Wdr24 Cas9-CKO *Strategy*

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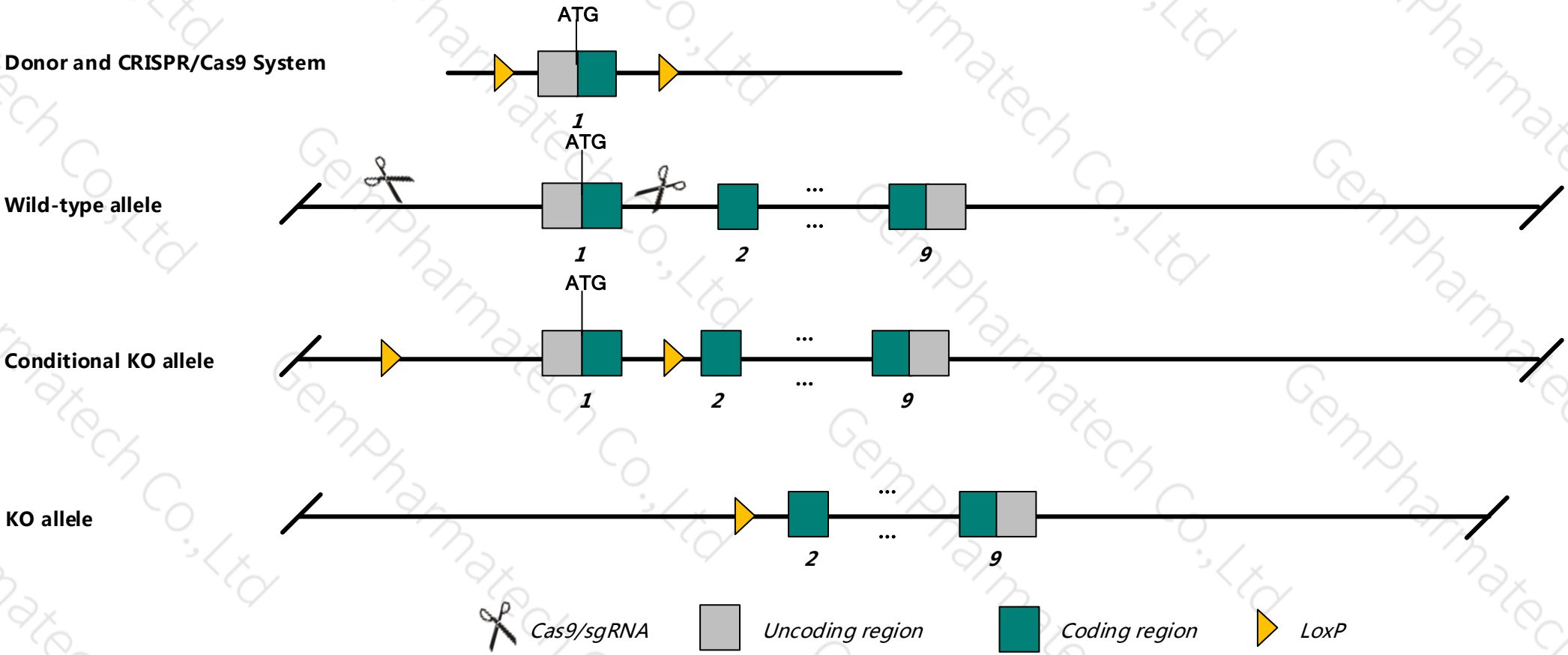
Project Overview

Project Name	***Wdr24***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdr24* gene. The schematic diagram is as follows:



Technical routes

- The *Wdr24* gene has 4 transcripts.According to the structure of *Wdr24* gene, exon1 of *Wdr24*-201 (ENSMUST00000026833.5) transcript is recommended as the knockout region.The region contains start codon ATG.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Wdr24* 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 or cell types.

Notice

- The KO region contains functional region of the *Fbxl16 and Gm26694* gene.Knockout the region may affect the function of *Fbxl16 and Gm26694* gene.

- The *Wdr24* gene is located on the Chr17. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information （NCBI）

Wdr24 WD repeat domain 24 [*Mus musculus* (house mouse)]

Gene ID: 268933, updated on 5-Aug-2018

Summary

Official Symbol	Wdr24 provided by MGI
Official Full Name	WD repeat domain 24 provided by MGI
Primary source	MGI:MGI:2446285
See related	Ensembl:ENSMUSG00000025737 Vega:OTTMUSG00000029399
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	BC037651
Expression	Ubiquitous expression in thymus adult (RPKM 26.9), ovary adult (RPKM 24.9) and 28 other tissues See more
Orthologs	human all

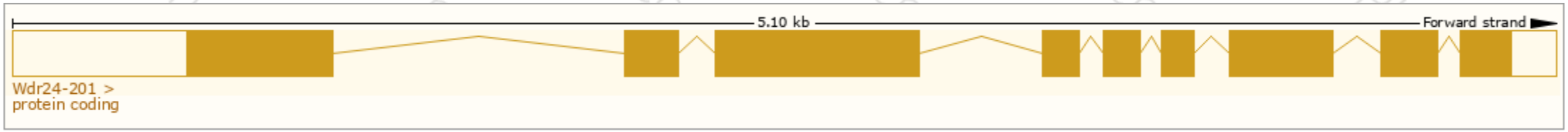
Transcript information（Ensembl）

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

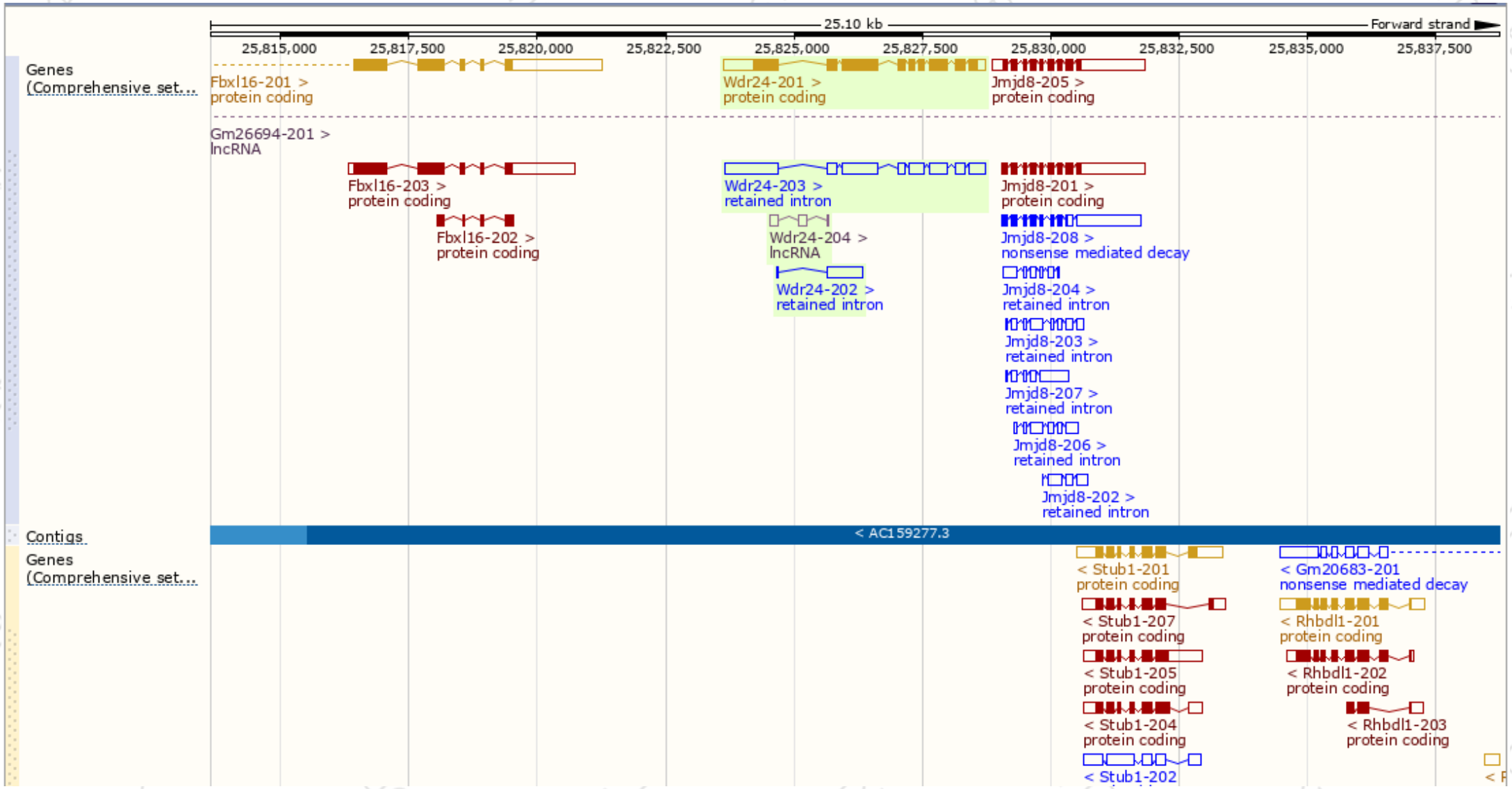
Show/hide columns (1 hidden) Filter

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdr24-201	ENSMUST00000026833.5	3099	790aa	Protein coding	CCDS28531	Q8CFJ9	TSL:1 GENCODE basic APPRIS P1
Wdr24-203	ENSMUST00000160349.1	3139	No protein	Retained intron	-	-	TSL:1
Wdr24-202	ENSMUST00000160275.1	716	No protein	Retained intron	-	-	TSL:3
Wdr24-204	ENSMUST00000160829.1	317	No protein	lncRNA	-	-	TSL:5

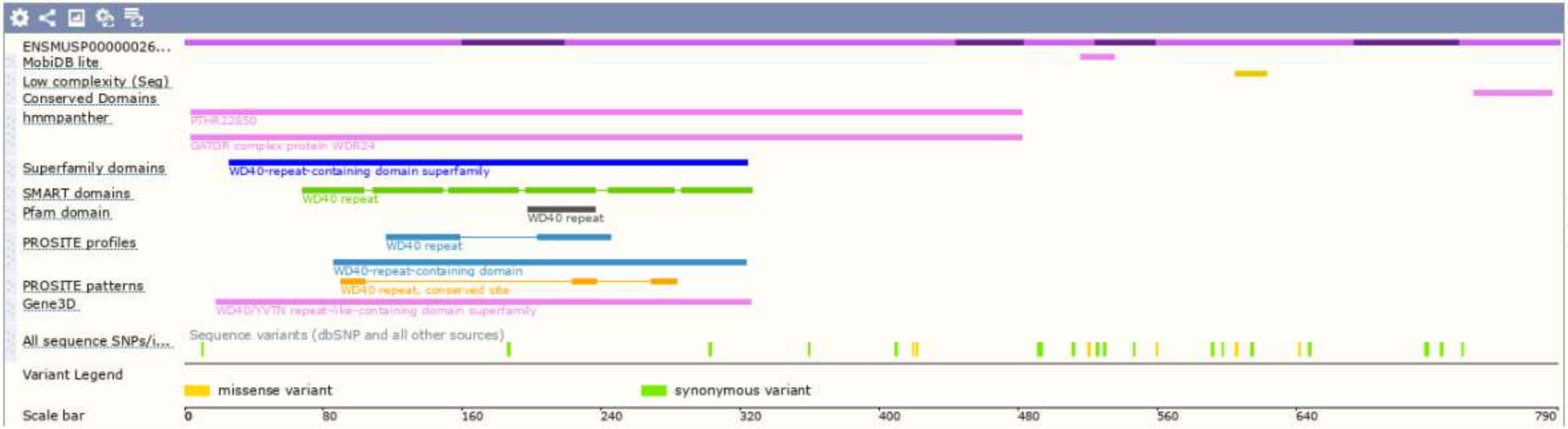
The strategy is based on the design of *Wdr24*-201 transcript,The transcription is shown below



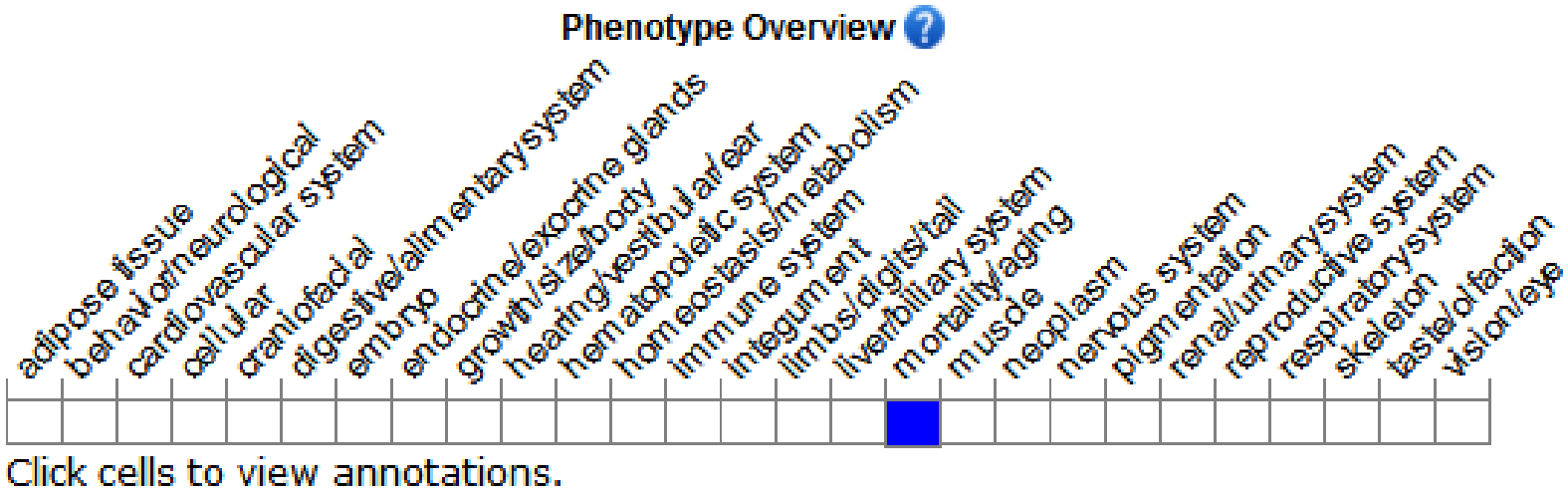
Genomic location distribution



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/) .

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

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