Trim25 Cas9-CKO Strategy

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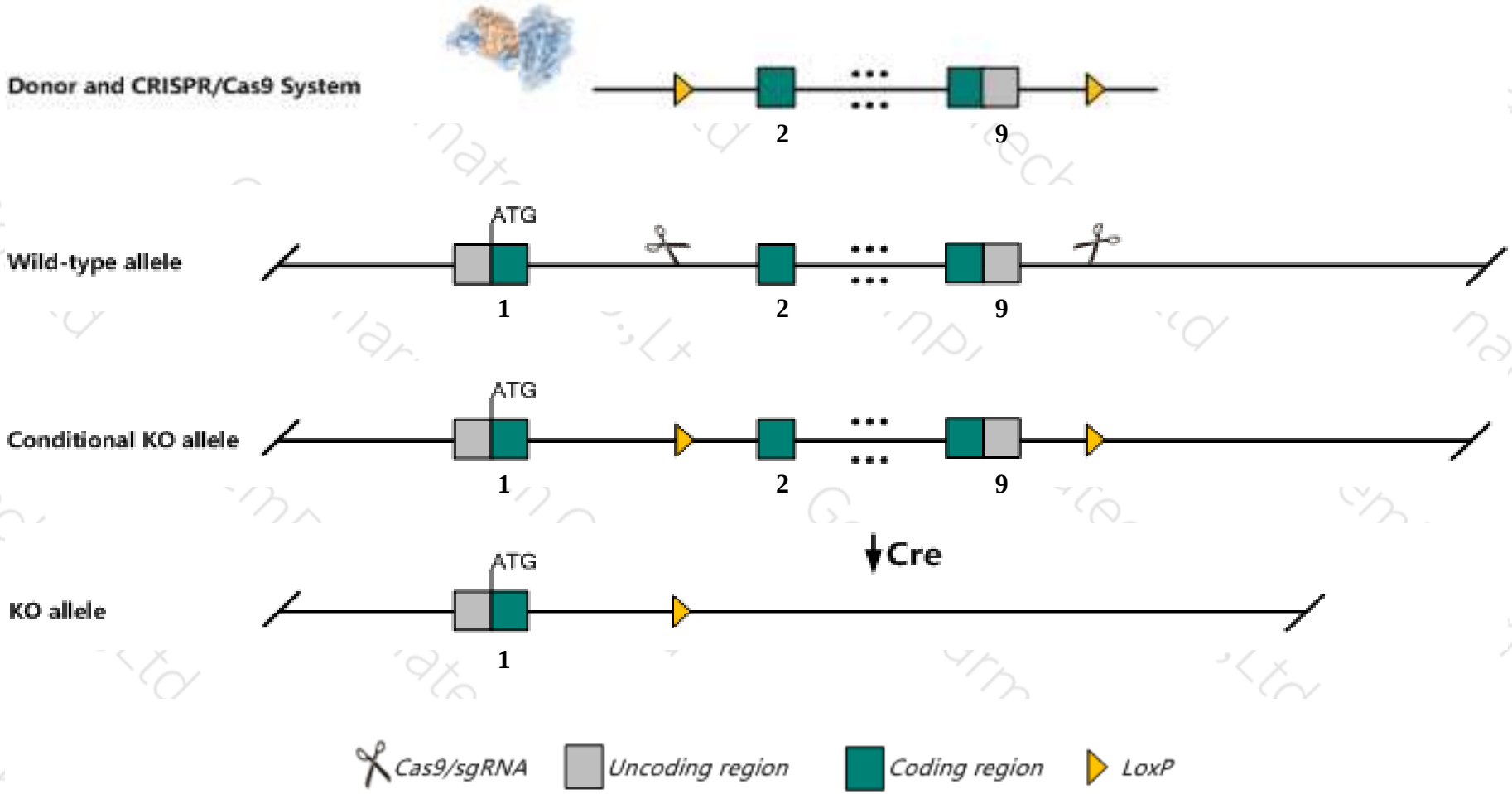
Project Overview

Project Name	***Trim25***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trim25* gene. The schematic diagram is as follows:



Technical routes

- The *Trim25* gene has 3 transcripts. According to the structure of *Trim25* gene, exon2-exon9 of *Trim25-203* (ENSMUST00000107896.9) transcript is recommended as the knockout region.The region contains most of the coding sequence.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Trim25* gene. The brief process is as follows:sgRNA was transcribed in vitro, donor vector was constructed.Cas9, sgRNA 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 was 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,Engineered mutations result in a compromised response to estrogen resulting in functional but small uteri.

- The *Trim25* gene is located on the Chr11. 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）

集萃药康 GemPharmatech

Trim25 tripartite motif-containing 25 [Mus musculus (house mouse)]

Gene ID: 217069, updated on 3-Feb-2019

Summary

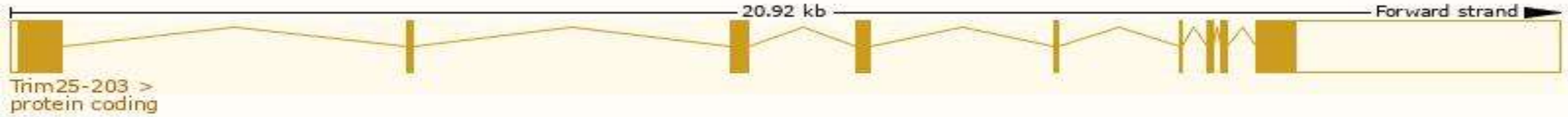
Official Symbol	Trim25 provided by MGI
Official Full Name	tripartite motif-containing 25 provided by MGI
Primary source	MGI:MGI:102749
See related	Ensembl:ENSMUSG00000000275
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AA960166, AL022677, EFP, Zfp147
Expression	Ubiquitous expression in placenta adult (RPKM 10.1), adrenal adult (RPKM 9.4) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

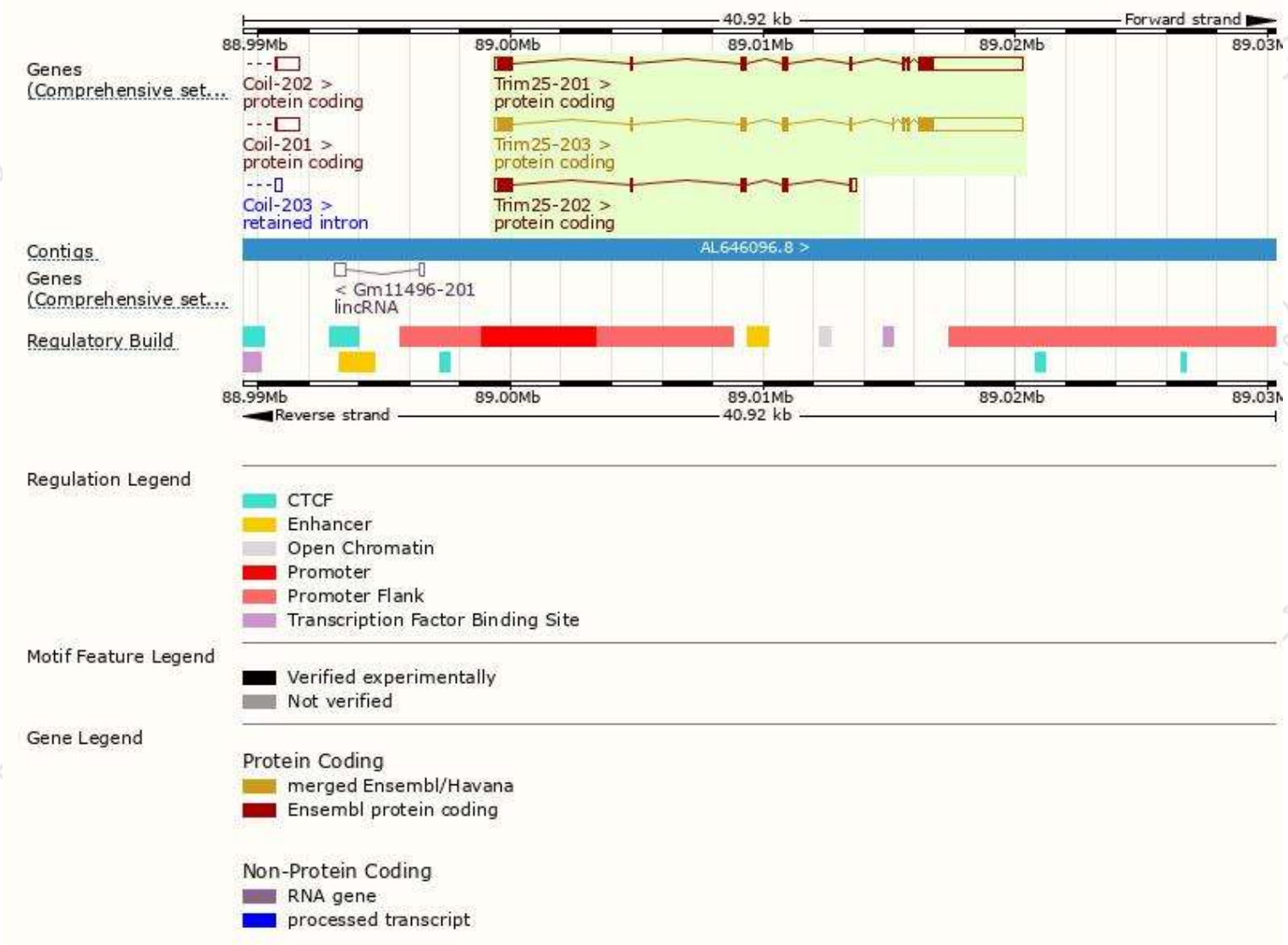
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trim25-203	ENSMUST00000107896.9	5590	634aa	Protein coding	CCDS36278	Q61510	TSL:1 GENCODE basic APPRIS P2
Trim25-201	ENSMUST00000000284.6	5566	626aa	Protein coding	-	Q5SU71	TSL:1 GENCODE basic APPRIS ALT2
Trim25-202	ENSMUST00000100627.8	1433	387aa	Protein coding	-	Q5SU72	TSL:5 GENCODE basic

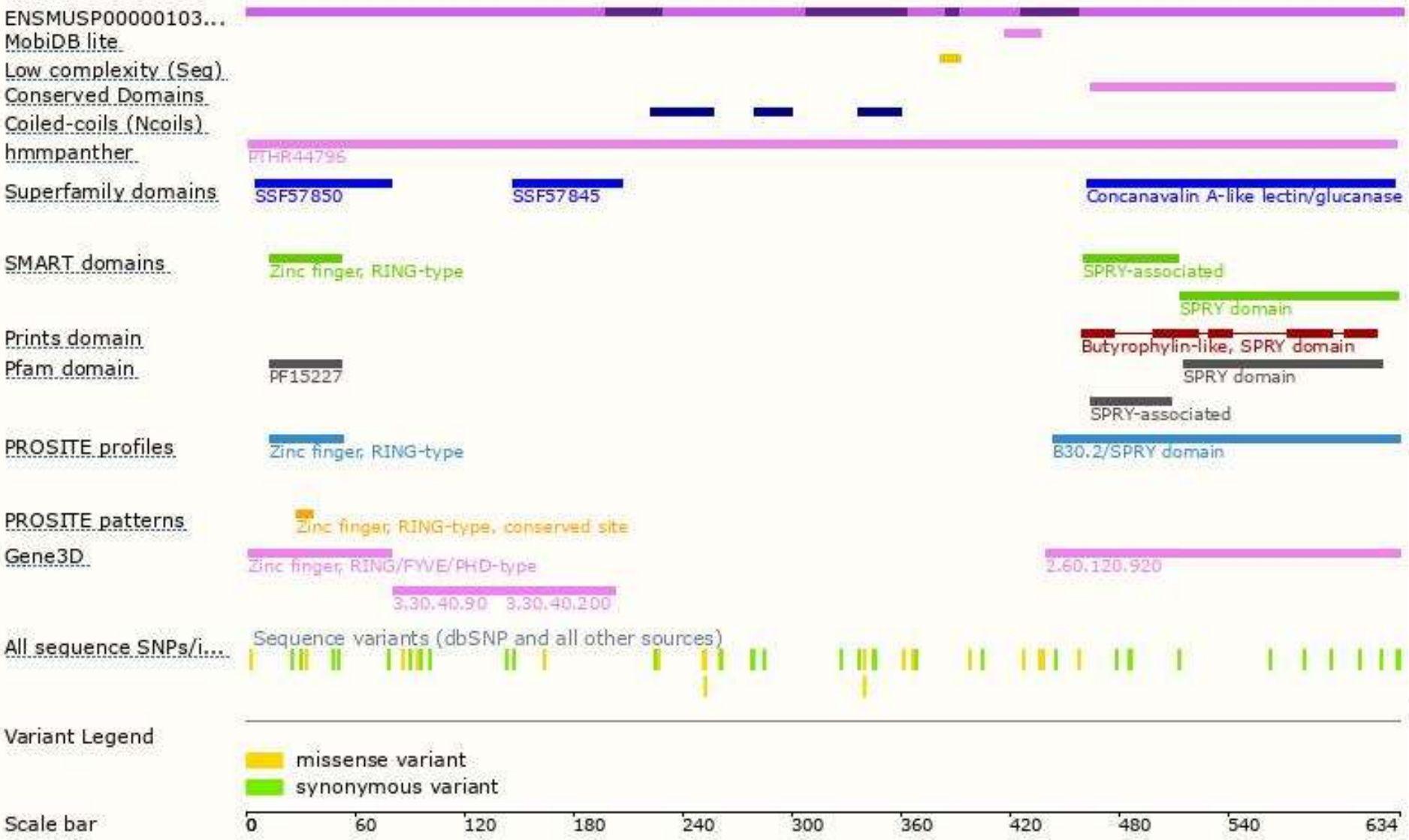
The strategy is based on the design of *Trim25-203* transcript,The transcription is shown below



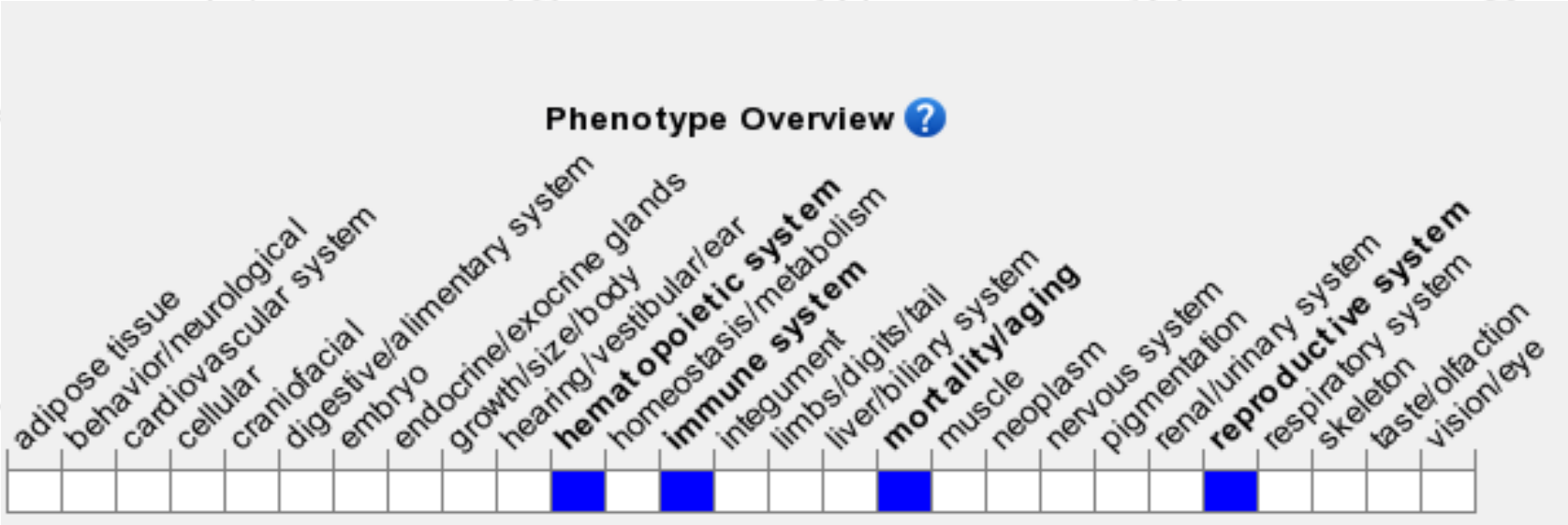
Genomic location distribution



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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