

Slco2a1 Cas9-KO Strategy

Designer: Daohua Xu

Project Overview

Project Name

Slco2a1

Project type

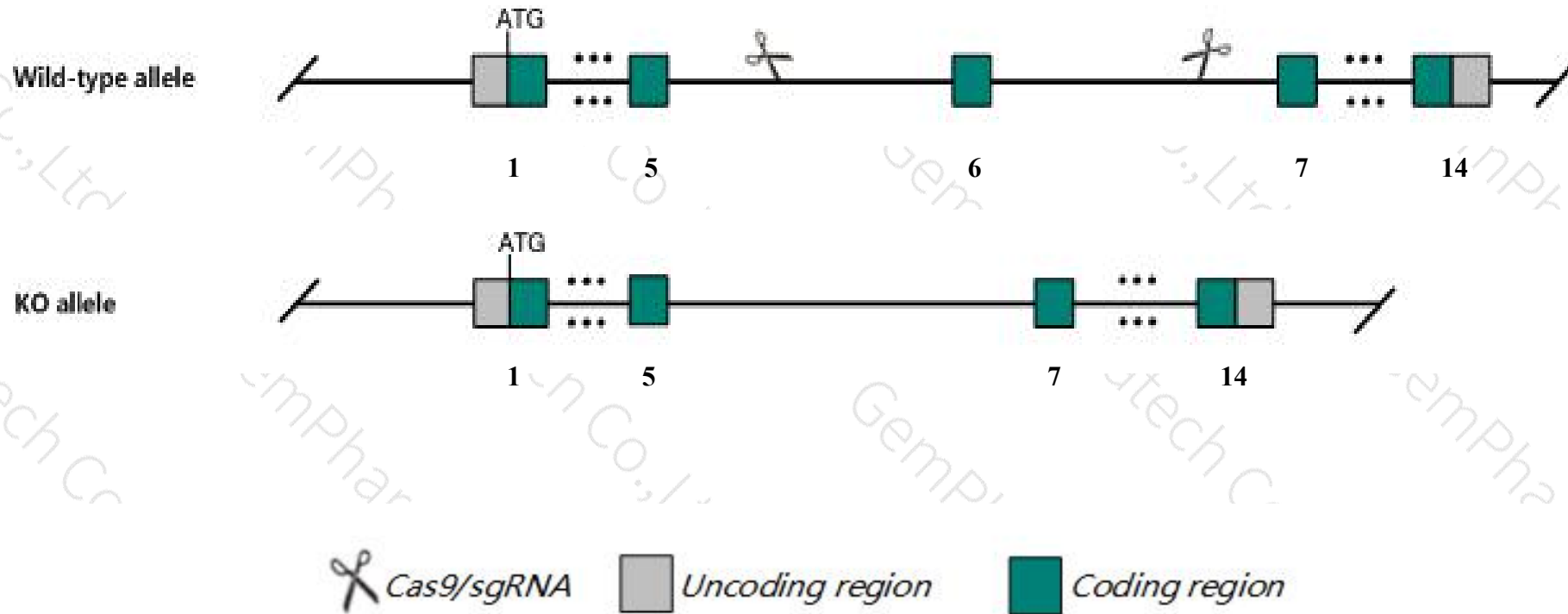
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slco2a1* gene. The schematic diagram is as follows:



- The *Slco2a1* gene has 4 transcripts. According to the structure of *Slco2a1* gene, exon6 of *Slco2a1-201* (ENSMUST00000035148.12) transcript is recommended as the knockout region. The region contains 137bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slco2a1* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit prenatel or early psotnatal lethality due to a patent ductus arteriosus and abnormal protaglandin metabolism.
- The *Slco2a1* gene is located on the Chr9. 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information (NCBI)

Slco2a1 solute carrier organic anion transporter family, member 2a1 [Mus musculus (house mouse)]

Gene ID: 24059, updated on 31-Jan-2019

Summary



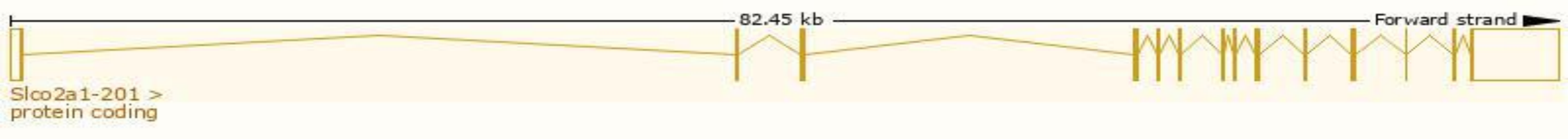
Official Symbol	Slco2a1 provided by MGI
Official Full Name	solute carrier organic anion transporter family, member 2a1 provided by MGI
Primary source	MGI:MGI:1346021
See related	Ensembl:ENSMUSG00000032548
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310021C19Rik, Pgt, Slc21a2
Expression	Biased expression in lung adult (RPKM 114.3), spleen adult (RPKM 22.6) and 12 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

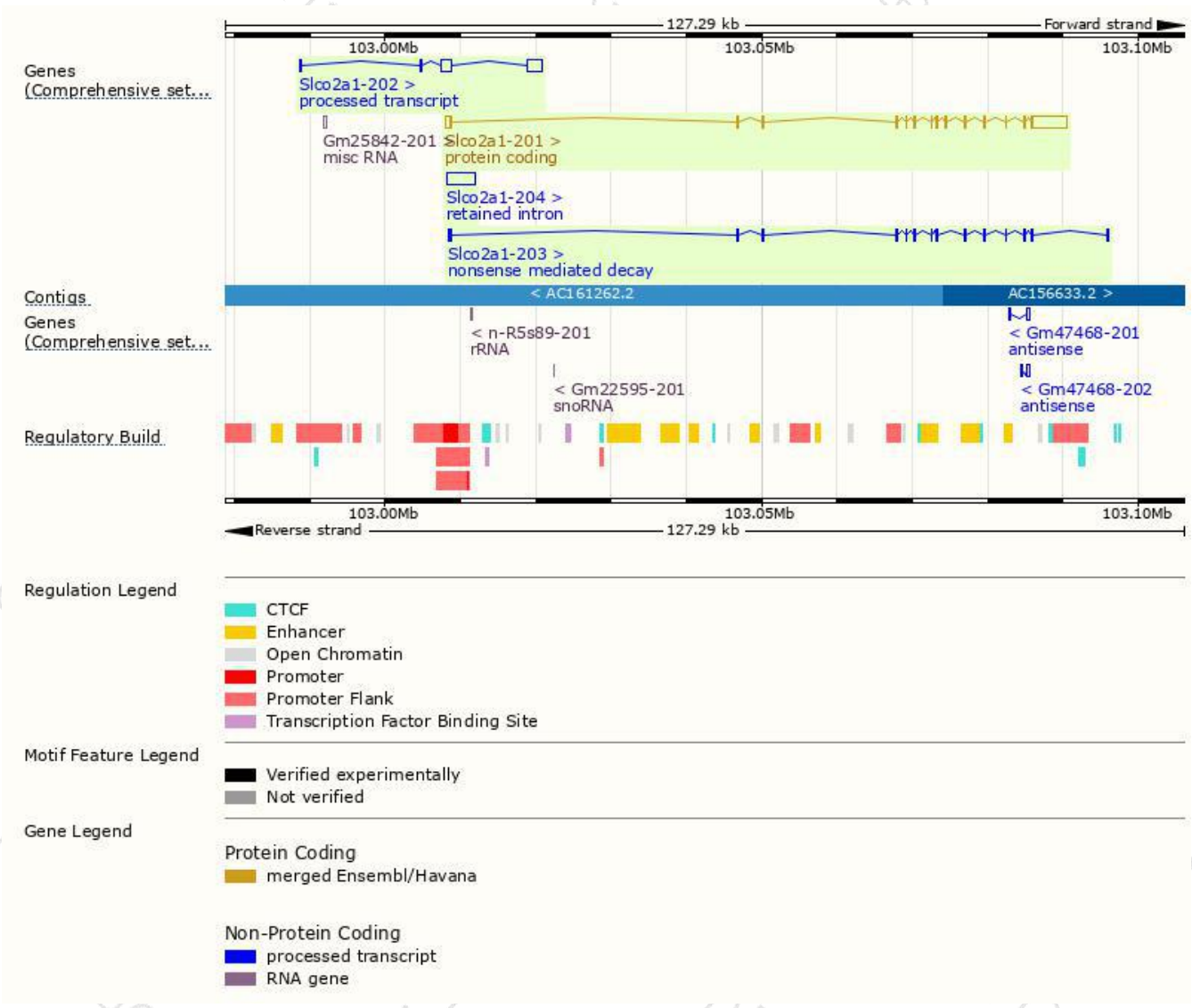
The gene has 4 transcript,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slco2a1-201	ENSMUST00000035148.12	7122	643aa	Protein coding	CCDS23448	Q3TED0 Q9EPT5	TSL:1 GENCODE basic APPRIS P1
Slco2a1-203	ENSMUST00000188664.1	2196	414aa	Nonsense mediated decay	-	Q9EPT5	TSL:1
Slco2a1-202	ENSMUST00000185215.1	3686	No protein	Processed transcript	-	-	TSL:1
Slco2a1-204	ENSMUST00000190892.1	3754	No protein	Retained intron	-	-	TSL:NA

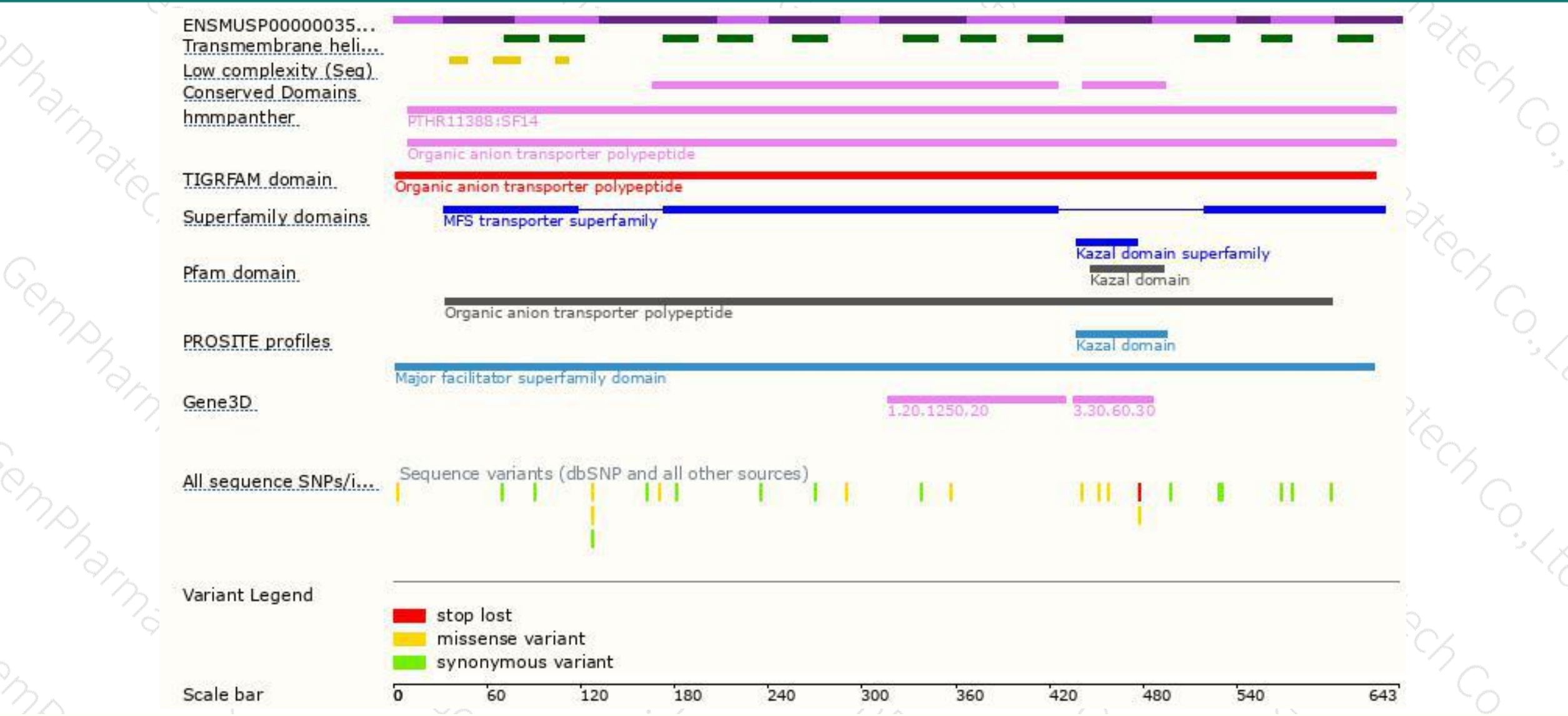
The strategy is based on the design of *Slco2a1-201* transcript,The transcription is shown below



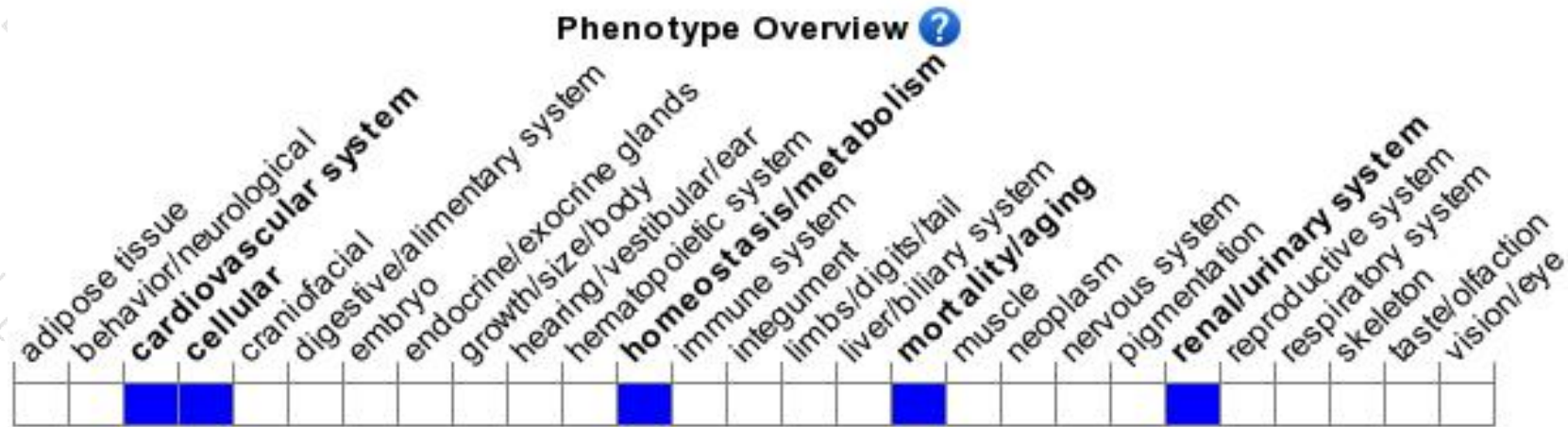
Genomic location distribution



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 knock-out allele exhibit prenatel or early psotnatal lethality due to a patent ductus arteriosus and abnormal protaglandin metabolism.

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

Tel: 025-5864 1534

