

Kcnj9 Cas9-CKO Strategy

Designer:

Daohua Xu

Reviewer:

Huimin Su

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Project Overview

Project Name

Kcnj9

Project type

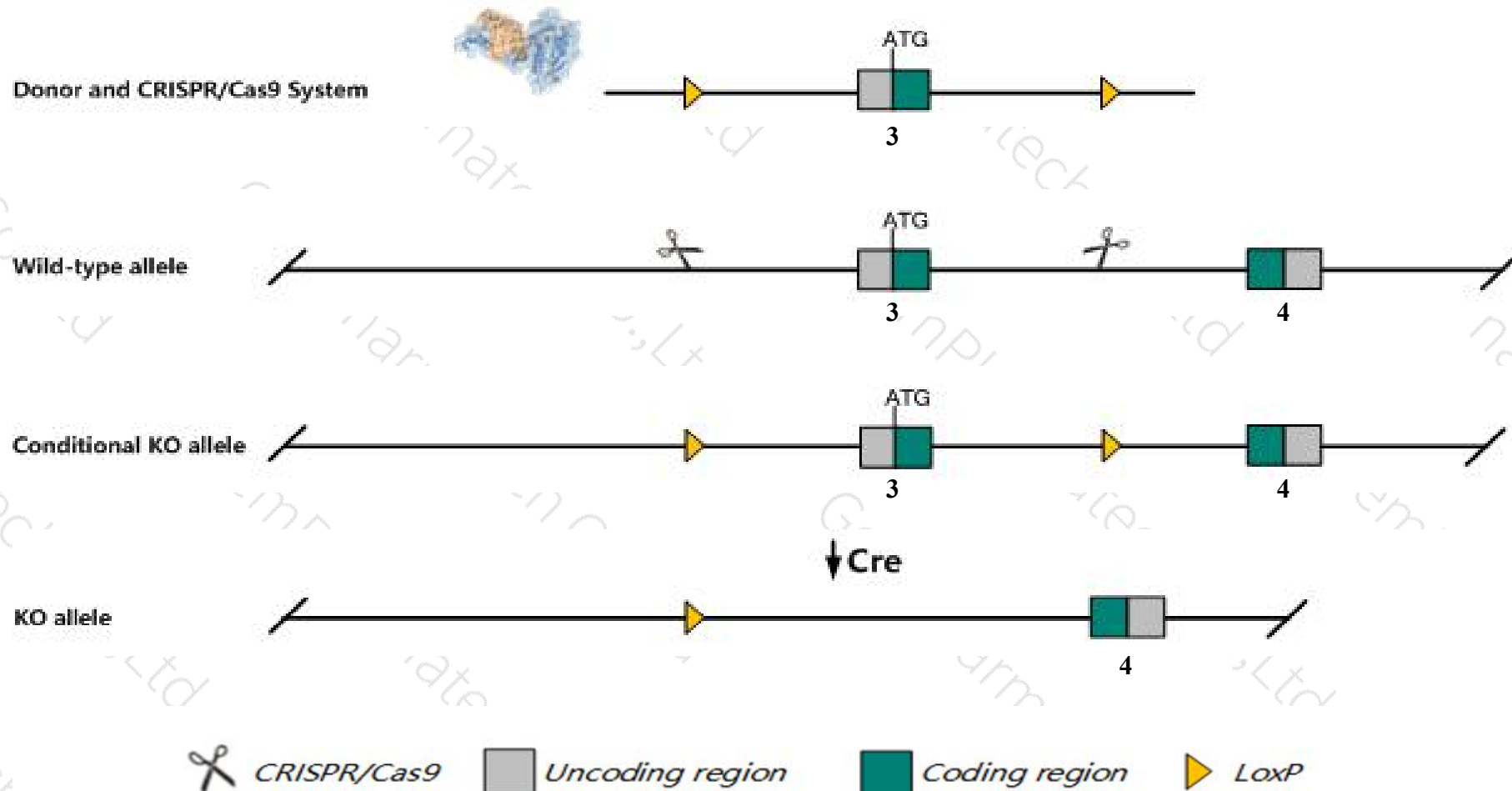
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kcnj9* gene. The schematic diagram is as follows:



Technical routes

- The *Kcnj9* gene has 3 transcripts. According to the structure of *Kcnj9* gene, exon3 of *Kcnj9-201* (ENSMUST00000062387.7) 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 *Kcnj9* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt 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/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- According to the existing MGI data, Inactivation of this locus does not result in any overt phenotype.
- The *Kcnj9* gene is located on the Chr1. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Kcnj9 potassium inwardly-rectifying channel, subfamily J, member 9 [Mus musculus (house mouse)]

Gene ID: 16524, updated on 31-Jan-2019

Summary



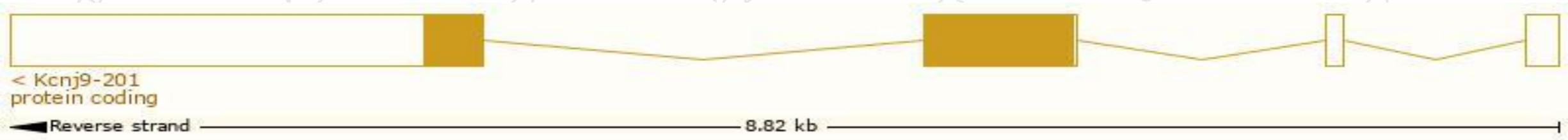
Official Symbol	Kcnj9 provided by MGI
Official Full Name	potassium inwardly-rectifying channel, subfamily J, member 9 provided by MGI
Primary source	MGI:MGI:108007
See related	Ensembl:ENSMUSG00000038026
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700085N21Rik, Girk3, Kir3.3, mbGIRK3
Expression	Biased expression in cortex adult (RPKM 37.4), cerebellum adult (RPKM 26.5) and 3 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

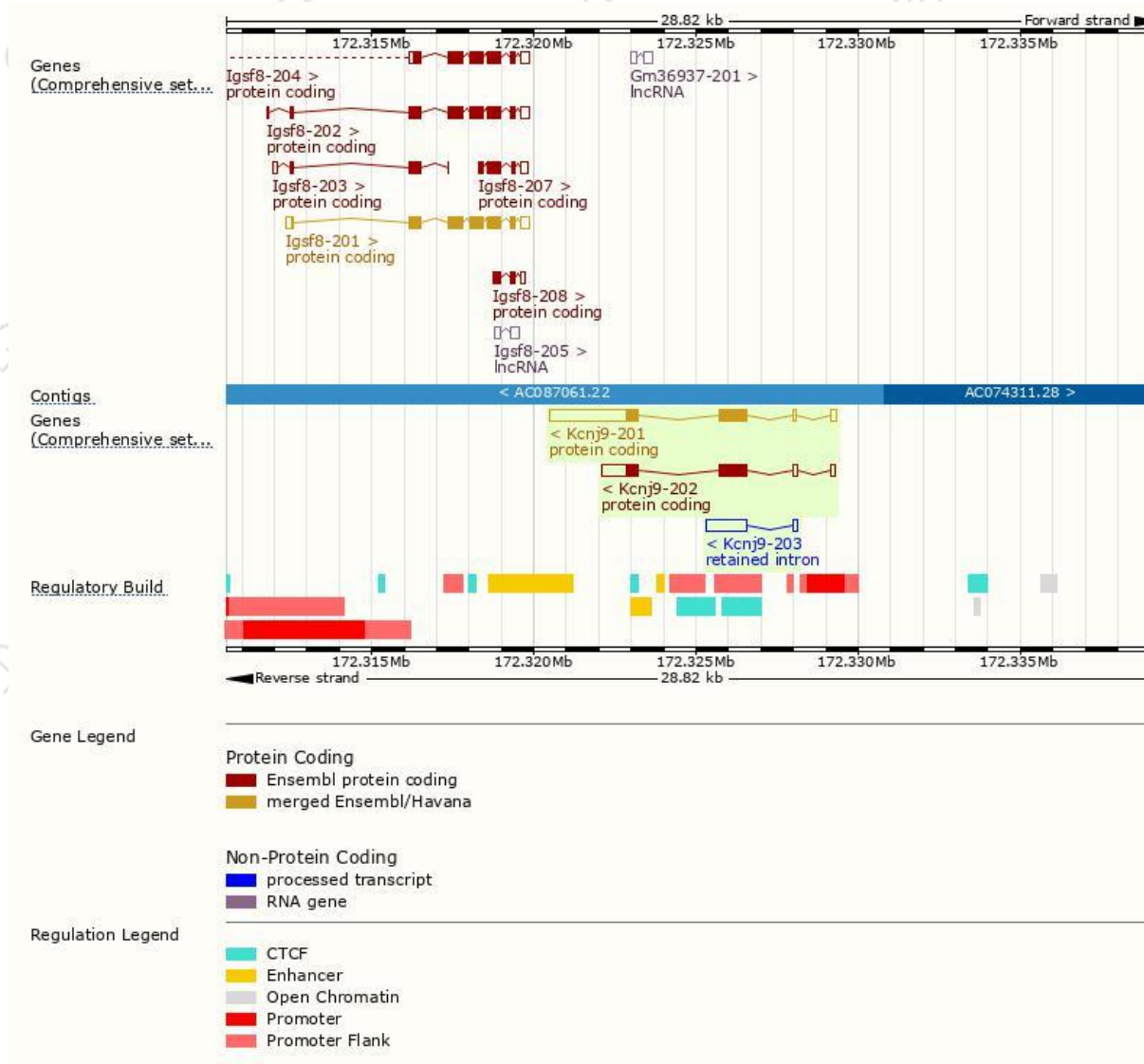
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kcnj9-201	ENSMUST00000062387.7	3857	393aa	Protein coding	CCDS35783	P48543 Q544N3	TSL:1 GENCODE basic APPRIS P1
Kcnj9-202	ENSMUST00000194204.1	2265	393aa	Protein coding	CCDS35783	P48543 Q544N3	TSL:1 GENCODE basic APPRIS P1
Kcnj9-203	ENSMUST00000194860.1	1390	No protein	Retained intron	-	-	TSL:5

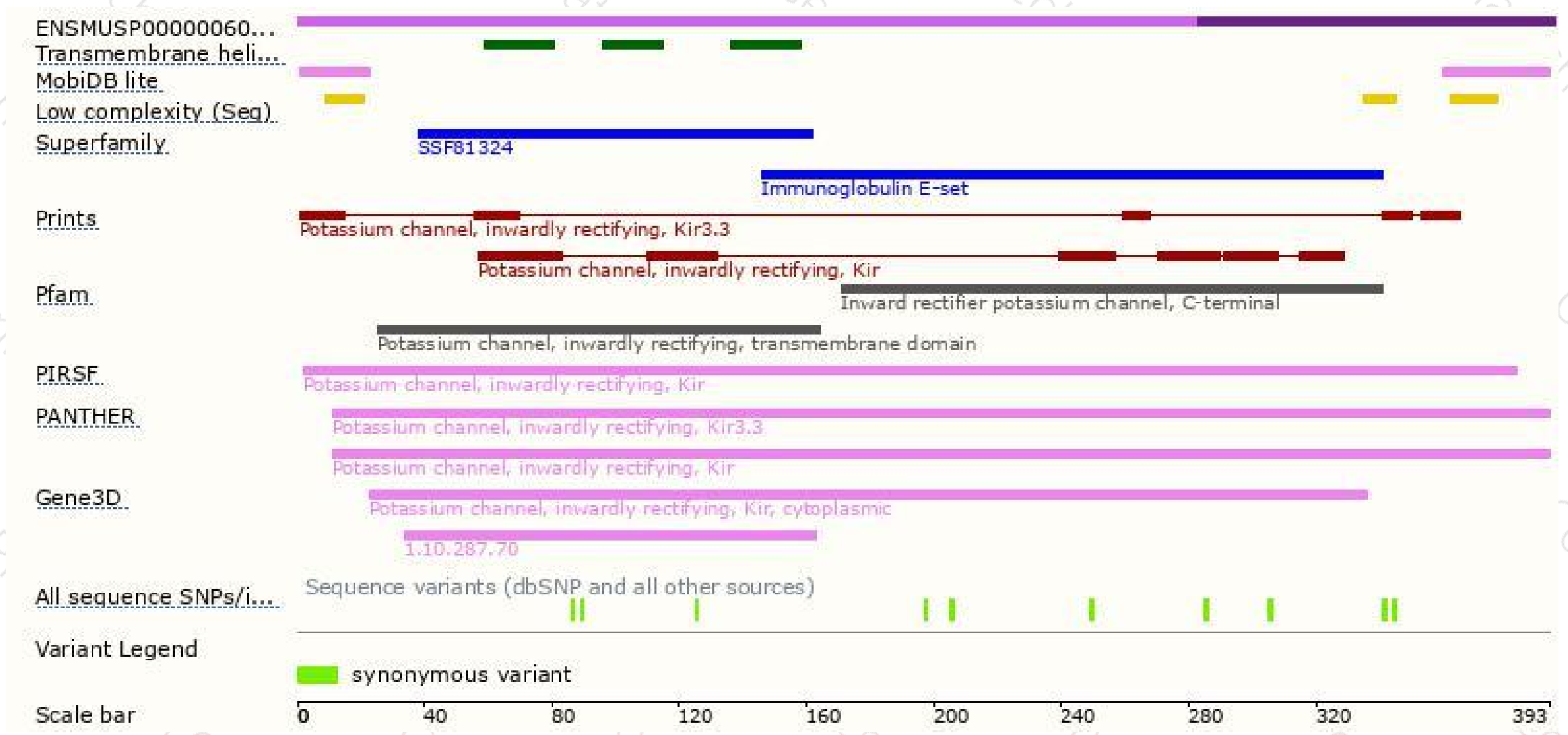
The strategy is based on the design of *Kcnj9-201* transcript,The transcription is shown below



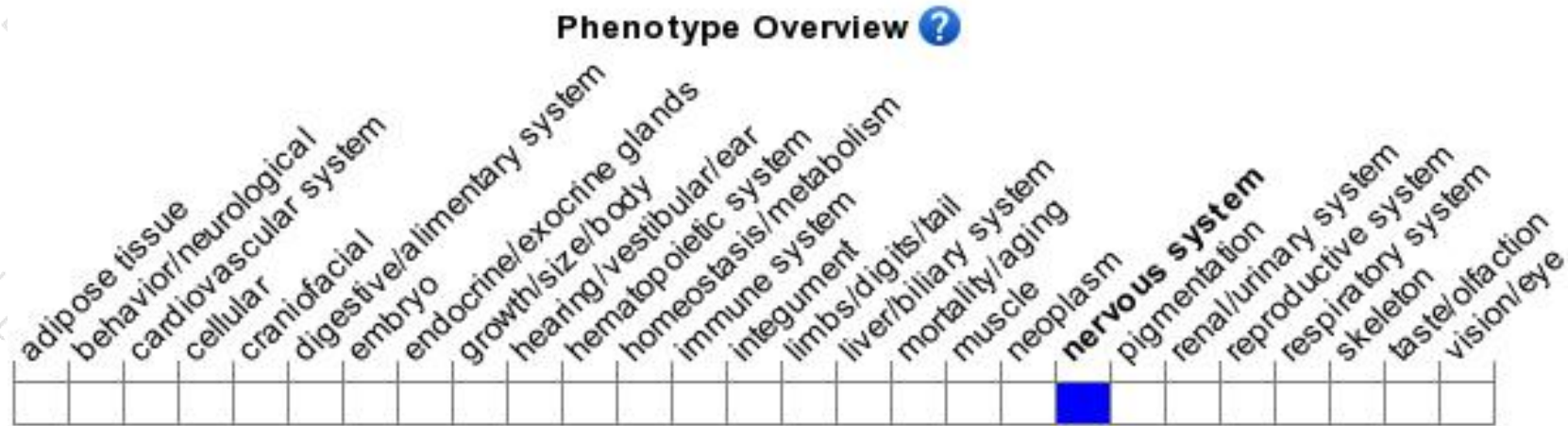
Genomic location distribution



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, Inactivation of this locus does not result in any overt phenotype.

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

Tel: 400-9660890

