Zfp24 Cas9-KO Strategy

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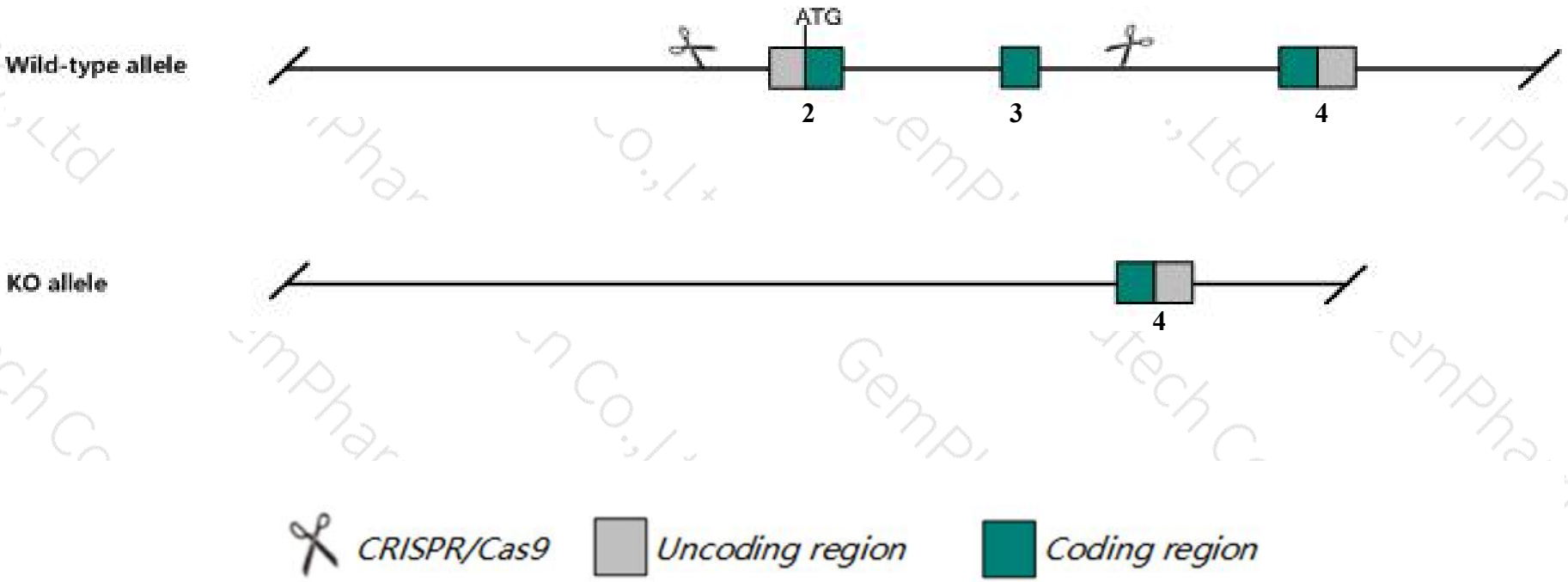
Design Date: 2019-12-11

Project Overview

Project Name	***Zfp24***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp24* gene. The schematic diagram is as follows:



Technical routes

➢ The *Zfp24* gene has 3 transcripts. According to the structure of *Zfp24* gene, exon2-exon3 of *Zfp24-201* (ENSMUST00000066497.11) transcript is recommended as the knockout region.The region contains start codon ATG. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Zfp24* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Mice homozygous null for one mutation have hypomyelination of the central nervous system, tremors, tonic seizures and premature death, whereas mice homozygous null for another mutation are embryonic lethal.

- The *Zfp24* gene is located on the Chr18. 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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Zfp24 zinc finger protein 24 [Mus musculus (house mouse)]

Gene ID: 59057, updated on 31-Jan-2019

Summary

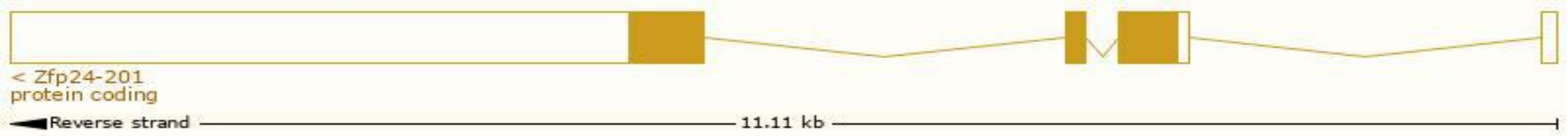
Official Symbol	Zfp24 provided by MGI
Official Full Name	zinc finger protein 24 provided by MGI
Primary source	MGI:MGI:1929704
See related	Ensembl:ENSMUSG00000051469
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	3526401F17Rik, 5033419P20Rik, AI480505, AI642085, AL024422, KOX17, ZF-12, Zfp191, Znf24
Expression	Ubiquitous expression in CNS E11.5 (RPKM 5.8), CNS E14 (RPKM 4.0) and 27 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

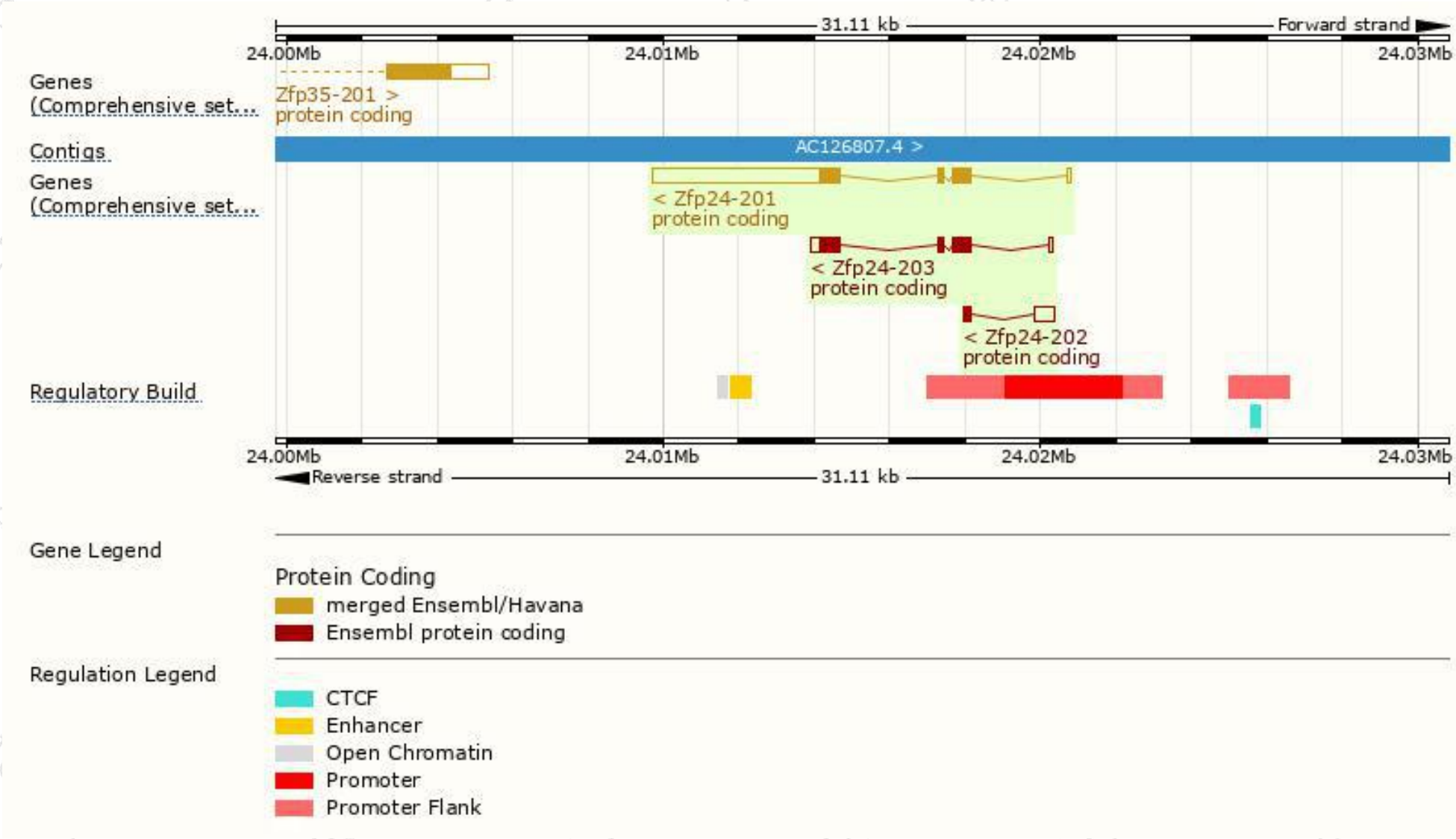
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp24-201	ENSMUST00000066497.11	5732	368aa	Protein coding	CCDS29098	Q91VN1	TSL:1 GENCODE basic APPRIS P1
Zfp24-203	ENSMUST00000153337.1	1513	368aa	Protein coding	CCDS29098	Q91VN1	TSL:1 GENCODE basic APPRIS P1
Zfp24-202	ENSMUST00000148525.1	737	39aa	Protein coding	-	D3YVP1	CDS 3' incomplete TSL:2

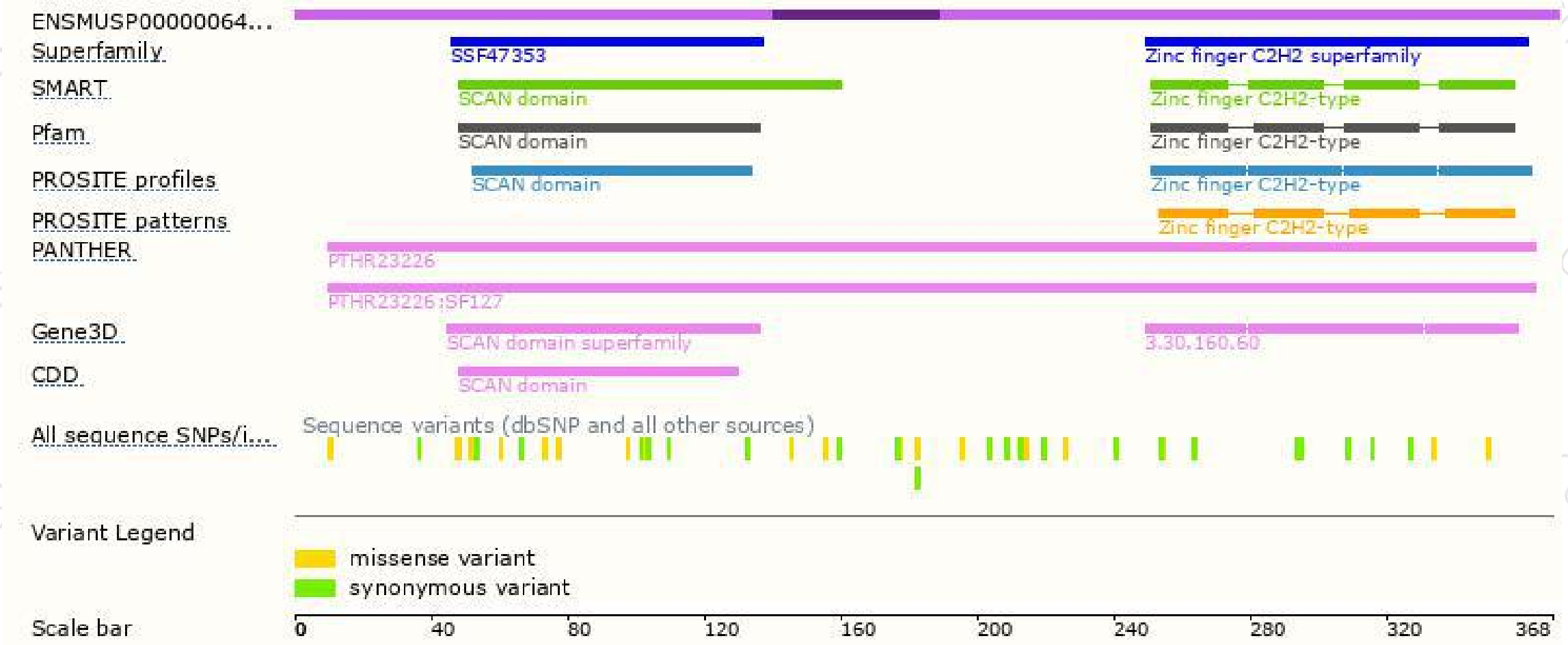
The strategy is based on the design of *Zfp24-201* transcript,The transcription is shown below



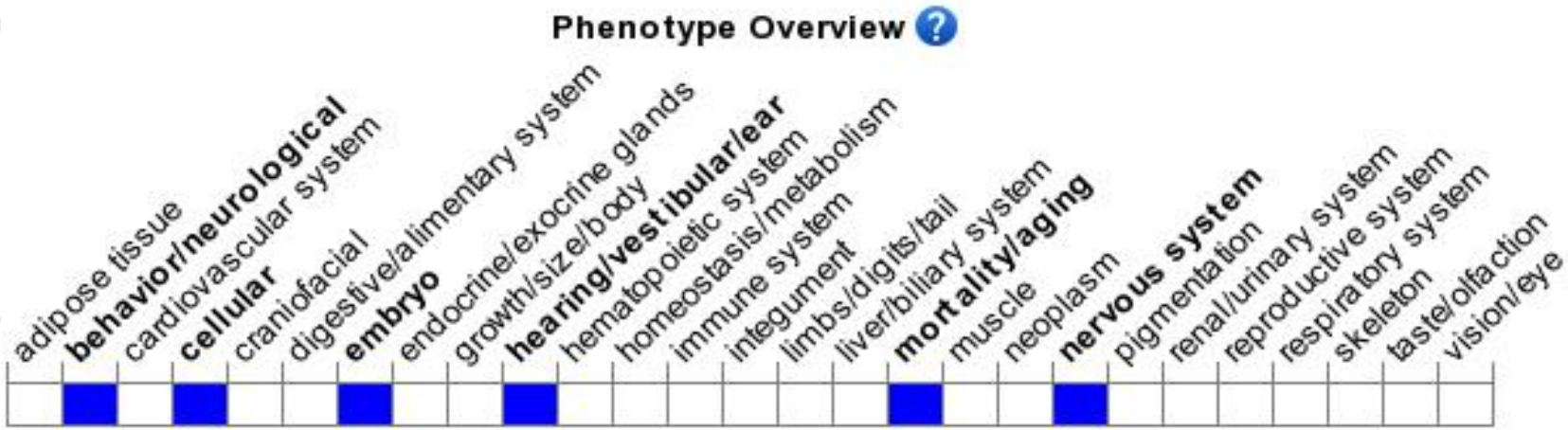
Genomic location distribution



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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