Olr1 Cas9-KO Strategy

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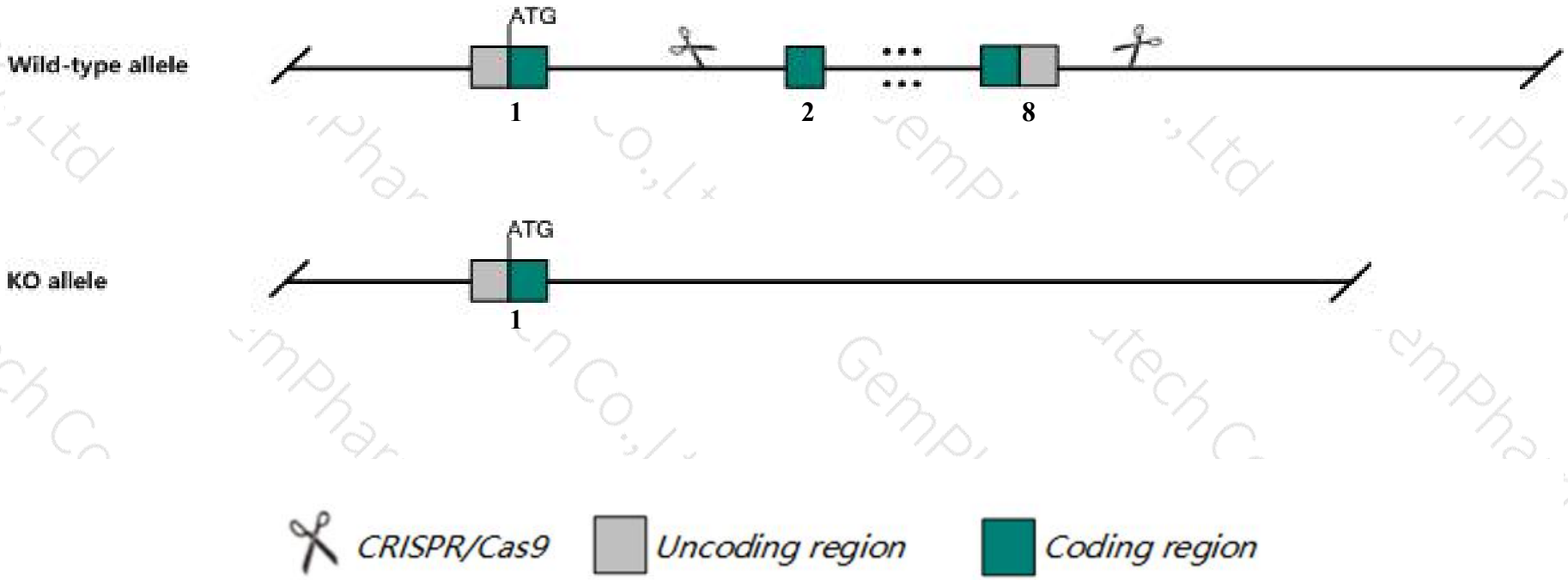
Project Overview

Project Name	***Olr1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Olr1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Olr1* gene has 5 transcripts. According to the structure of *Olr1* gene, exon2-exon8 of *Olr1-201* (ENSMUST00000032265.12) 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 *Olr1* gene. The brief process is as follows: CRISPR/Cas9 system were

Notice

➢ According to the existing MGI data,Homozygous mutation of this gene results in no obvious phenotype.

➢Transcript *Olr1*-202&205 may not be affected.

➢ The *Olr1* gene is located on the Chr6. 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 gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information（NCBI）

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Olr1 oxidized low density lipoprotein (lectin-like) receptor 1 [*Mus musculus* (house mouse)]

Gene ID: 108078, updated on 24-Sep-2019

Summary

Official Symbol	Olr1 provided by MGI
Official Full Name	oxidized low density lipoprotein (lectin-like) receptor 1 provided by MGI
Primary source	MGI:MGI:1261434
See related	Ensembl:ENSMUSG00000030162
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	LOX-1; SR-EI; Scare1
Expression	Biased expression in placenta adult (RPKM 10.0), lung adult (RPKM 1.0) and 2 other tissues See more
Orthologs	human all

Genomic context

Location: 6; 6 F3

See Olr1 in Genome Data Viewer

Exon count: 9

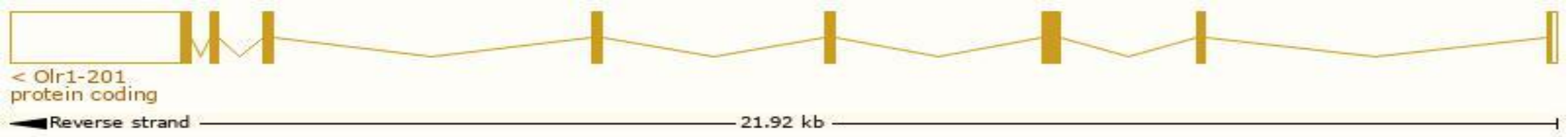
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	6	NC_000072.6 (129479150..129507350, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	6	NC_000072.5 (129435265..129457183, complement)

Transcript information（Ensembl）

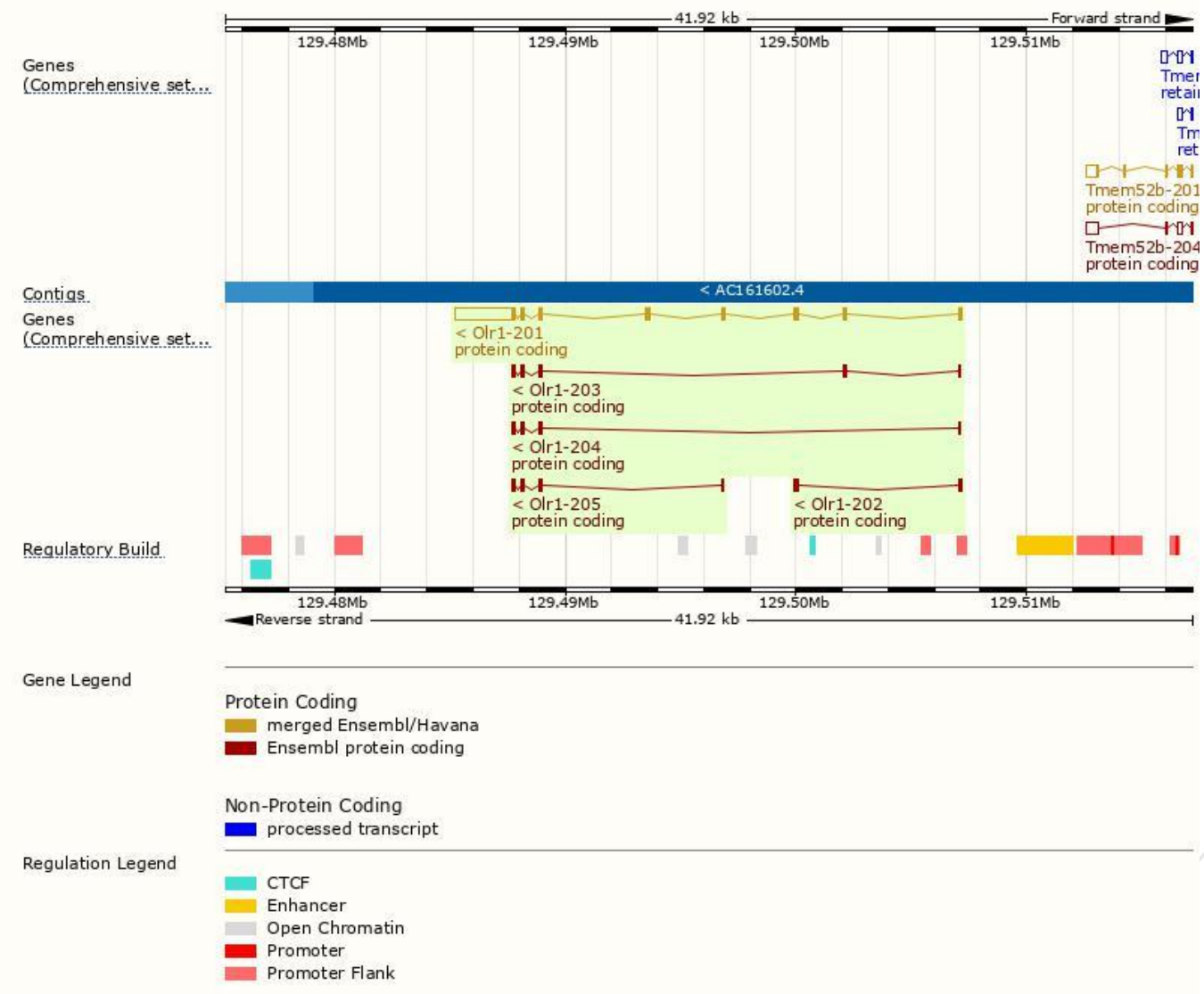
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Olr1-201	ENSMUST00000032265.12	3572	363aa	Protein coding	CCDS20588	Q9EQ09	TSL:1 GENCODE basic APPRIS P3
Olr1-203	ENSMUST00000182784.3	570	189aa	Protein coding	CCDS80620	G4WK10	TSL:1 GENCODE basic APPRIS ALT2
Olr1-204	ENSMUST00000183258.7	468	155aa	Protein coding	CCDS80619	G4WK09	TSL:1 GENCODE basic APPRIS ALT2
Olr1-205	ENSMUST00000203564.1	418	140aa	Protein coding	-	A0A0N4SUV1	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:5 APPRIS ALT2
Olr1-202	ENSMUST00000162815.1	350	97aa	Protein coding	-	E0CXW6	CDS 3' incomplete TSL:3

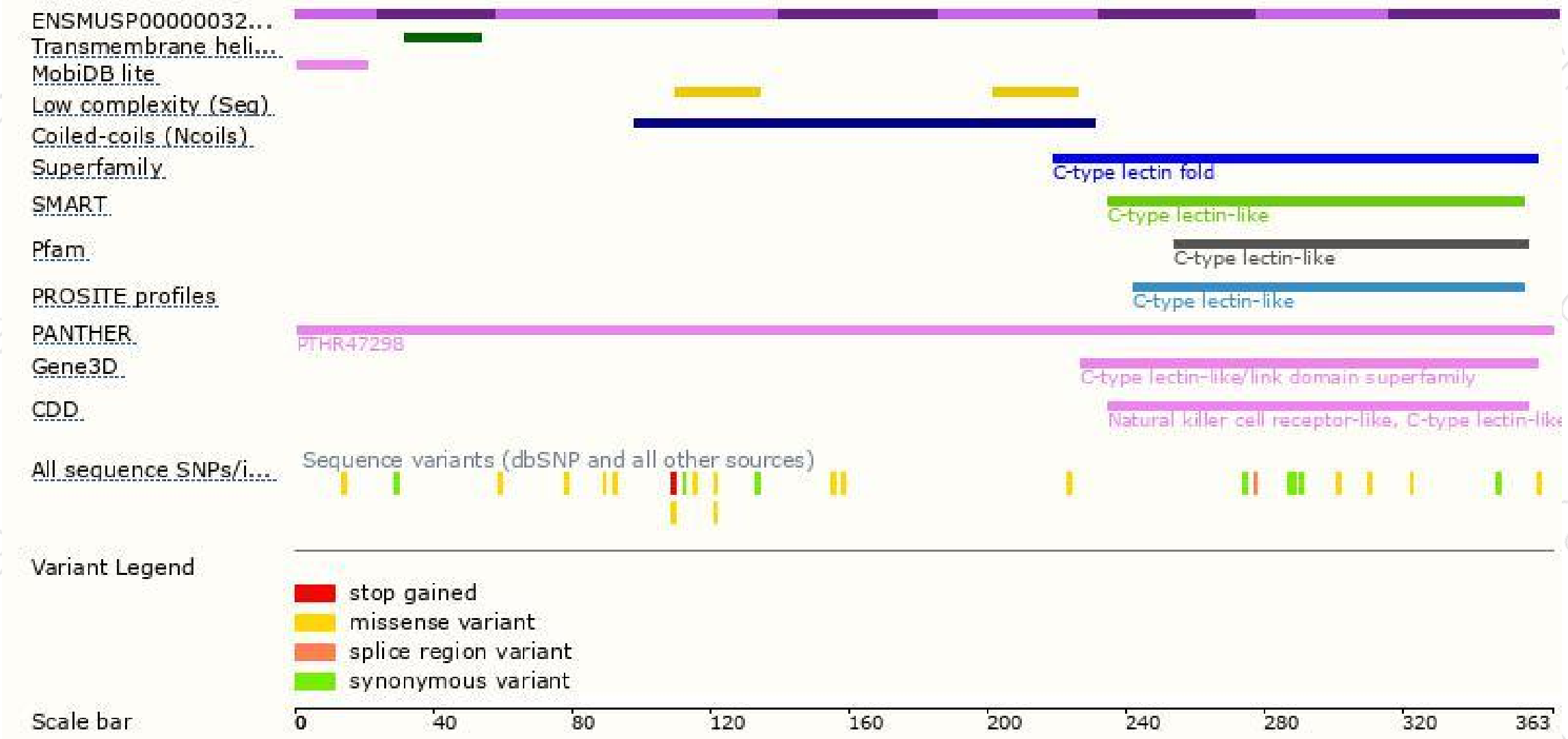
The strategy is based on the design of *Olr1-201* transcript,The transcription is shown below



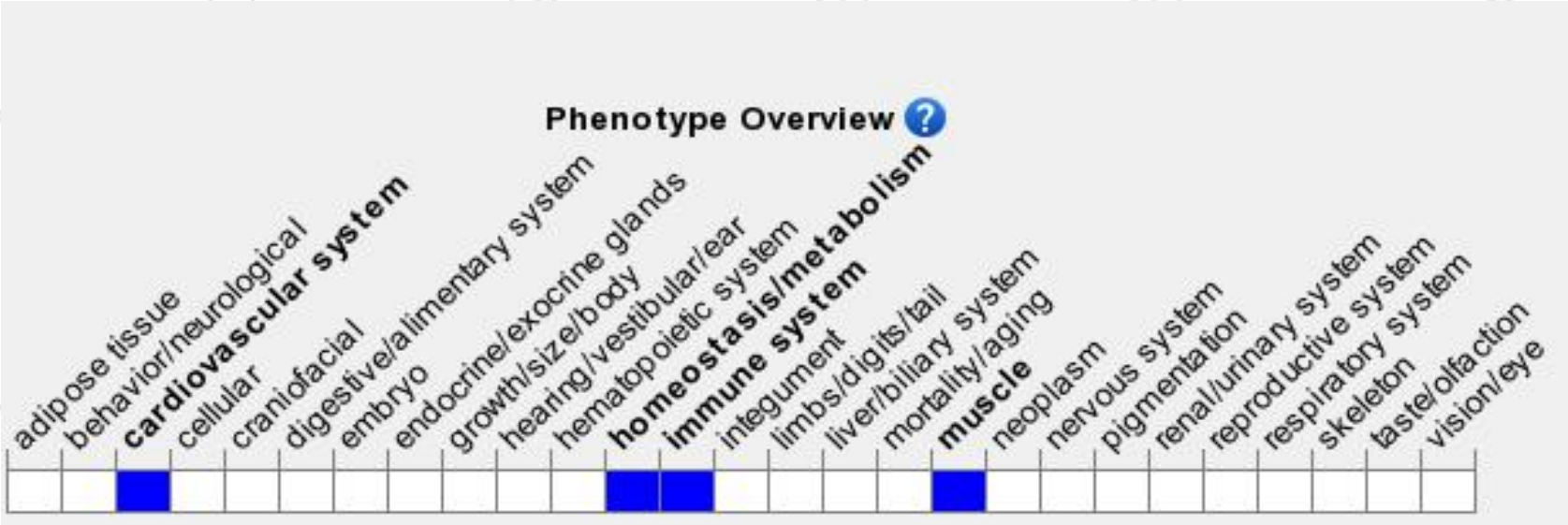
Genomic location distribution



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/).

According to the existing MGI data,Homozygous mutation of this gene results in no obvious phenotype.

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

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