

Zfp182 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Zfp182

Project type

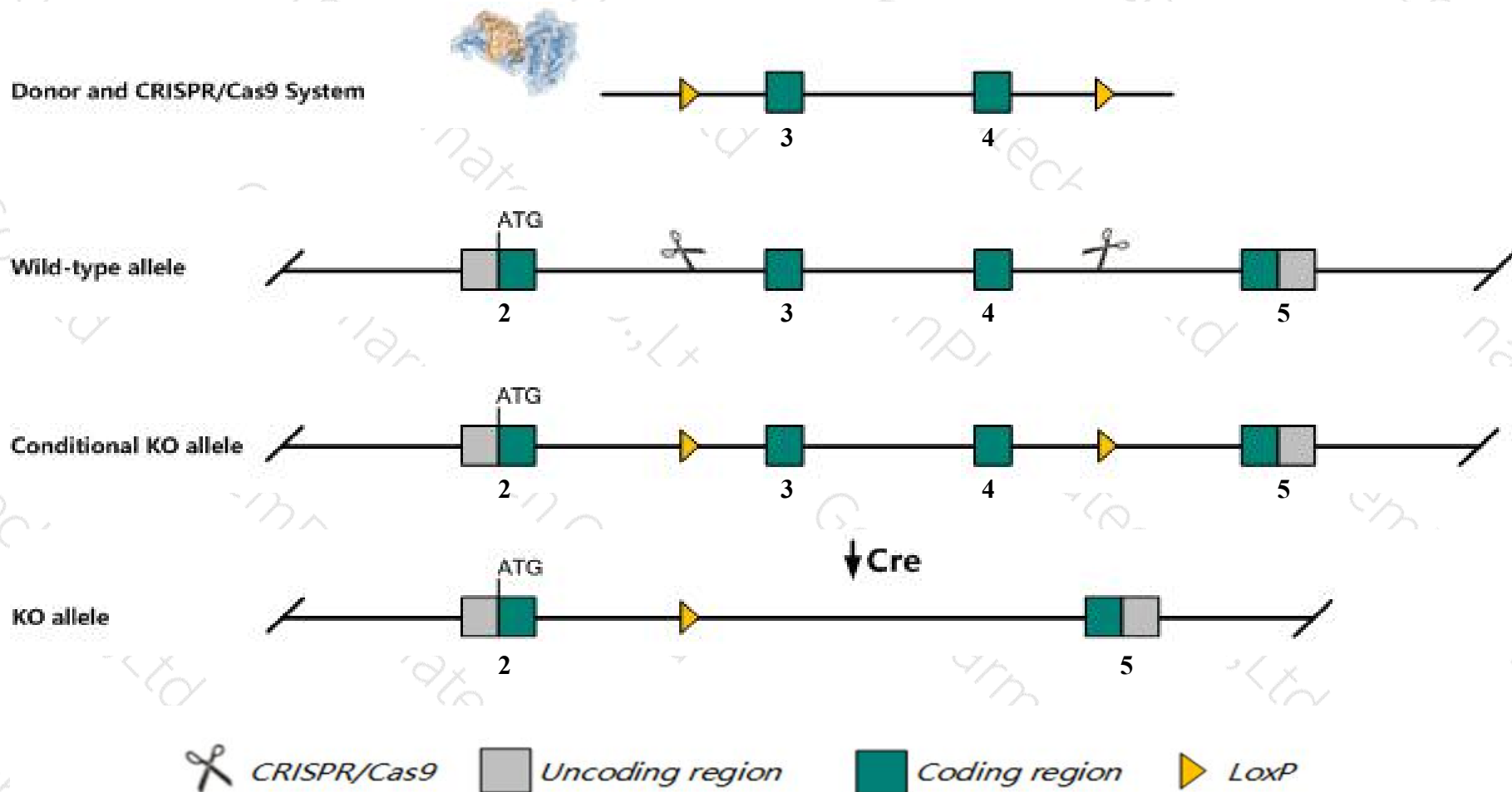
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp182* gene. The schematic diagram is as follows:



- The *Zfp182* gene has 5 transcripts. According to the structure of *Zfp182* gene, exon3-exon4 of *Zfp182-202* (ENSMUST00000115333.8) transcript is recommended as the knockout region. The region contains 280bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp182* 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

- The *Zfp182* gene is located on the ChrX. 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)

Zfp182 zinc finger protein 182 [*Mus musculus* (house mouse)]

Gene ID: 319535, updated on 12-Aug-2019

Summary

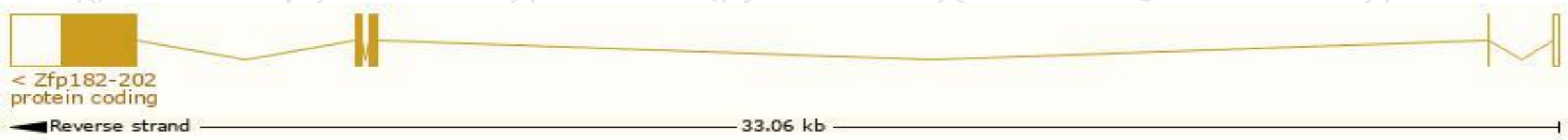
Official Symbol	Zfp182 provided by MGI
Official Full Name	zinc finger protein 182 provided by MGI
Primary source	MGI:MGI:2442220
See related	Ensembl:ENSMUSG00000054737
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Znf182; 6330583I20Rik
Expression	Broad expression in bladder adult (RPKM 2.4), CNS E18 (RPKM 2.3) and 20 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

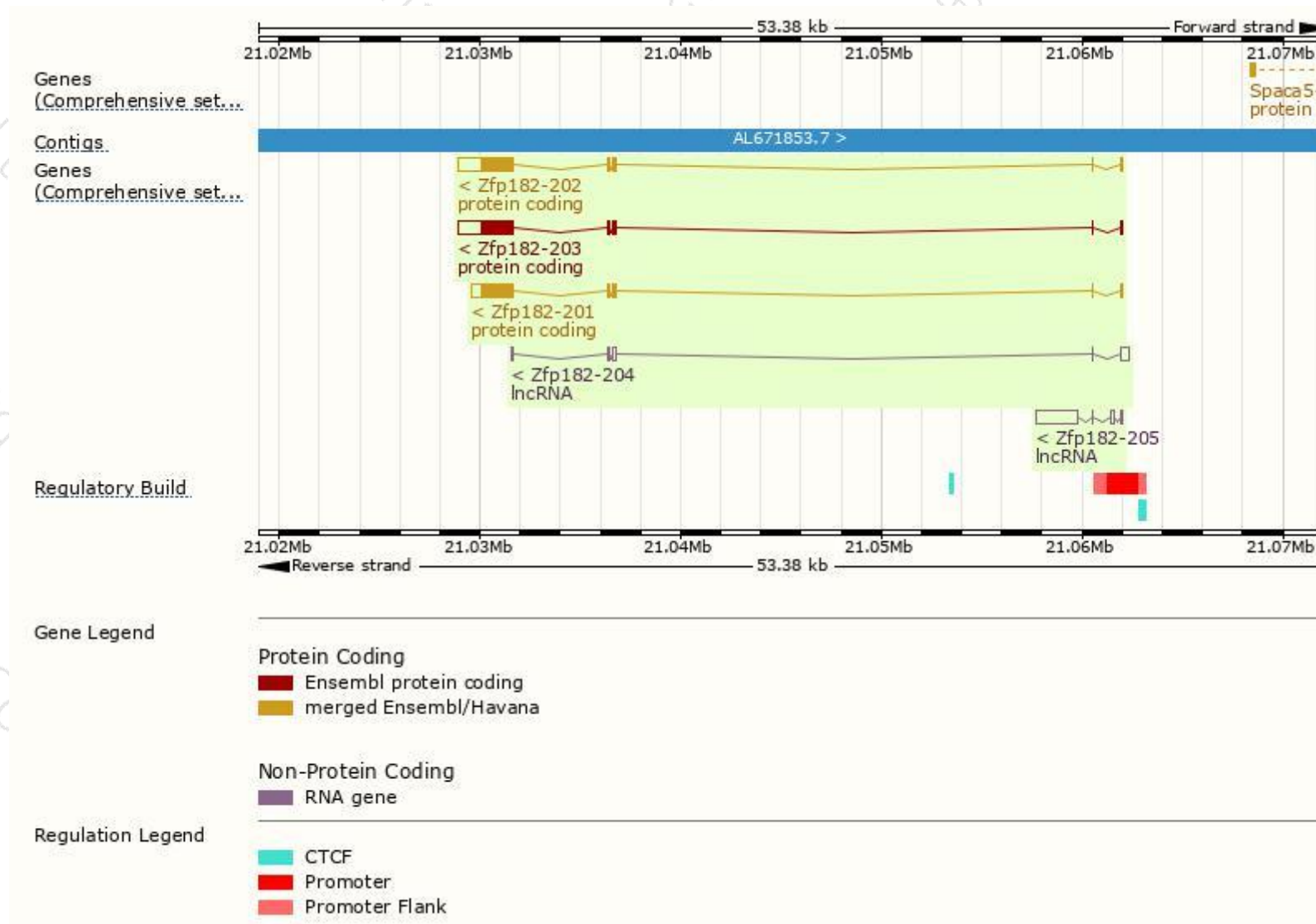
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp182-202	ENSMUST00000115333.8	3130	627aa	Protein coding	CCDS40887	A2AE18	TSL:1 GENCODE basic APPRIS P2
Zfp182-201	ENSMUST00000040628.5	2487	627aa	Protein coding	CCDS40887	A2AE18	TSL:1 GENCODE basic APPRIS P2
Zfp182-203	ENSMUST00000115334.7	3160	663aa	Protein coding	-	A2AE19	TSL:5 APPRIS ALT2
Zfp182-205	ENSMUST00000138123.1	2417	No protein	lncRNA	-	-	TSL:1
Zfp182-204	ENSMUST00000133186.1	739	No protein	lncRNA	-	-	TSL:5

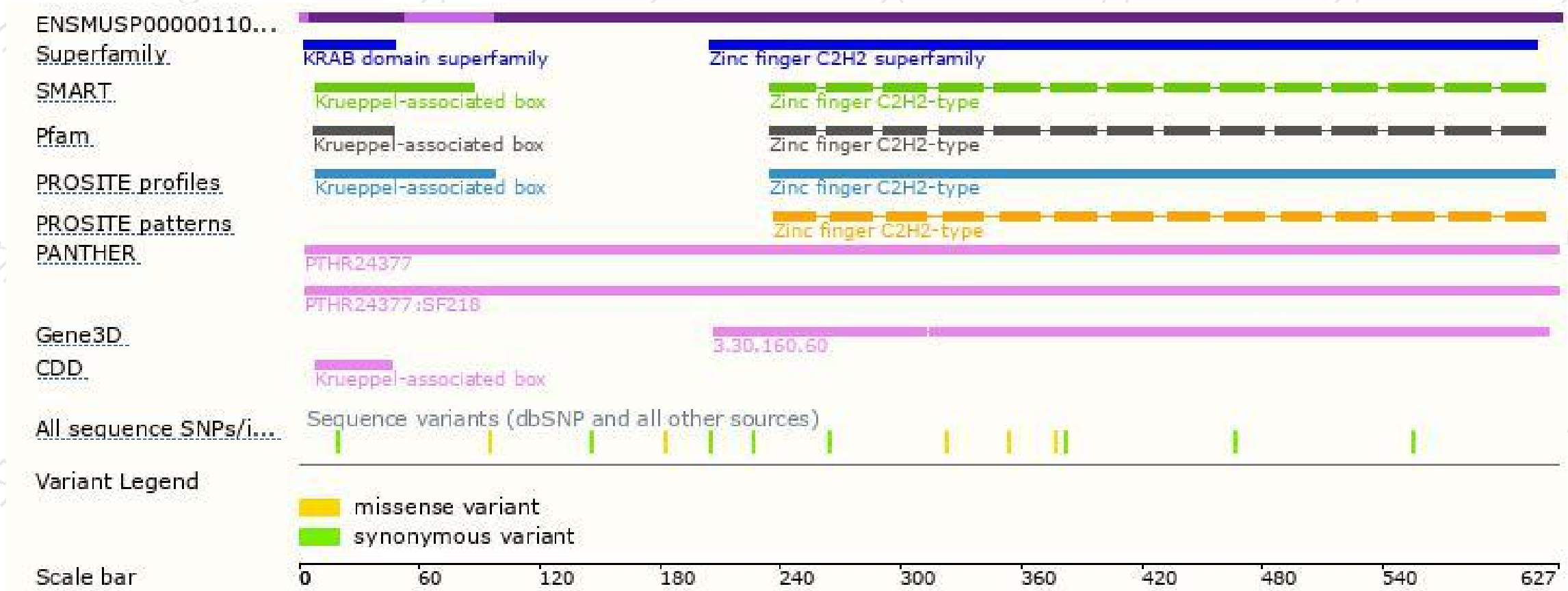
The strategy is based on the design of *Zfp182-202* transcript,The transcription is shown below



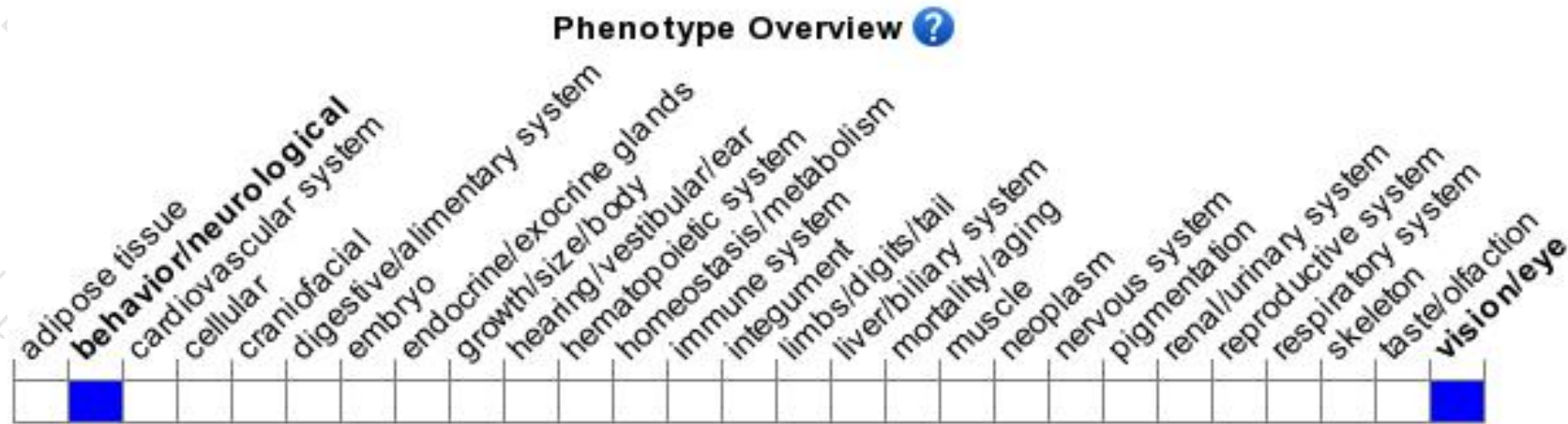
Genomic location distribution



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/>).

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

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