Zfp335 Cas9-CKO Strategy

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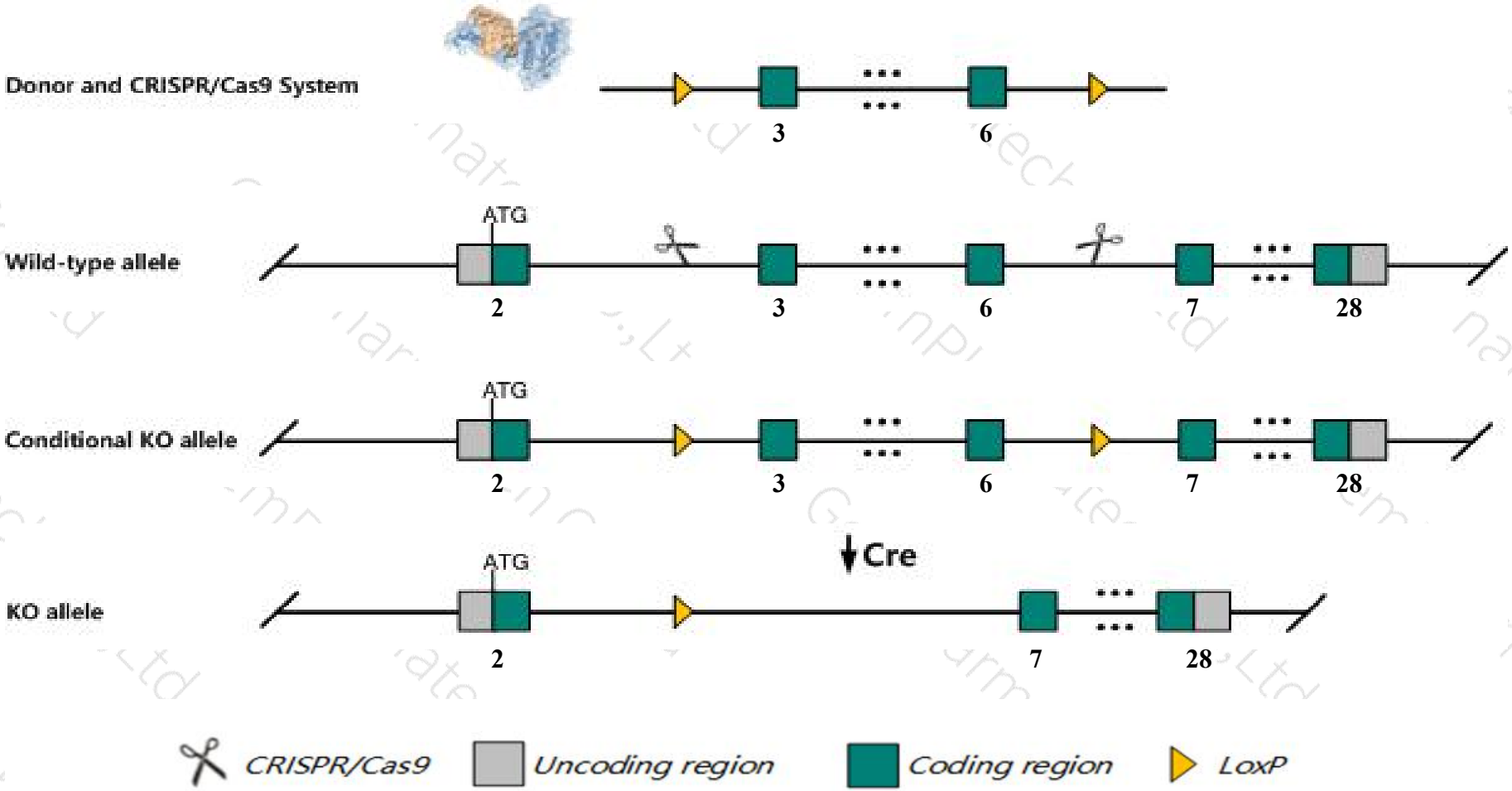
Project Overview

Project Name	***Zfp335***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp335* gene. The schematic diagram is as follows:



Technical routes

- The *Zfp335* gene has 3 transcripts. According to the structure of *Zfp335* gene, exon3-exon6 of *Zfp335-201* (ENSMUST00000041361.13) transcript is recommended as the knockout region.The region contains 769bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Zfp335* 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.

Notice

- According to the existing MGI data,Mice homozygous for a transgenic gene disruption exhibit embryonic lethality before implantation. Mice homozygous for a conditional allele activated in the brain exhibit loss of cortical neurons and decreased brain size.

- The *Zfp335* gene is located on the Chr2. 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）

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Zfp335 zinc finger protein 335 [Mus musculus (house mouse)]

Gene ID: 329559, updated on 31-Jan-2019

Summary

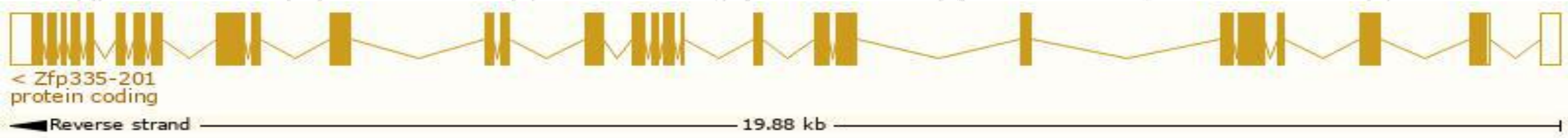
Official Symbol	Zfp335 provided by MGI
Official Full Name	zinc finger protein 335 provided by MGI
Primary source	MGI:MGI:2682313
See related	Ensembl:ENSMUSG00000039834
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810045J01Rik, NIF-1, Nif1, Znf335
Expression	Ubiquitous expression in thymus adult (RPKM 31.4), spleen adult (RPKM 20.3) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

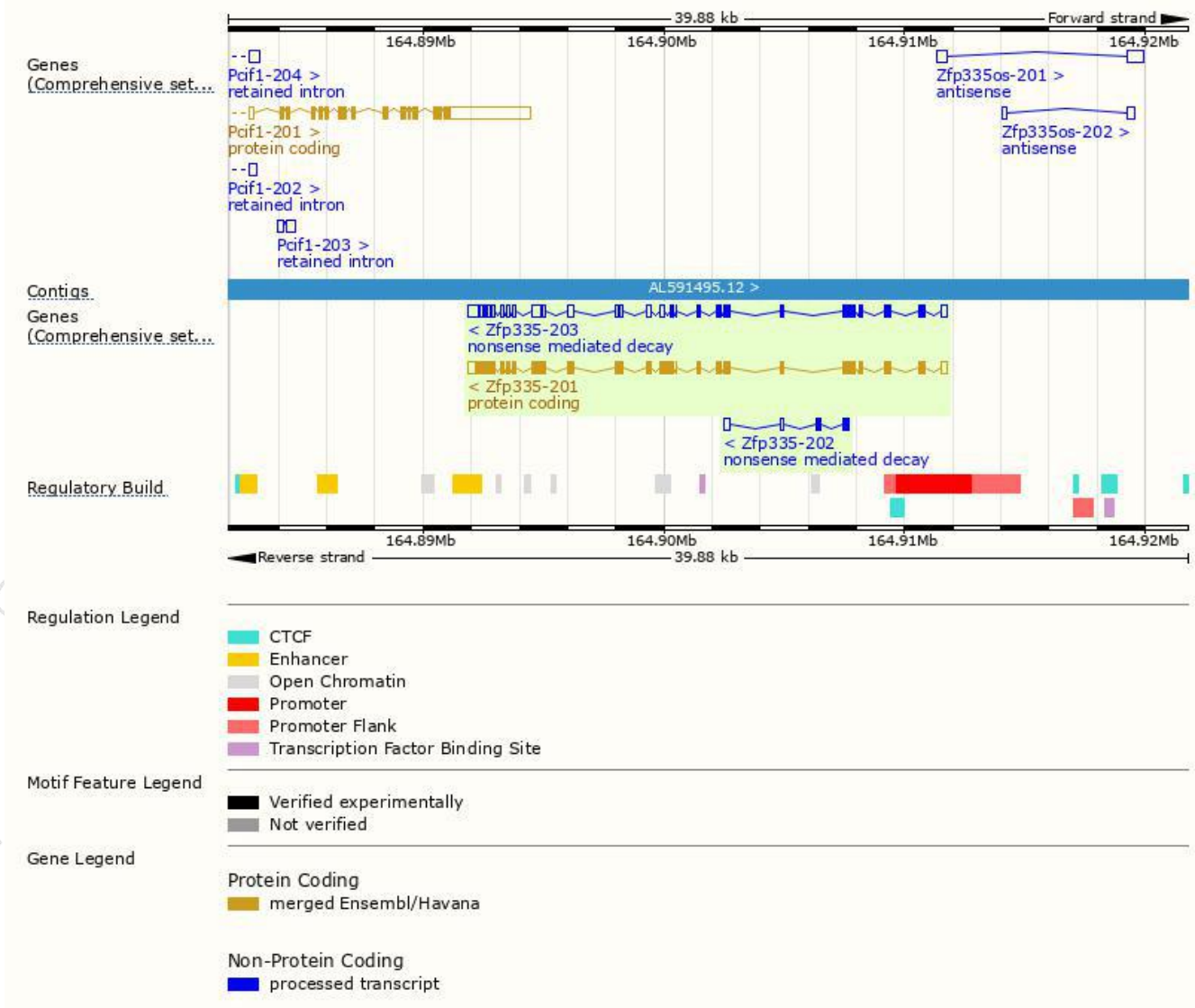
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp335-201	ENSMUST00000041361.13	4587	1337aa	Protein coding	CCDS38331	A2A5K6	TSL:1 GENCODE basic APPRIS P1
Zfp335-203	ENSMUST00000183830.7	4510	598aa	Nonsense mediated decay	-	Q6P5F4	TSL:1
Zfp335-202	ENSMUST00000139247.1	680	91aa	Nonsense mediated decay	-	S4R2J0	CDS 5' incomplete TSL:3

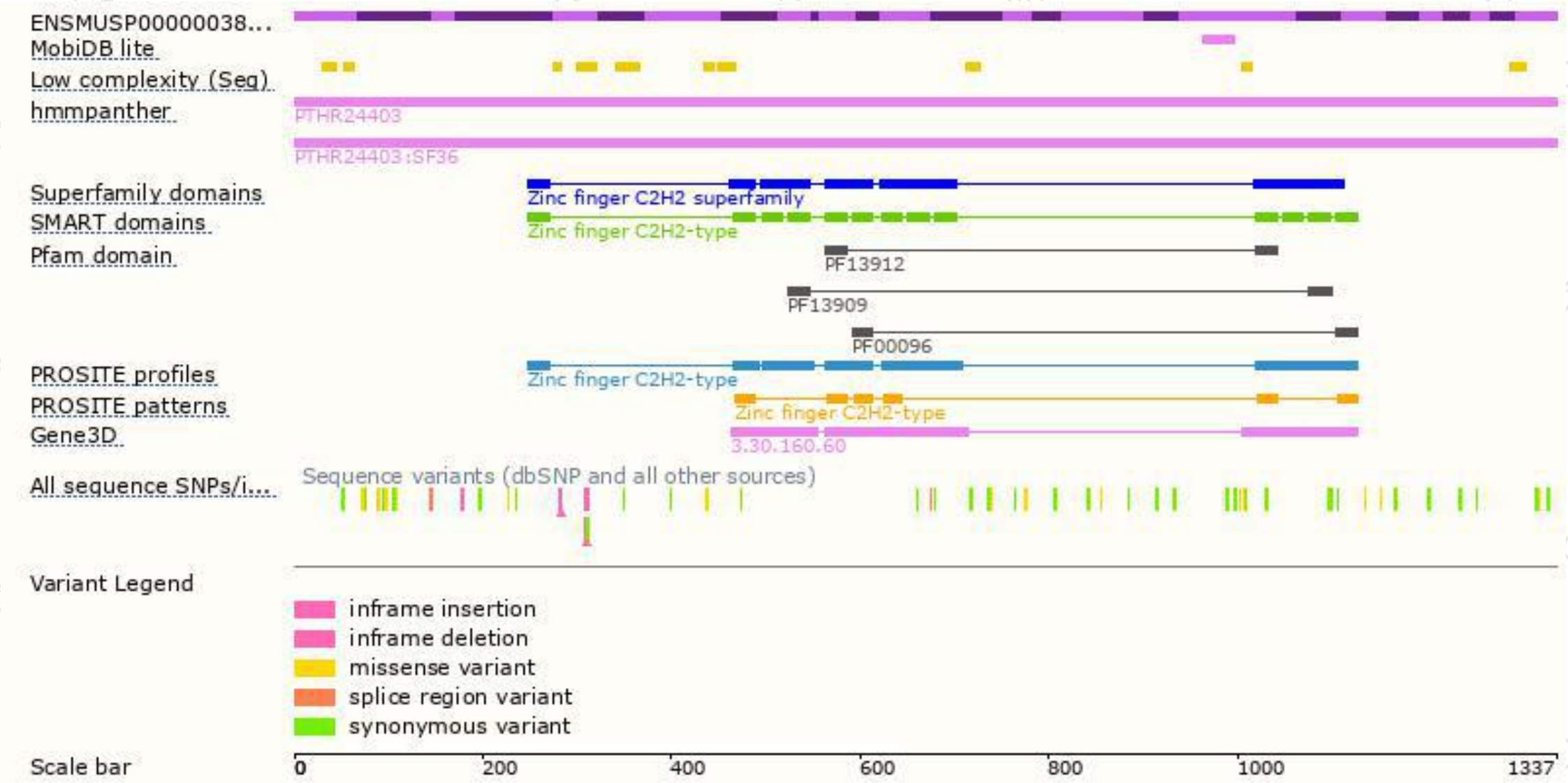
The strategy is based on the design of *Zfp335-201* transcript,The transcription is shown below



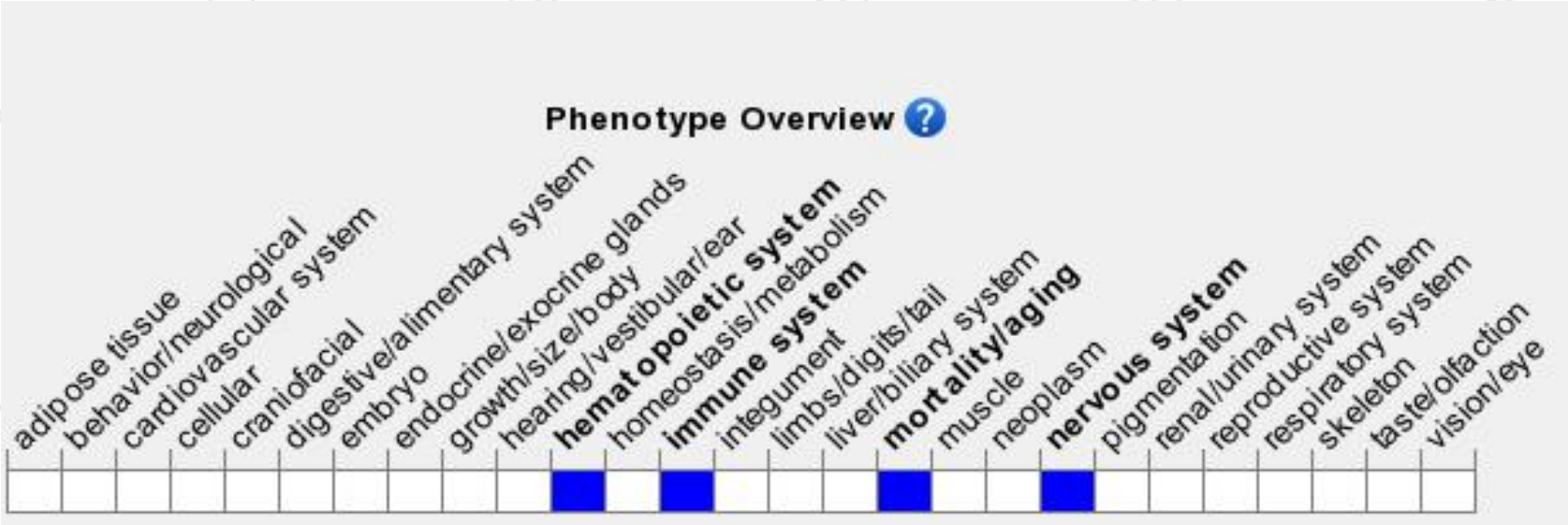
Genomic location distribution



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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