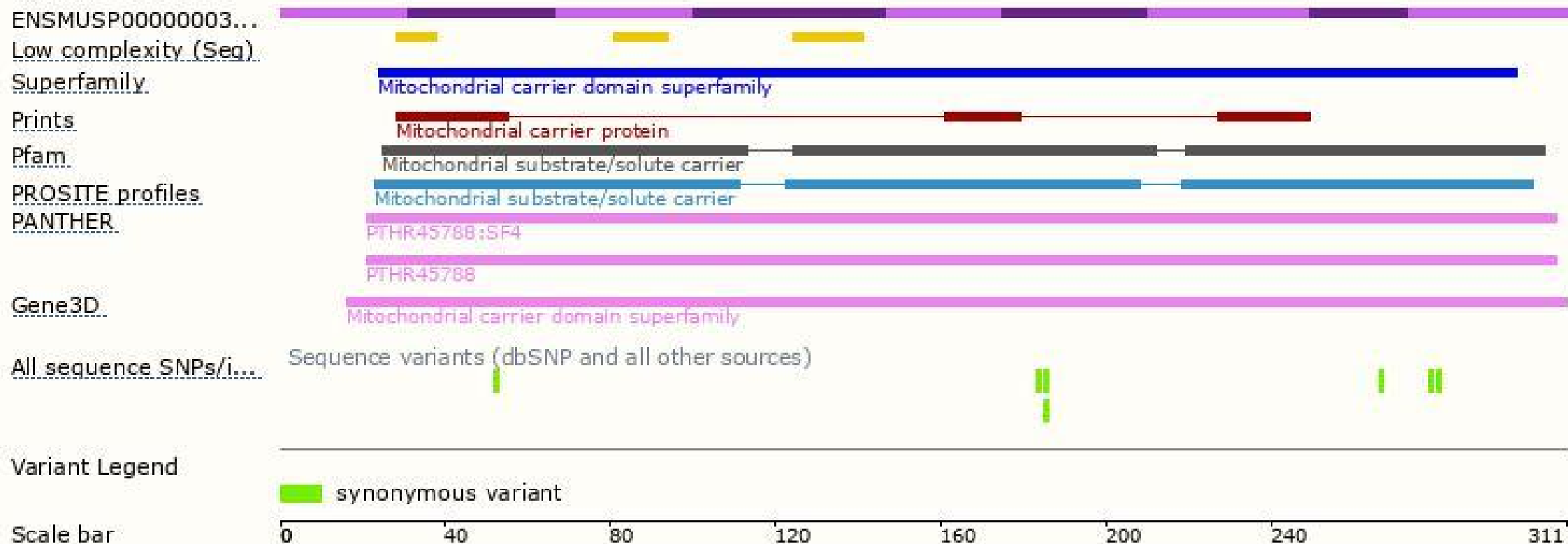
The strategy is based on the design of *Slc25a1-201* transcript,The transcription is shown below



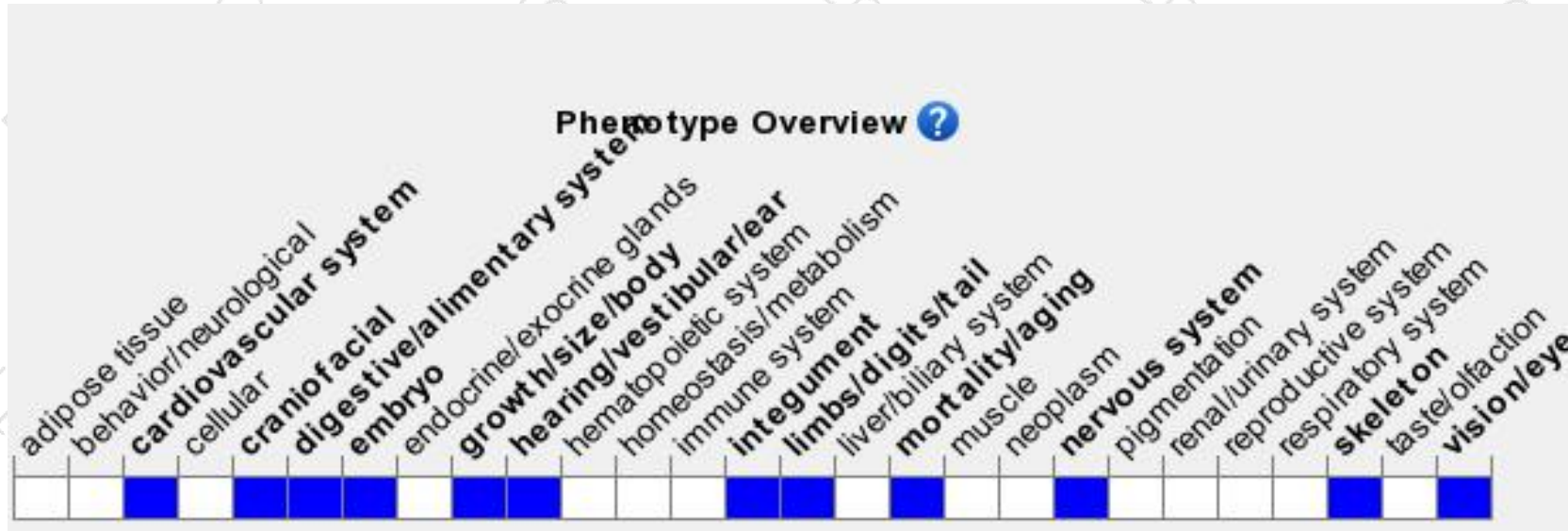
Genomic location distribution



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

