

Emcn Cas9-CKO Strategy

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Project Overview

Project Name

Emcn

Project type

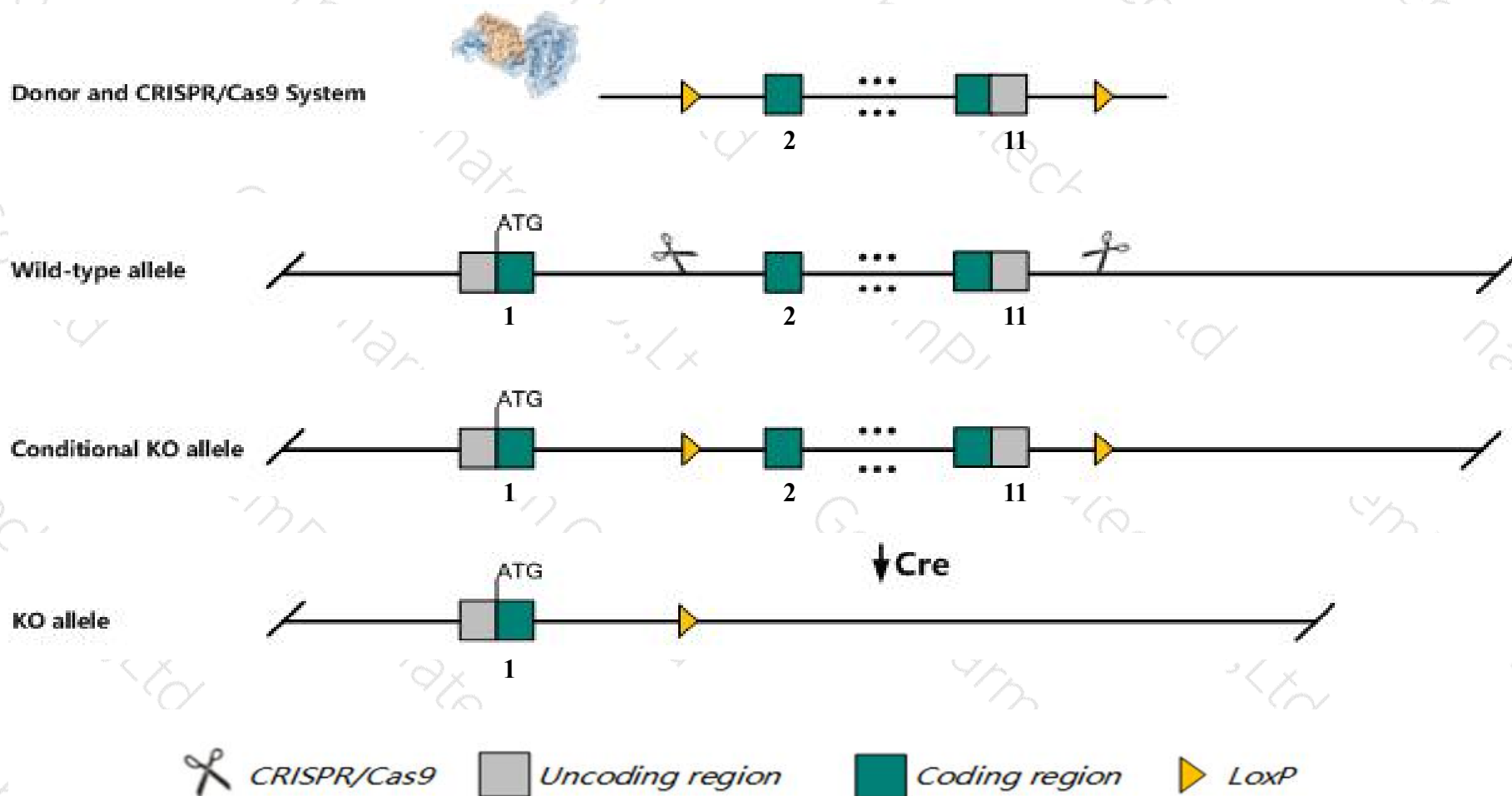
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Emcn* gene has 4 transcripts. According to the structure of *Emcn* gene, exon2-exon11 of *Emcn*-202 (ENSMUST00000122064.7) transcript is recommended as the knockout region. The region contains 713bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Emcn* 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 *Emcn* gene is located on the Chr3. 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)

Emcn endomucin [Mus musculus (house mouse)]

Gene ID: 59308, updated on 26-Mar-2019

Summary



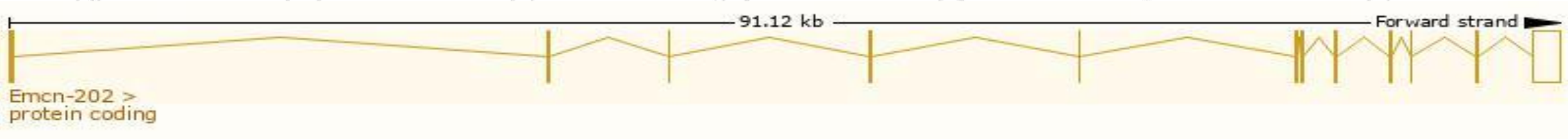
Official Symbol	Emcn provided by MGI
Official Full Name	endomucin provided by MGI
Primary source	MGI:MGI:1891716
See related	Ensembl:ENSMUSG000000054690
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	0610012K22Rik, AI315669, Muc14
Expression	Broad expression in kidney adult (RPKM 46.9), heart adult (RPKM 22.7) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

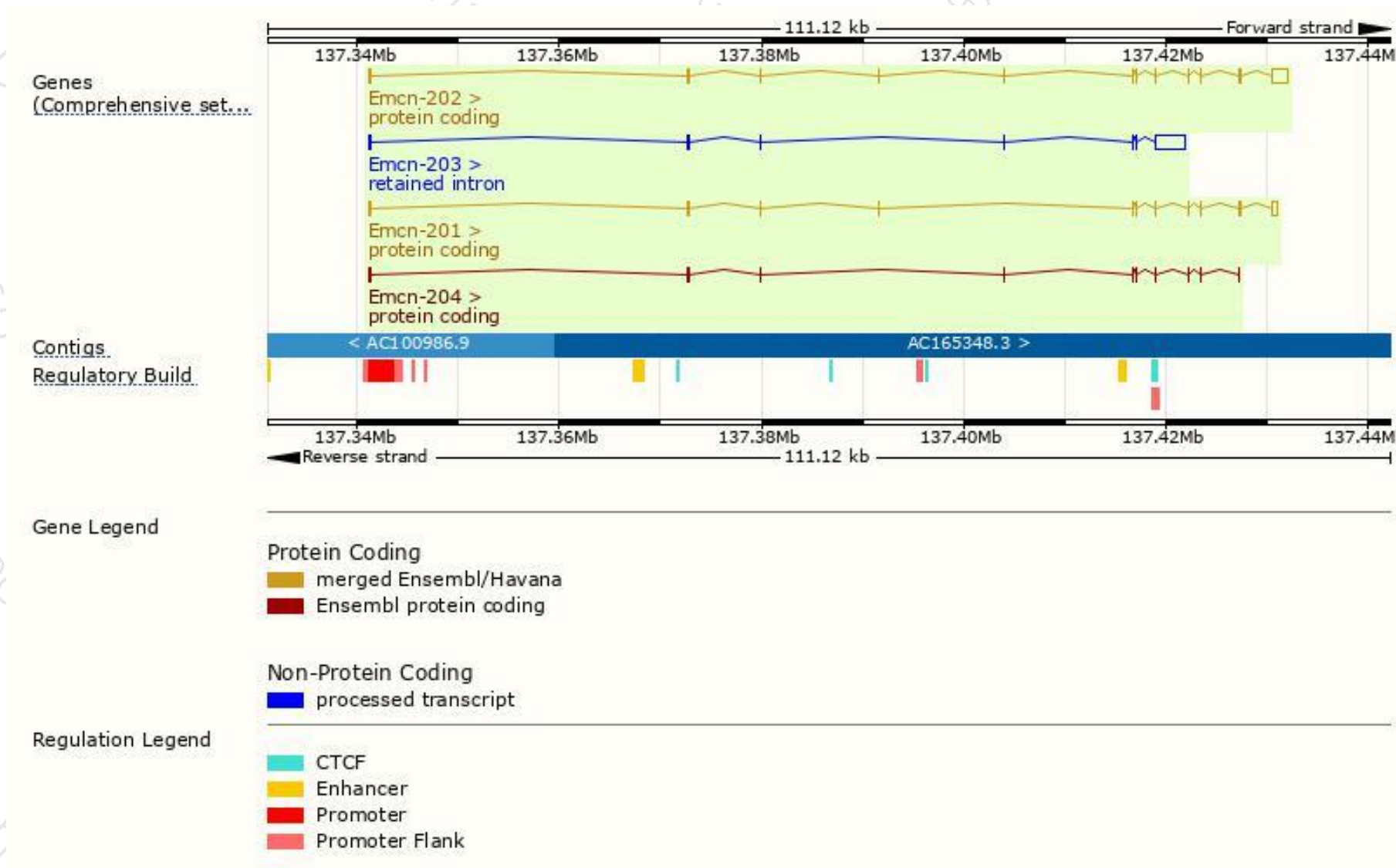
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Emcn-202	ENSMUST00000122064.7	2588	261aa	Protein coding	CCDS51075	Q9R0H2	TSL:1 GENCODE basic APPRIS ALT2
Emcn-201	ENSMUST00000119475.5	1357	248aa	Protein coding	CCDS17861	Q9R0H2	TSL:1 GENCODE basic APPRIS P3
Emcn-204	ENSMUST00000197511.1	723	219aa	Protein coding	-	A0A0G2JDR2	CDS 3' incomplete TSL:5
Emcn-203	ENSMUST00000128985.1	3521	No protein	Retained intron	-	-	TSL:2

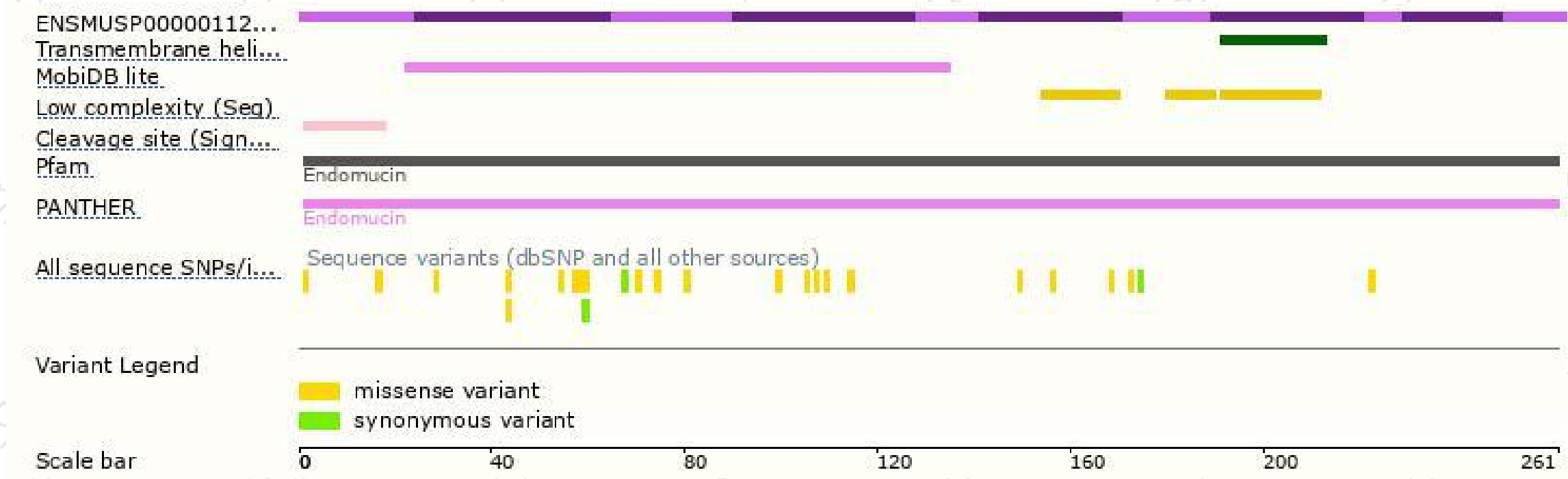
The strategy is based on the design of *Emcn-202* transcript,The transcription is shown below



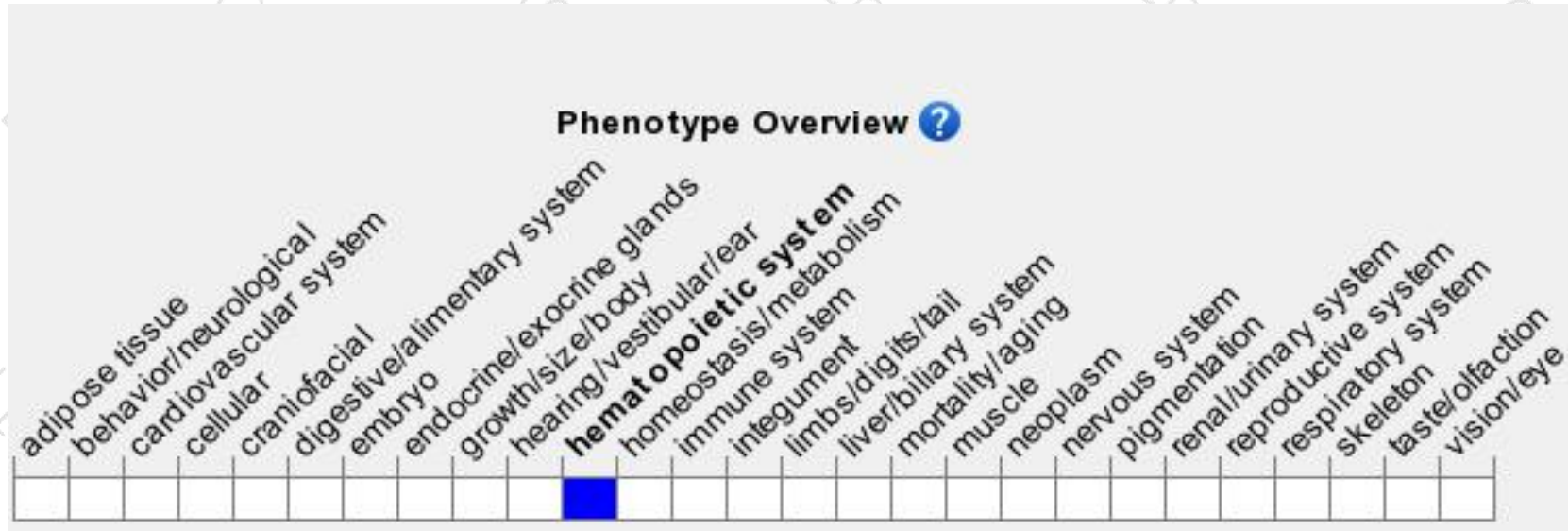
Genomic location distribution



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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