Htr6 Cas9-KO Strategy

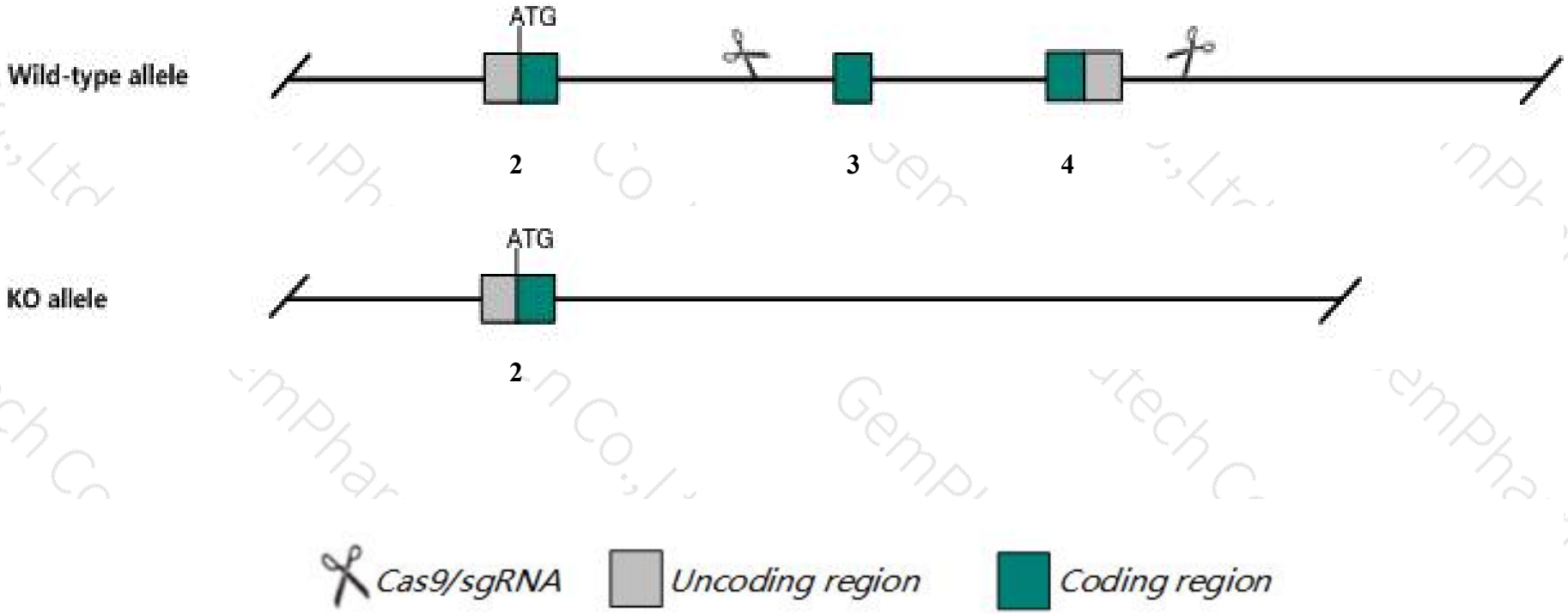
Designer:Qiong Zhou

Project Overview

Project Name	***Htr6***
Project type	**Cas9-KO**
Strain background	**C57BL/6J**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Htr6* gene. The schematic diagram is as follows:



Technical routes

➢ The *Htr6* gene has 2 transcripts. According to the structure of *Htr6* gene, exon3-exon4 of *Htr6-202* (ENSMUST00000105802.7) transcript is recommended as the knockout region.The region contains 603bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Htr6* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

Notice

- According to the existing MGI data,Male mice homozygous for some disruptions in this gene display decreased body size. Mice homozygous for a different null allele display decreased sensitivity to alcohol induced behavioral responses.

- The *Htr6* gene is located on the Chr4. 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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Htr6 5-hydroxytryptamine (serotonin) receptor 6 [Mus musculus (house mouse)]

Gene ID: 15565, updated on 19-Mar-2019

Summary

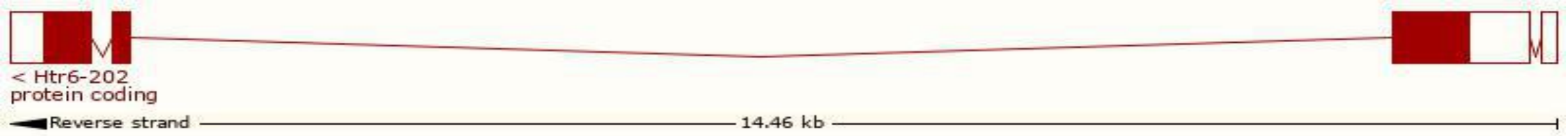
Official Symbol	Htr6 provided by MGI
Official Full Name	5-hydroxytryptamine (serotonin) receptor 6 provided byMGI
Primary source	MGI:MGI:1196627
See related	Ensembl:ENSMUSG00000028747
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5-HT6
Expression	Biased expression in cortex adult (RPKM 1.8), frontal lobe adult (RPKM 1.5) and 11 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

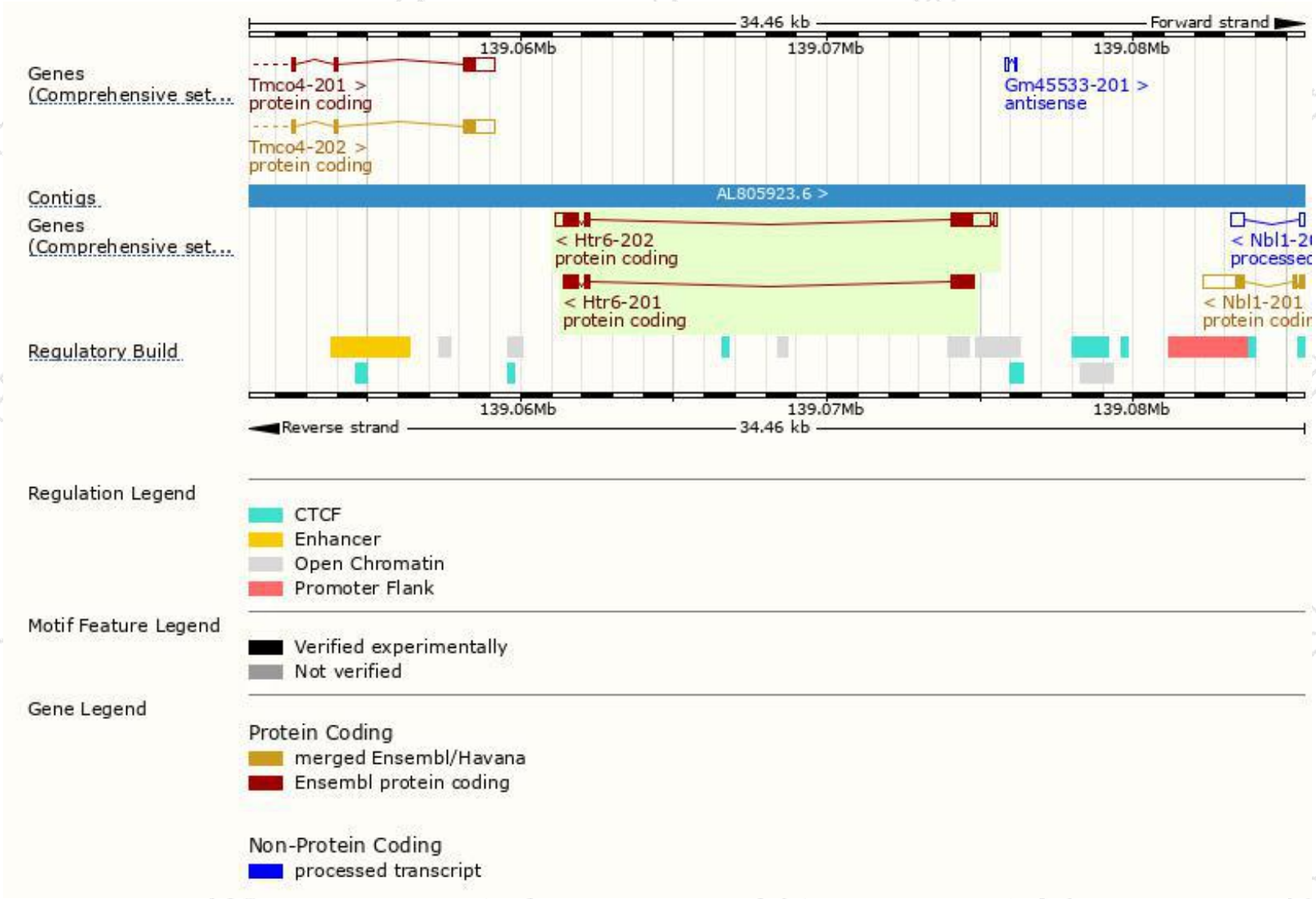
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Htr6-202	ENSMUST00000105802.7	2341	440aa	Protein coding	CCDS18838	Q14AW8 Q9R1C8	TSL:5 GENCODE basic APPRIS P1
Htr6-201	ENSMUST00000068036.1	1362	440aa	Protein coding	CCDS18838	Q14AW8 Q9R1C8	TSL:1 GENCODE basic APPRIS P1

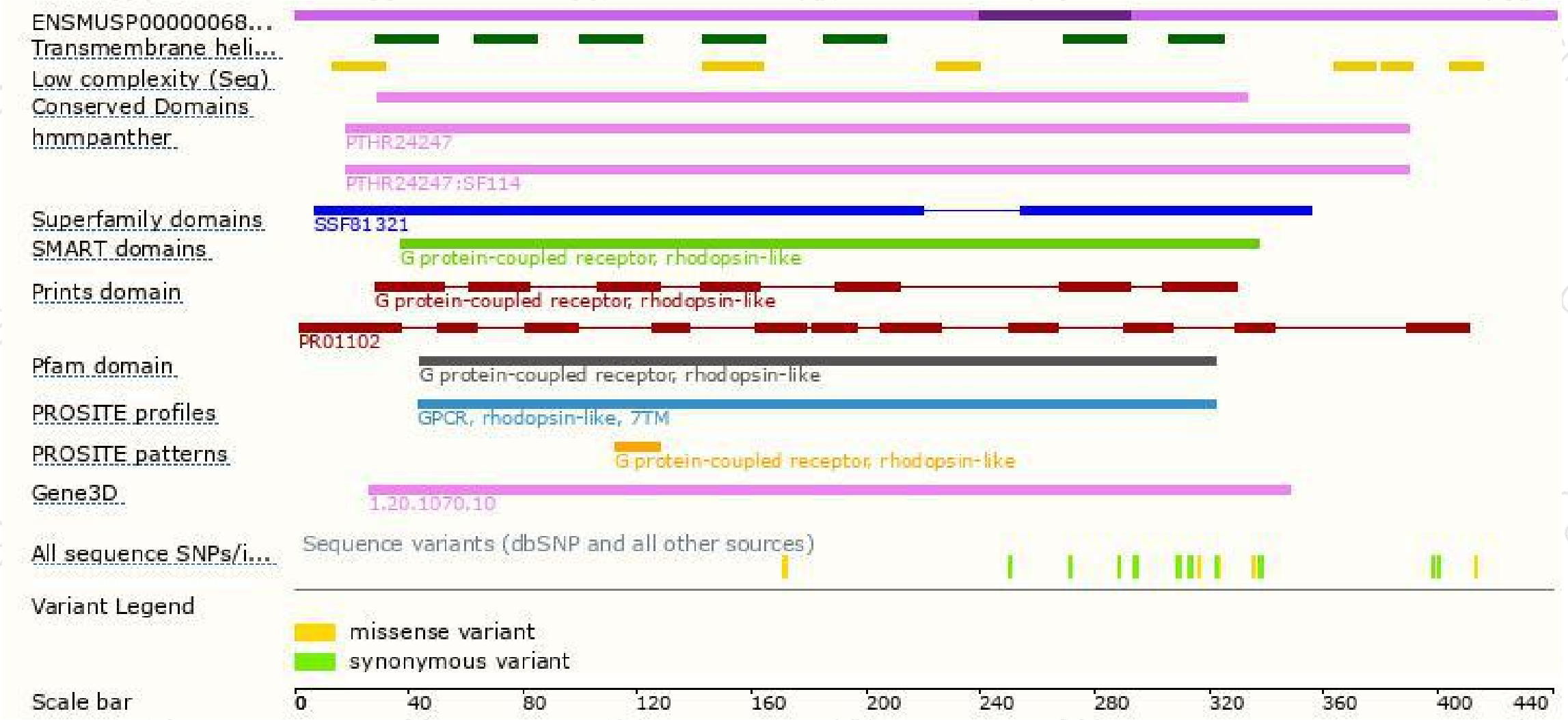
The strategy is based on the design of *Htr6-202* transcript,The transcription is shown below



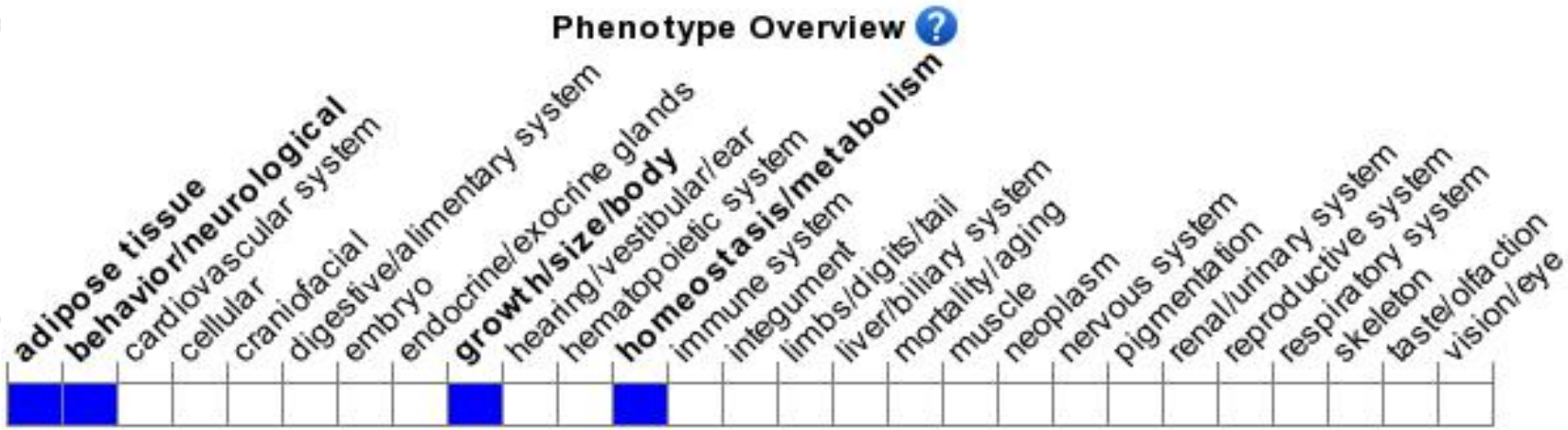
Genomic location distribution



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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