Slc26a4 Cas9-KO Strategy

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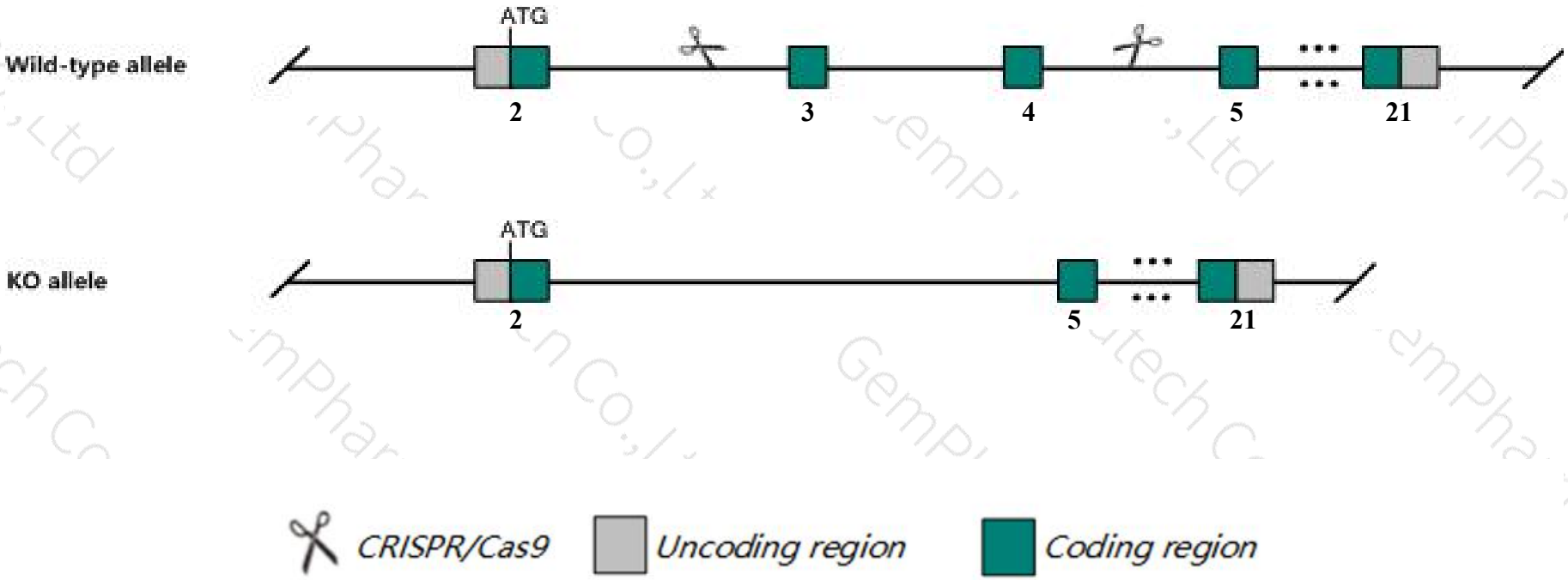
Project Overview

Project Name	***Slc26a4***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc26a4* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc26a4* gene has 2 transcripts. According to the structure of *Slc26a4* gene, exon3-exon4 of *Slc26a4-201* (ENSMUST00000001253.7) transcript is recommended as the knockout region.The region contains 251bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc26a4* gene. The brief process is as follows: CRISPR/Cas9 syste

Notice

➢ According to the existing MGI data,Homozygous null mutants are completely deaf with vestibular dysfunction. Mutants show endolymphatic dilatation, degeneration of sensory cells and malformations of otoconia and otoconial membranes. They display unsteady gait and circling and head bobbing.

➢ Transcript *Slc26a4*-202 may not be affected.

➢ The *Slc26a4* gene is located on the Chr12. 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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Slc26a4 solute carrier family 26, member 4 [*Mus musculus* (house mouse)]

Gene ID: 23985, updated on 12-Aug-2019

Summary

Official Symbol	Slc26a4 provided by MGI
Official Full Name	solute carrier family 26, member 4 provided by MGI
Primary source	MGI:MGI:1346029
See related	Ensembl:ENSMUSG00000020651
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	Pds; pendrin
Expression	Biased expression in kidney adult (RPKM 9.5), adrenal adult (RPKM 0.9) and 2 other tissues See more
Orthologs	human all

Genomic context

Location: 12; 12 A2

See Slc26a4 in Genome Data Viewer

Exon count: 22

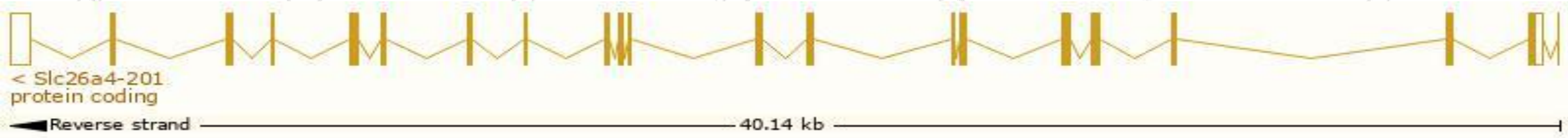
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	12	NC_000078.6 (31519814..31560055, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	12	NC_000078.5 (32204684..32244834, complement)

Transcript information（Ensembl）

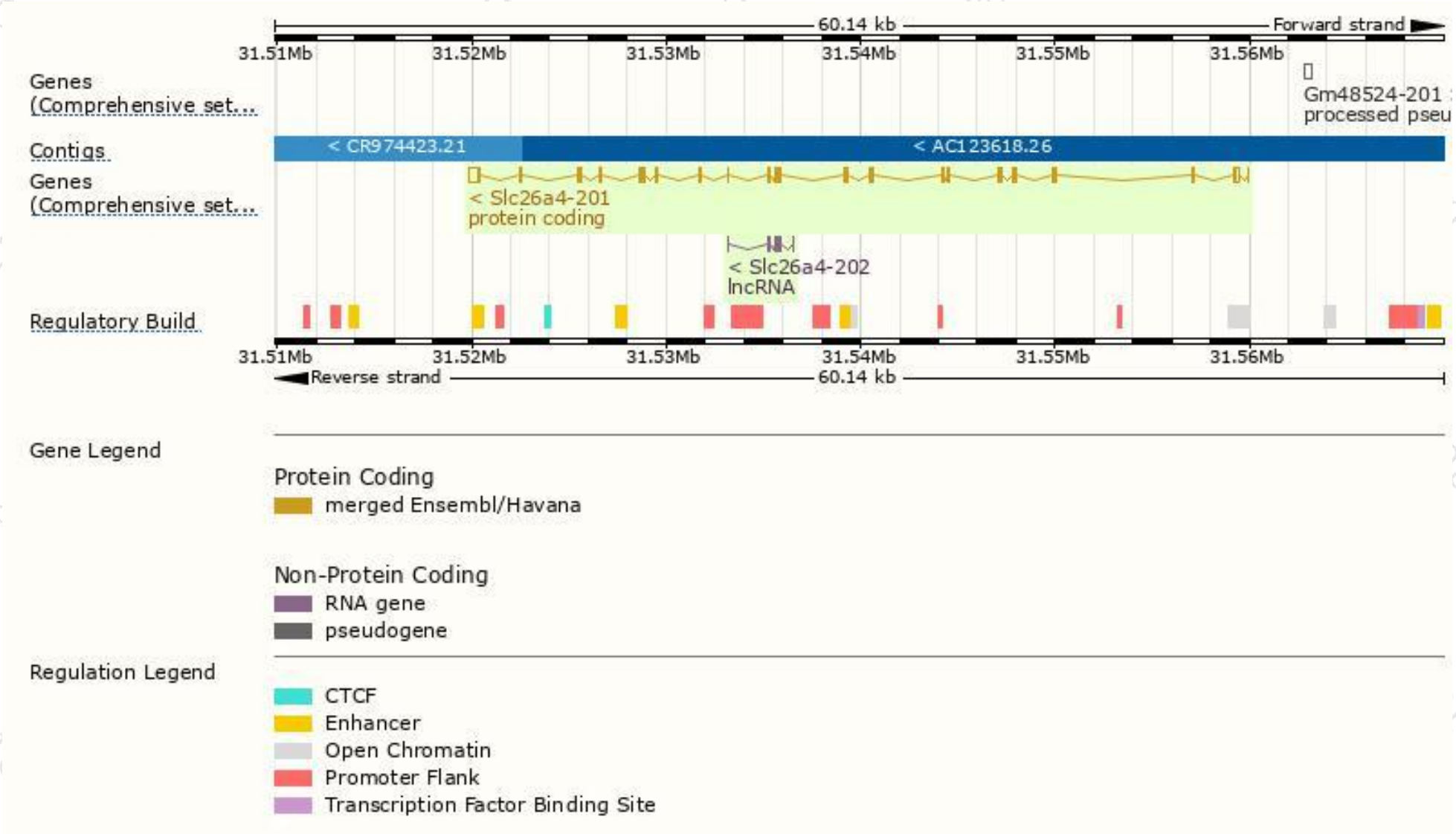
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc26a4-201	ENSMUST00000001253.7	3075	780aa	Protein coding	CCDS36429	Q9R155	TSL:1 GENCODE basic APPRIS P1
Slc26a4-202	ENSMUST00000218992.1	385	No protein	lncRNA	-	-	TSL:5

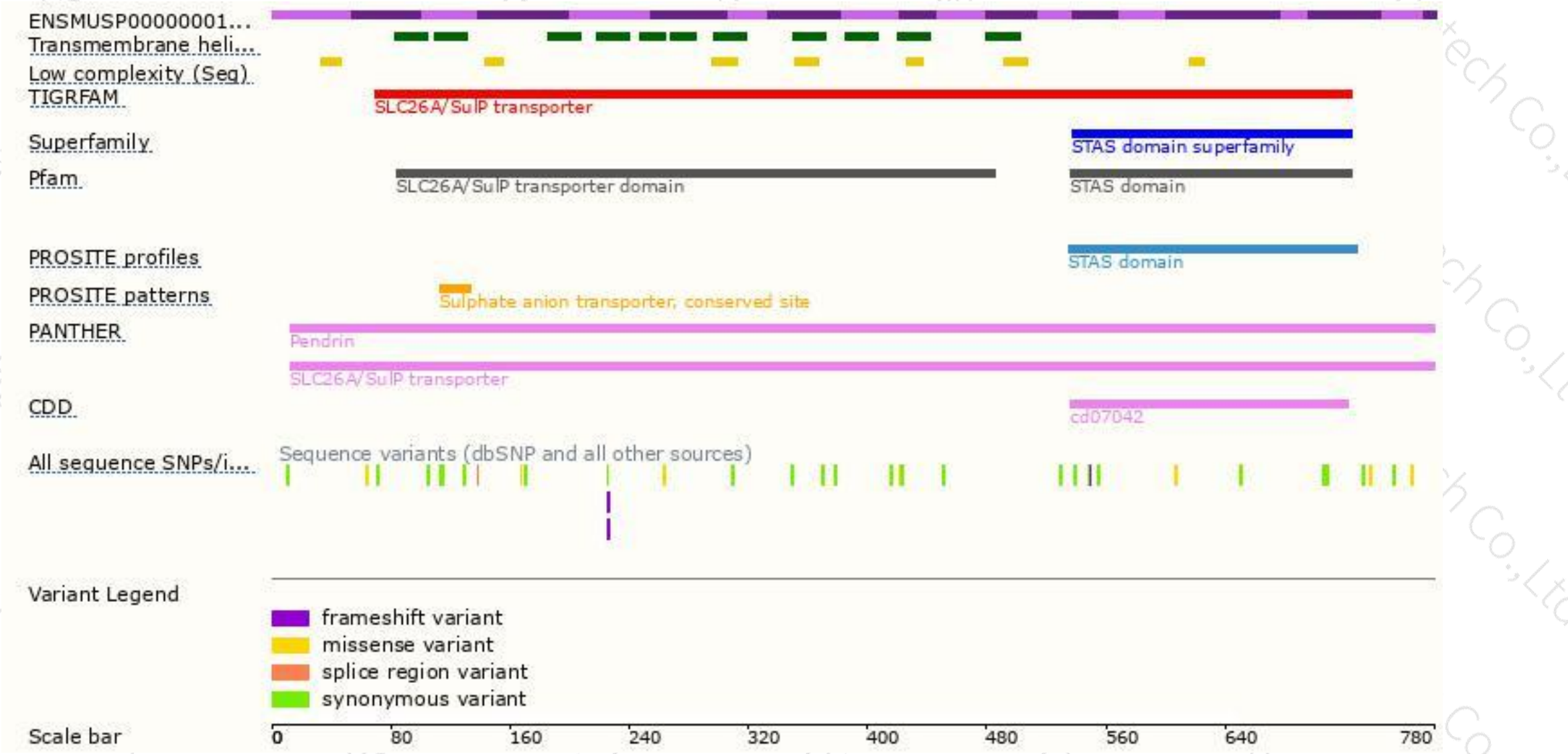
The strategy is based on the design of *Slc26a4-201* transcript,The transcription is shown below



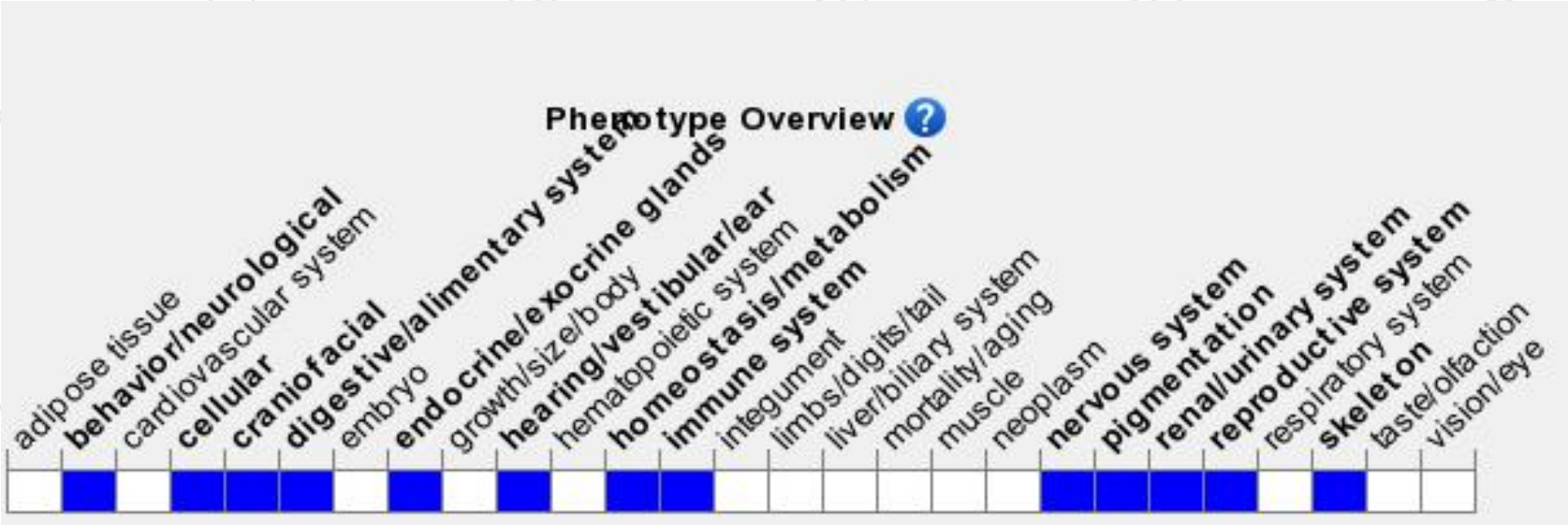
Genomic location distribution



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/).

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

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