Slc22a6 Cas9-KO Strategy

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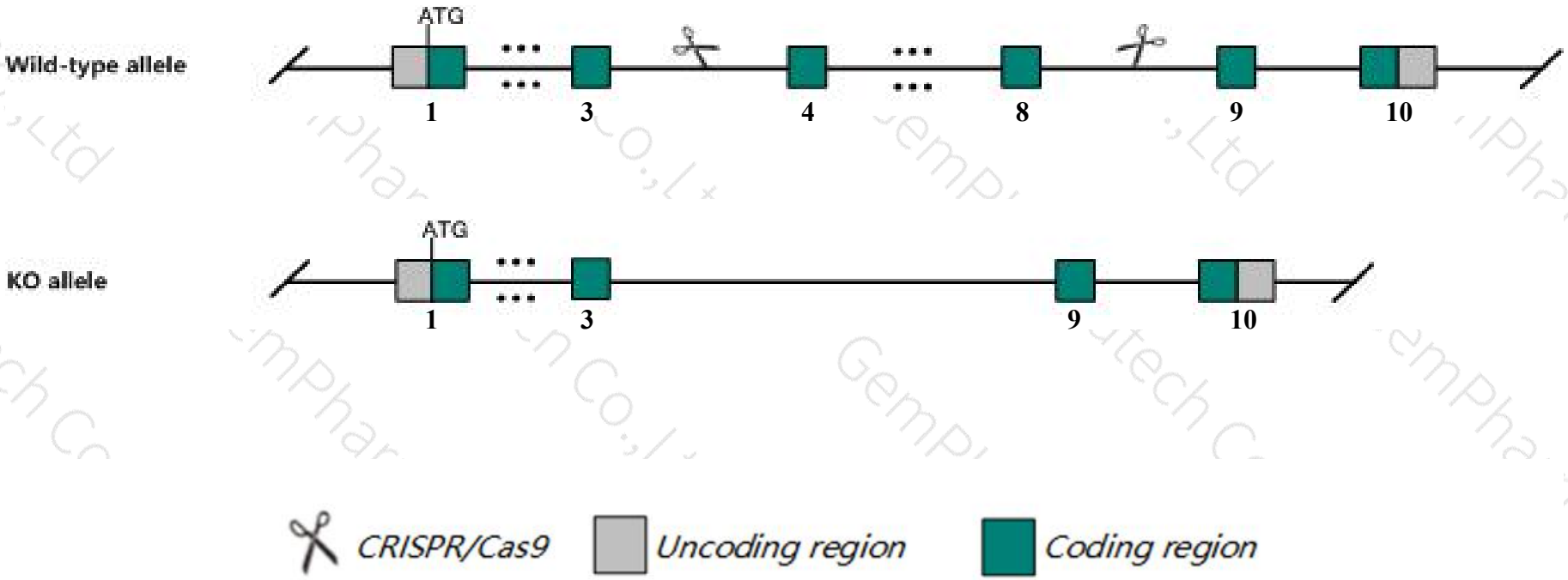
Reviewer:	**Xueting Zhang**
Design Date:	**2019-11-29**

Project Overview

Project Name	***Slc22a6***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc22a6* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc22a6* gene has 1 transcript. According to the structure of *Slc22a6* gene, exon4-exon8 of *Slc22a6-201* (ENSMUST00000010250.3) transcript is recommended as the knockout region.The region contains 733bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc22a6* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Homozygous mutation of this gene may result in increased thymus weight or impaired renal organic anion excretion for a subset of organic anions.

- The *Slc22a6* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information （NCBI）

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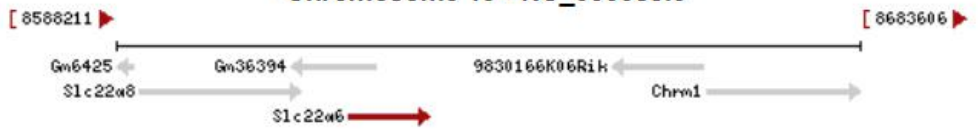
Slc22a6 solute carrier family 22 (organic anion transporter), member 6 [*Mus musculus* (house mouse)]

Gene ID: 18399, updated on 10-Oct-2019

Summary

Official Symbol	Slc22a6 provided by MGI
Official Full Name	solute carrier family 22 (organic anion transporter), member 6 provided by MGI
Primary source	MGI:MGI:892001
See related	Ensembl:ENSMUSG00000024650
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	NKT; Oat1; mOat1; Orctl1
Expression	Restricted expression toward kidney adult (RPKM 141.9) See more
Orthologs	human all

Chromosome 19 - NC_000085.6

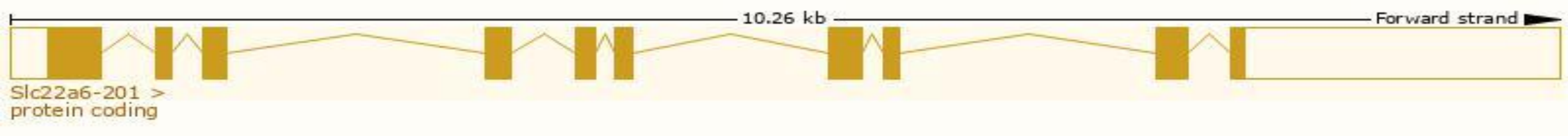


Transcript information（Ensembl）

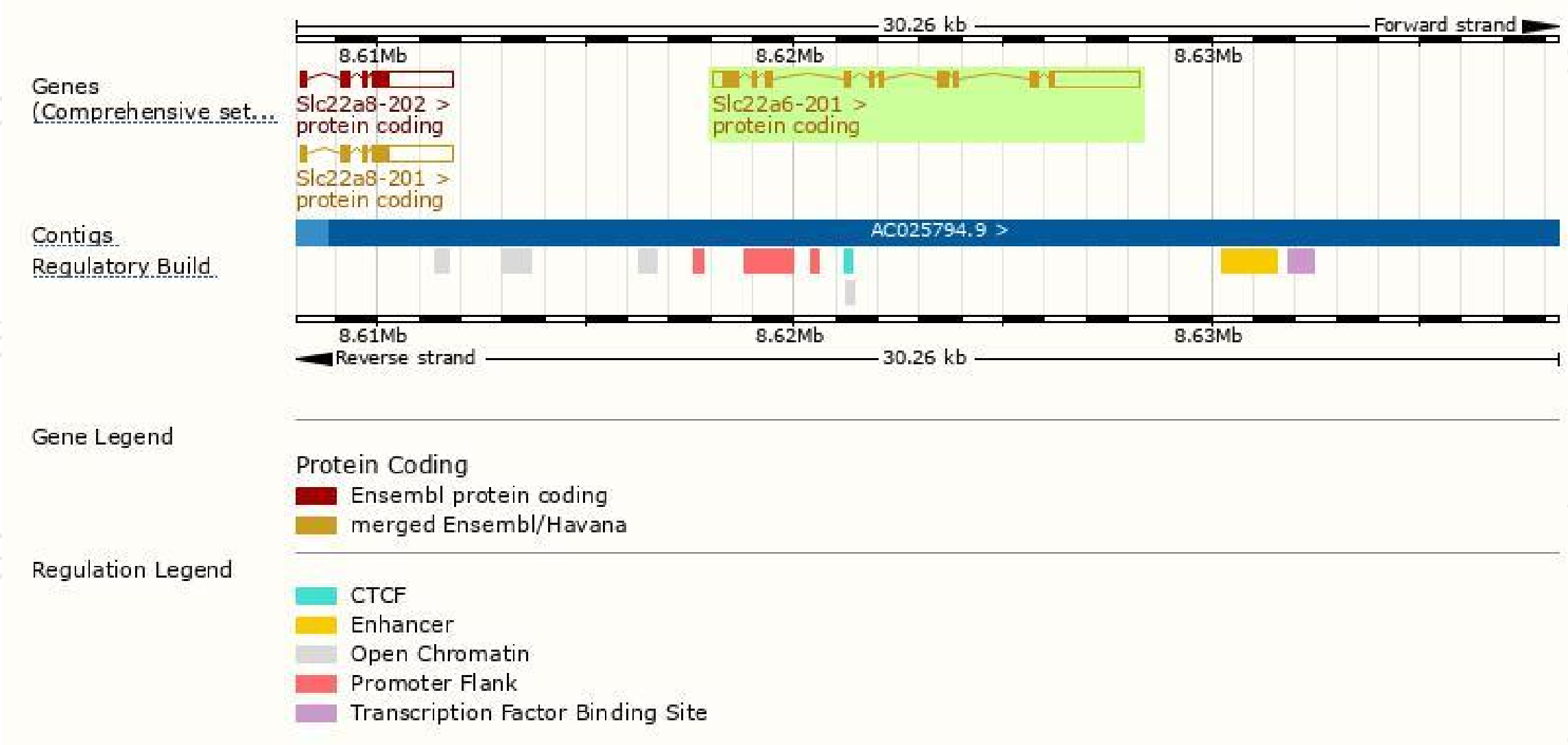
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Translation ID	Biotype	CCDS	UniProt	Flags
Slc22a6-201	ENSMUST00000010250.3	3983	545aa	ENSMUSP00000010250.2	Protein coding	CCDS29538	Q8VC69	TSL:1 GENCODE basic APPRIS P1

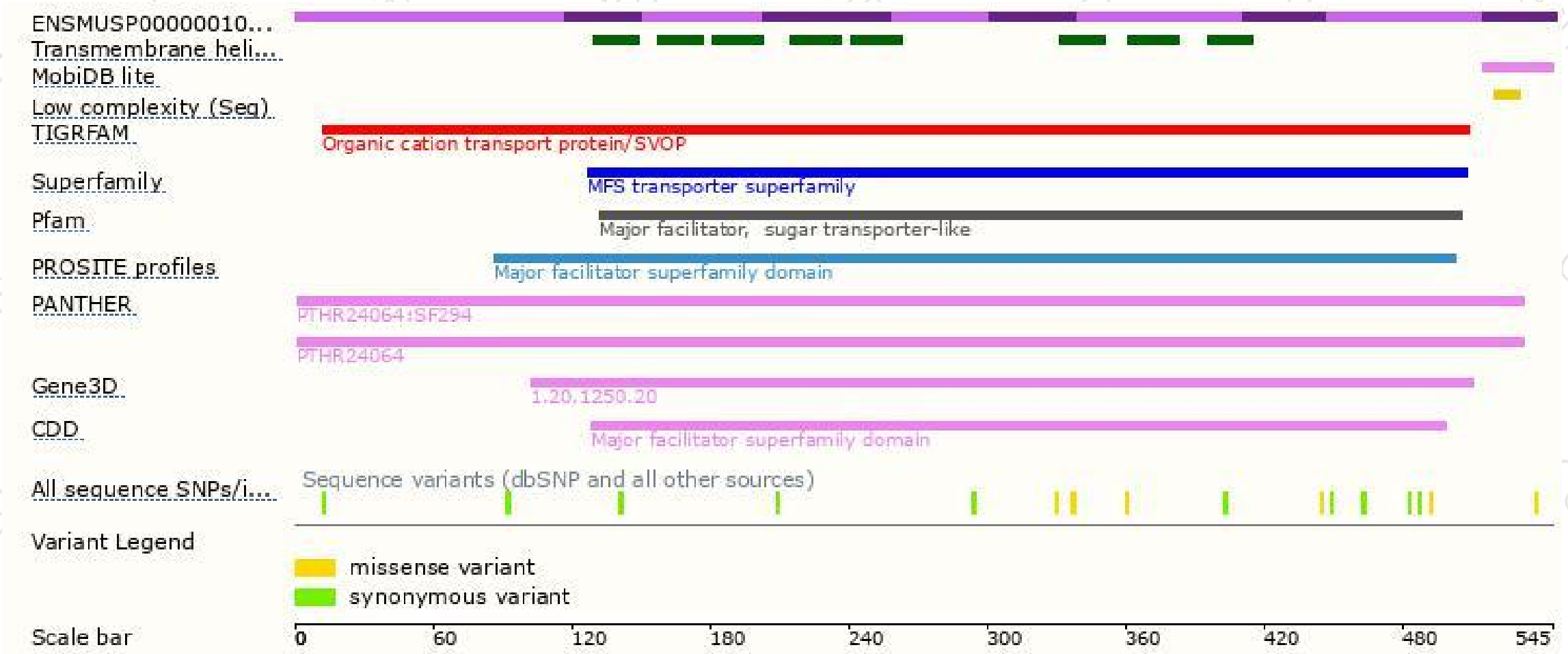
The strategy is based on the design of *Slc22a6-201* transcript,The transcription is shown below



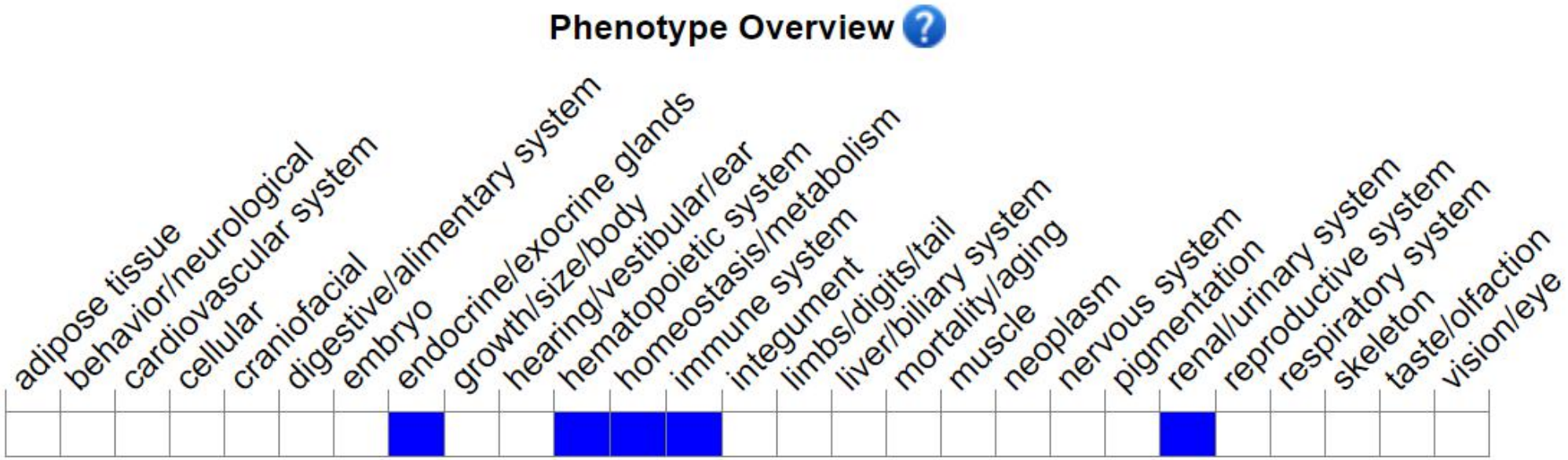
Genomic location distribution



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,Homozygous mutation of this gene may result in increased thymus weight or impaired renal organic anion excretion for a subset of organic anions.

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

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