Wdr36 Cas9-CKO *Strategy*

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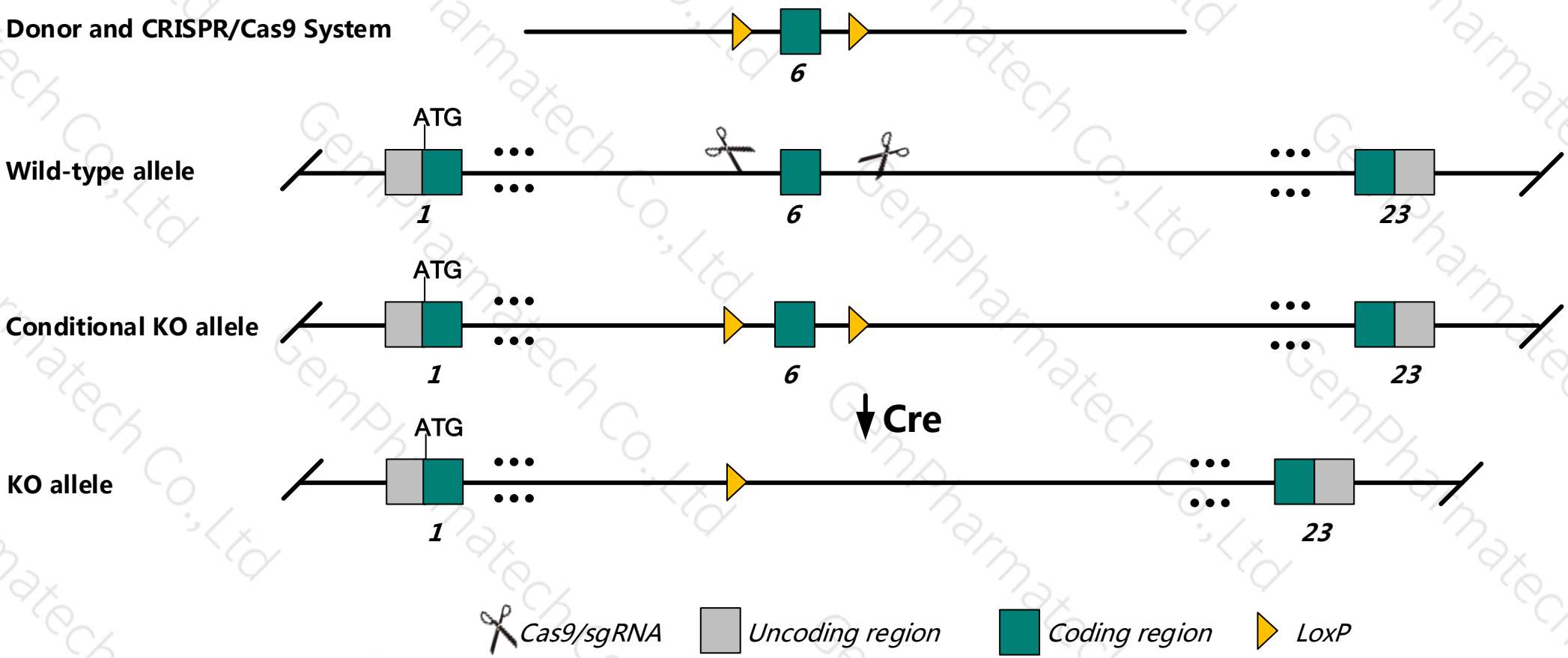
Project Overview

Project Name	***Wdr36***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wdr36* gene. The schematic diagram is as follows:



Technical routes

- The *Wdr36* gene has 4 transcripts.According to the structure of *Wdr36* gene, exon6 of *Wdr36*-201 (ENSMUST00000053663.10) transcript is recommended as the knockout region.The region contains 55bp coding sequence.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Wdr36* 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

- According to the existing MGI data，Homozygous inactivation of this gene leads to complete embryonic lethality before implantation. In culture, homozygous mutant embryos fail to reach the blastocyst stage.
- The *Wdr36* gene is located on the Chr18. 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）

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Wdr36 WD repeat domain 36 [*Mus musculus* (house mouse)]

Gene ID: 225348, updated on 5-Aug-2018

Summary

Official Symbol	Wdr36 provided by MGI
Official Full Name	WD repeat domain 36 provided by MGI
Primary source	MGI:MGI:1917819
See related	Ensembl:ENSMUSG00000038299
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	Ta-wdrp; 5730444A13Rik
Expression	Ubiquitous expression in CNS E11.5 (RPKM 8.0), placenta adult (RPKM 7.8) and 28 other tissues See more
Orthologs	human all

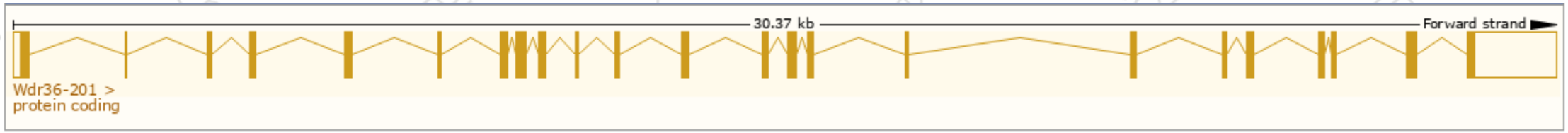
Transcript information（Ensembl）

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

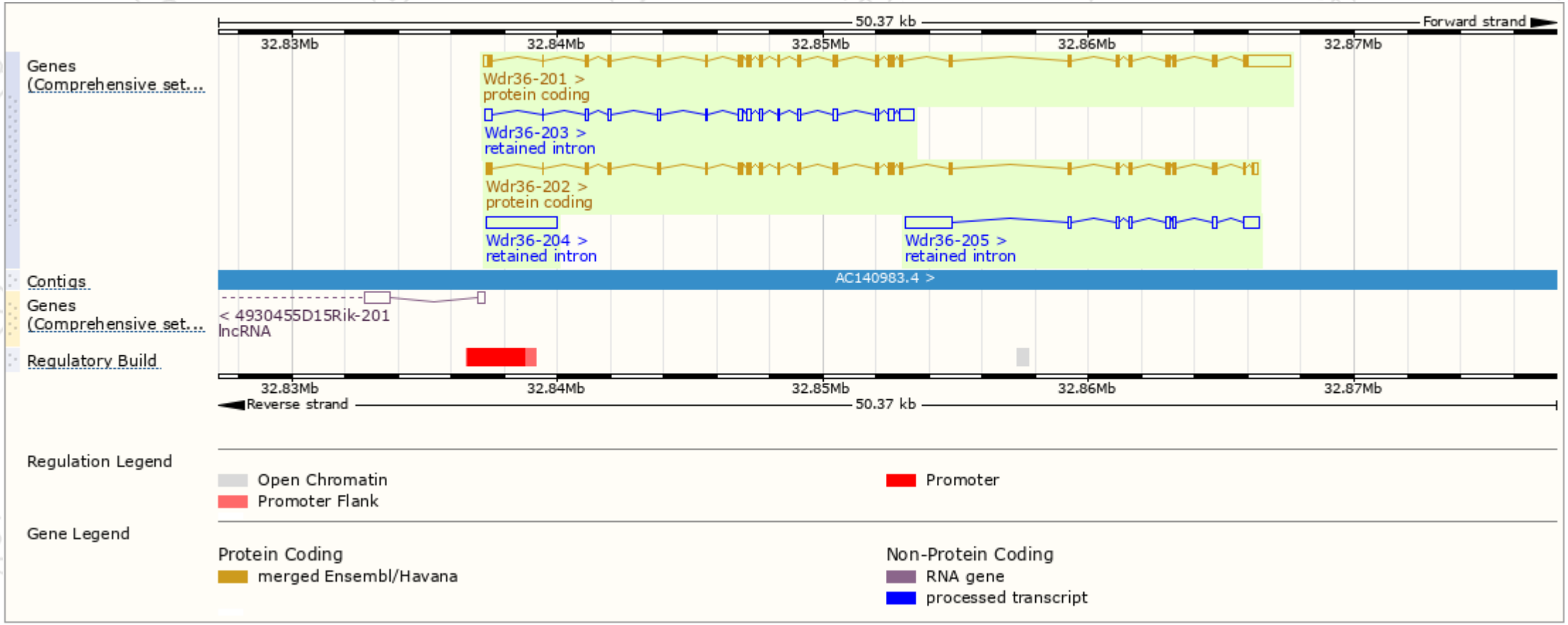
Show/hide columns (1 hidden) Filter

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wdr36-201	ENSMUST00000053663.10	4455	899aa	Protein coding	CCDS50246	Q3TAQ9	TSL:1 GENCODE basic APPRIS P4
Wdr36-202	ENSMUST00000166214.8	2906	883aa	Protein coding	CCDS50245	Q3TA68	TSL:1 GENCODE basic APPRIS ALT2
Wdr36-205	ENSMUST00000234798.1	3063	No protein	Retained intron	-	-	-
Wdr36-204	ENSMUST00000234434.1	2666	No protein	Retained intron	-	-	-
Wdr36-203	ENSMUST00000234158.1	2330	No protein	Retained intron	-	-	-

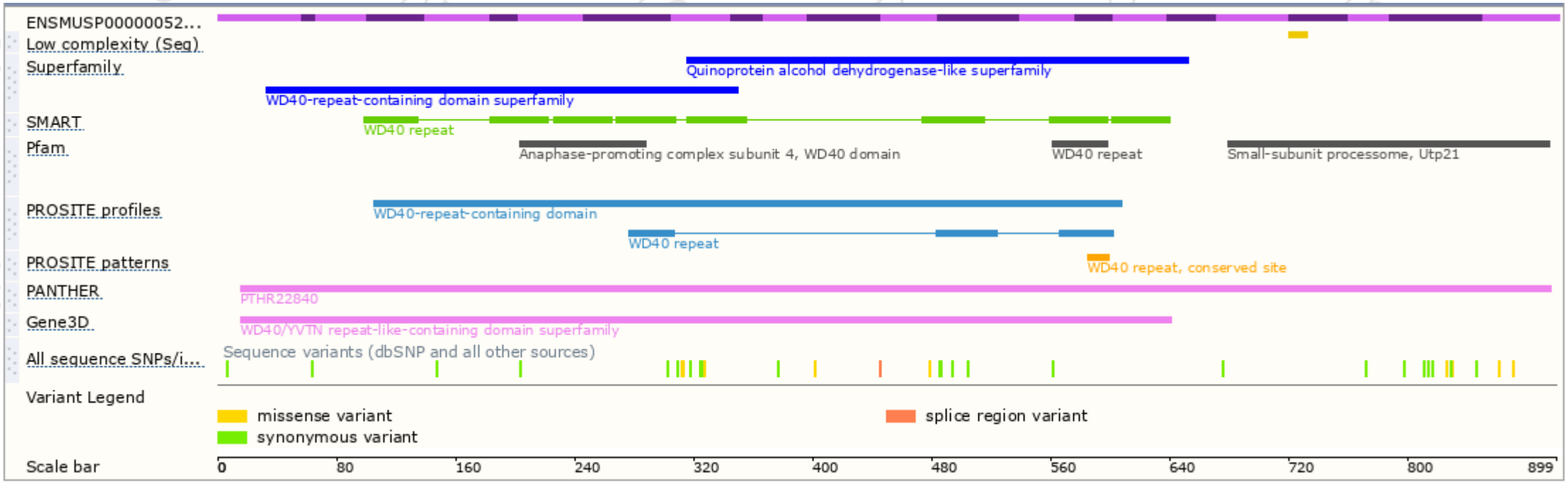
The strategy is based on the design of *Wdr36*-201 transcript,The transcription is shown below



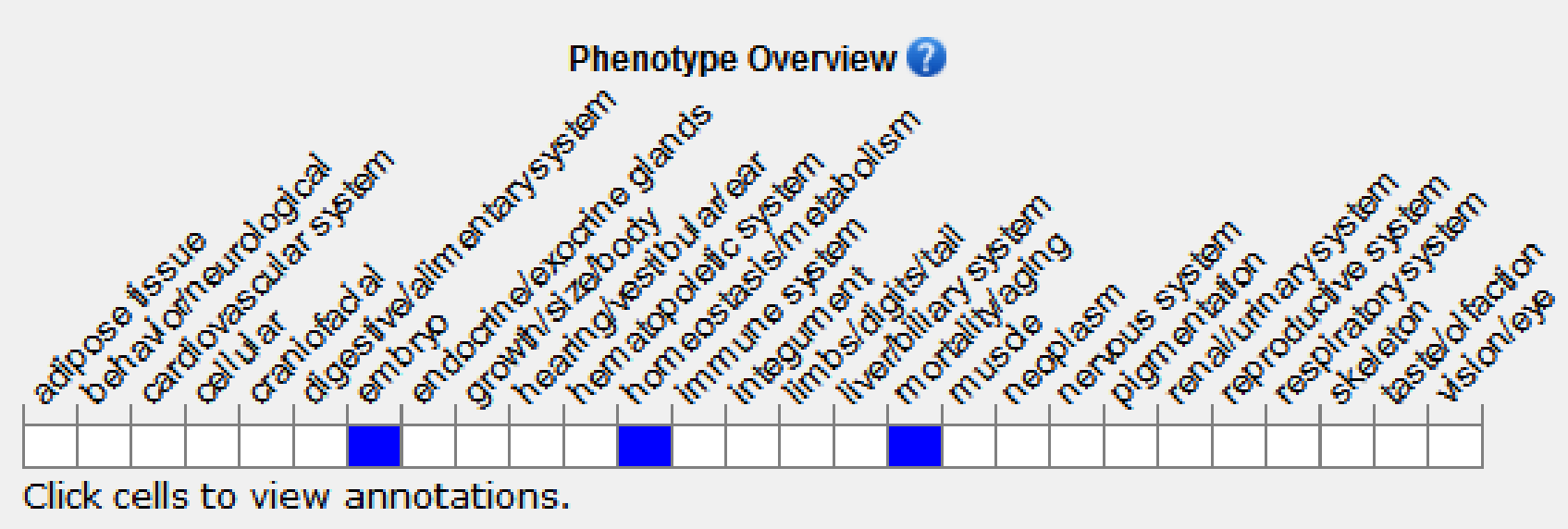
Genomic location distribution



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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