Slc6a11 Cas9-KO Strategy

Designer: Daohua Xu

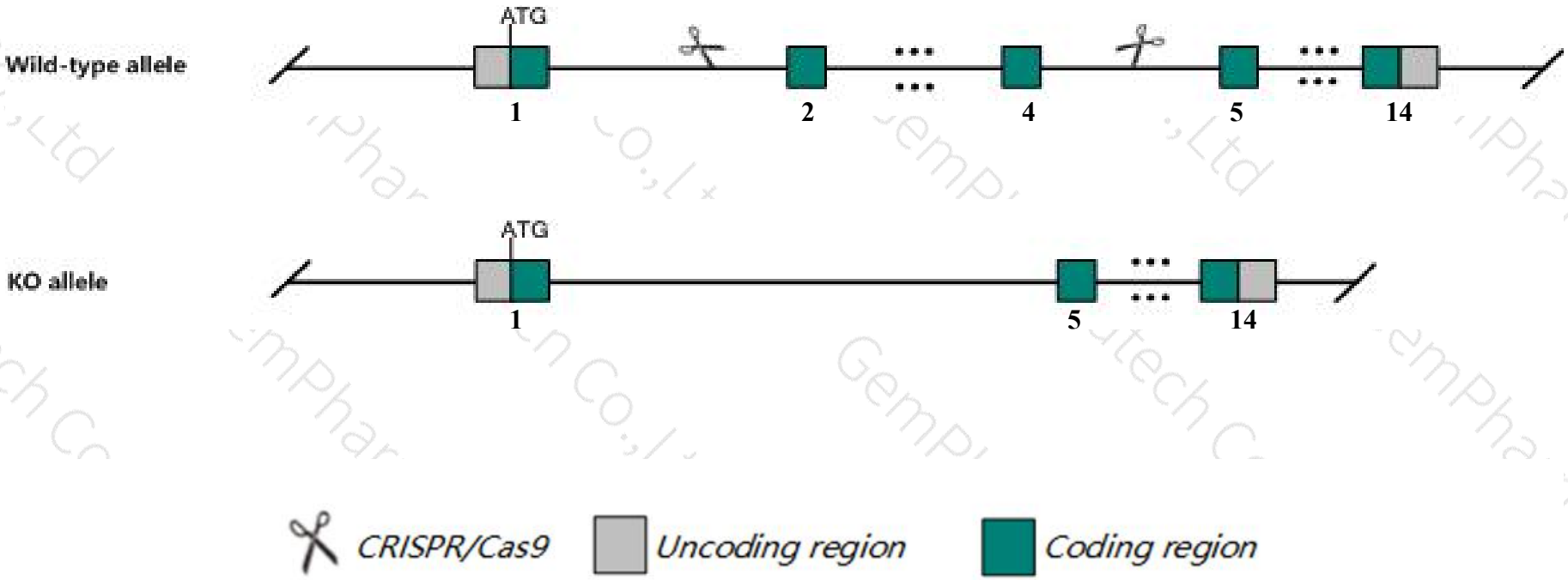
Design Date: 2019-7-30

Project Overview

Project Name	***Slc6a11***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc6a11* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc6a11* gene has 2 transcripts. According to the structure of *Slc6a11* gene, exon2-exon4 of *Slc6a11-201* (ENSMUST00000032451.8) transcript is recommended as the knockout region.The region contains 367bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc6a11* gene. The brief process is as follows: CRISPR/Cas9 syste

Notice

➢ According to the existing MGI data,Mice homozygous for a targeted mutation display postnatal lethality.
Mice heterozygous for a targeted mutation display resistance to pharmacologically induced seizures.

➢ The *Slc6a11* gene is located on the Chr6. 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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Slc6a11 solute carrier family 6 (neurotransmitter transporter, GABA), member 11 [Mus musculus (house mouse)]

Gene ID: 243616, updated on 31-Jan-2019

Summary

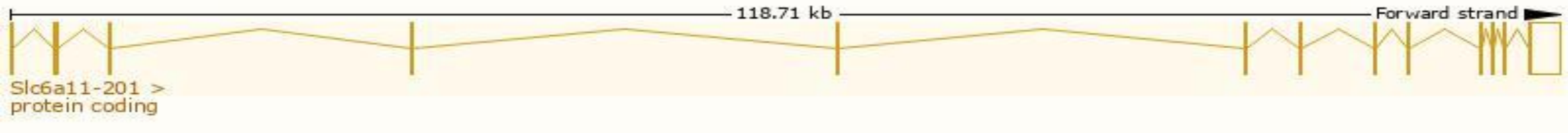
Official Symbol	Slc6a11 provided by MGI
Official Full Name	solute carrier family 6 (neurotransmitter transporter, GABA), member 11 provided by MGI
Primary source	MGI:MGI:95630
See related	Ensembl:ENSMUSG00000030307
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	D930045G19Rik, E130202I16Rik, GAT4, Gabt4, Gat3
Expression	Biased expression in frontal lobe adult (RPKM 78.6), cerebellum adult (RPKM 49.6) and 4 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

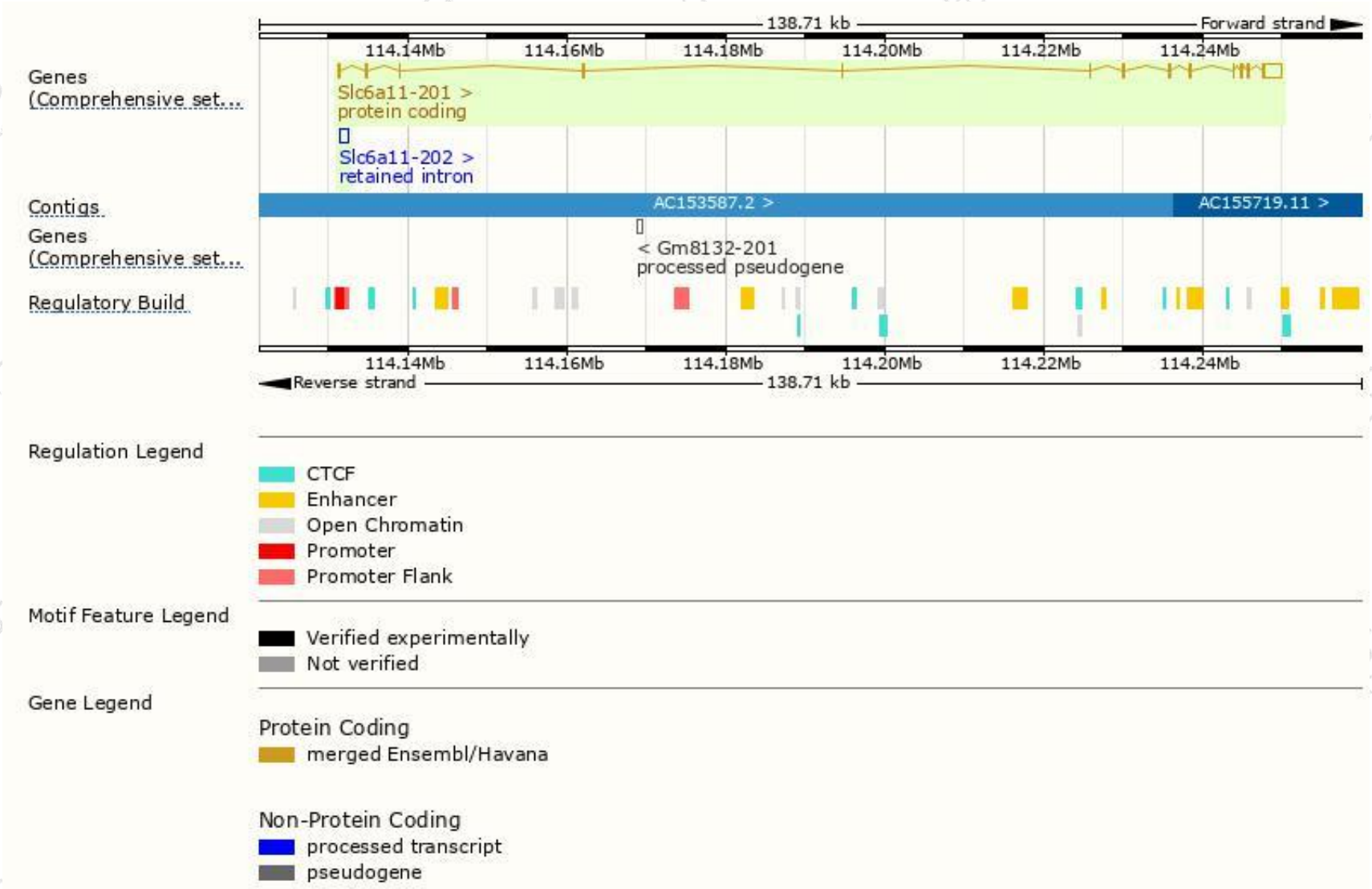
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc6a11-201	ENSMUST00000032451.8	4132	627aa	Protein coding	CCDS39597	P31650	TSL:1 GENCODE basic APPRIS P1
Slc6a11-202	ENSMUST00000203105.1	1017	No protein	Retained intron	-	-	TSL:NA

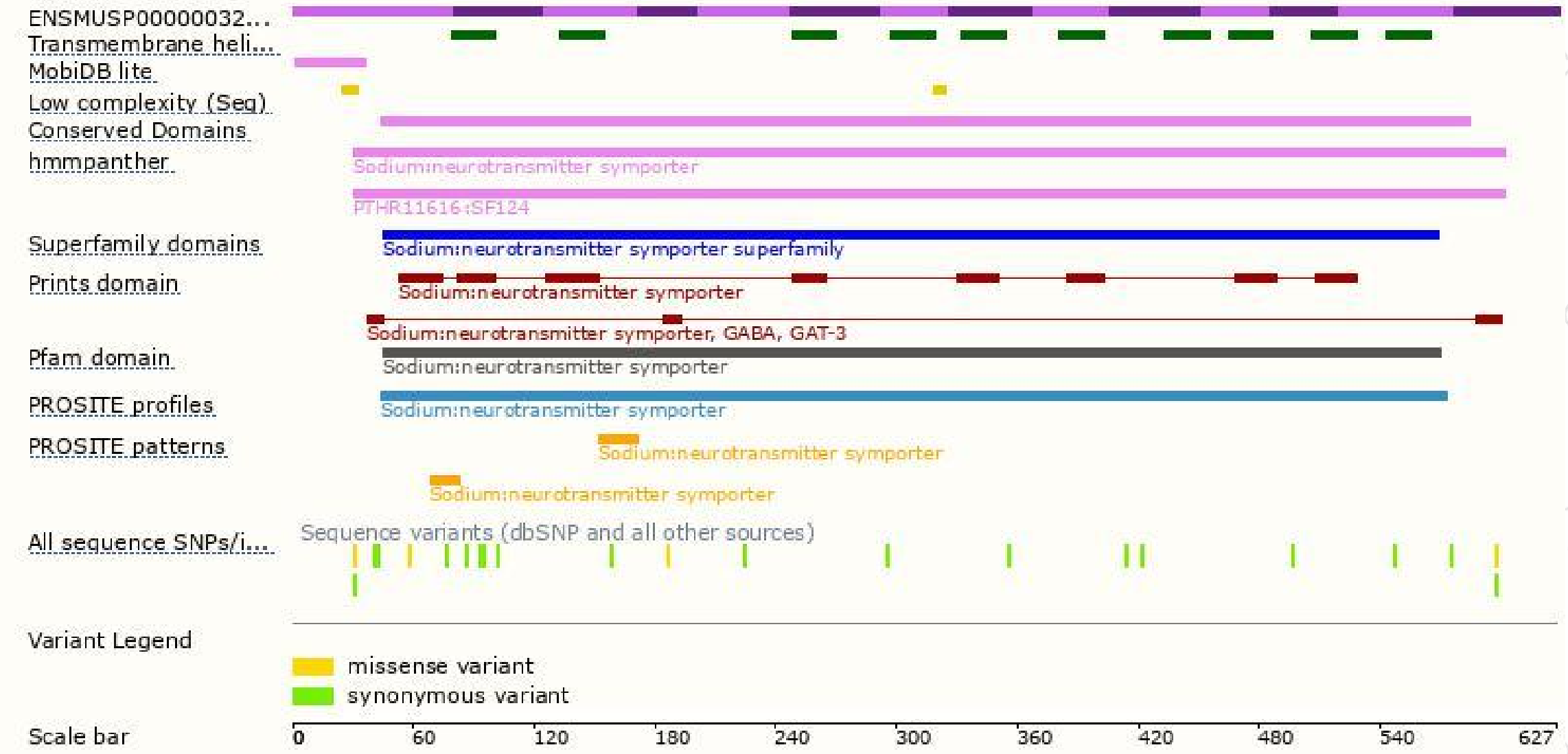
The strategy is based on the design of *Slc6a11-201* transcript,The transcription is shown below



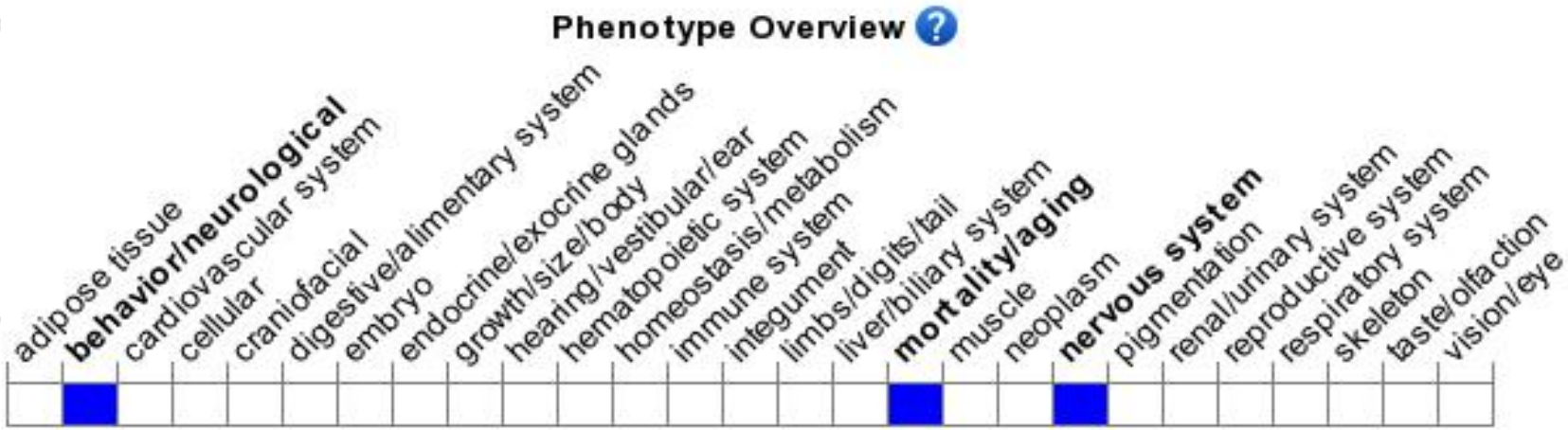
Genomic location distribution



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 targeted mutation display postnatal lethality. Mice heterozygous for a targeted mutation display resistance to pharmacologically induced seizures.

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

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