

Pdcd1 Cas9-KO Strategy

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Project Overview

Project Name

Pdcd1

Project type

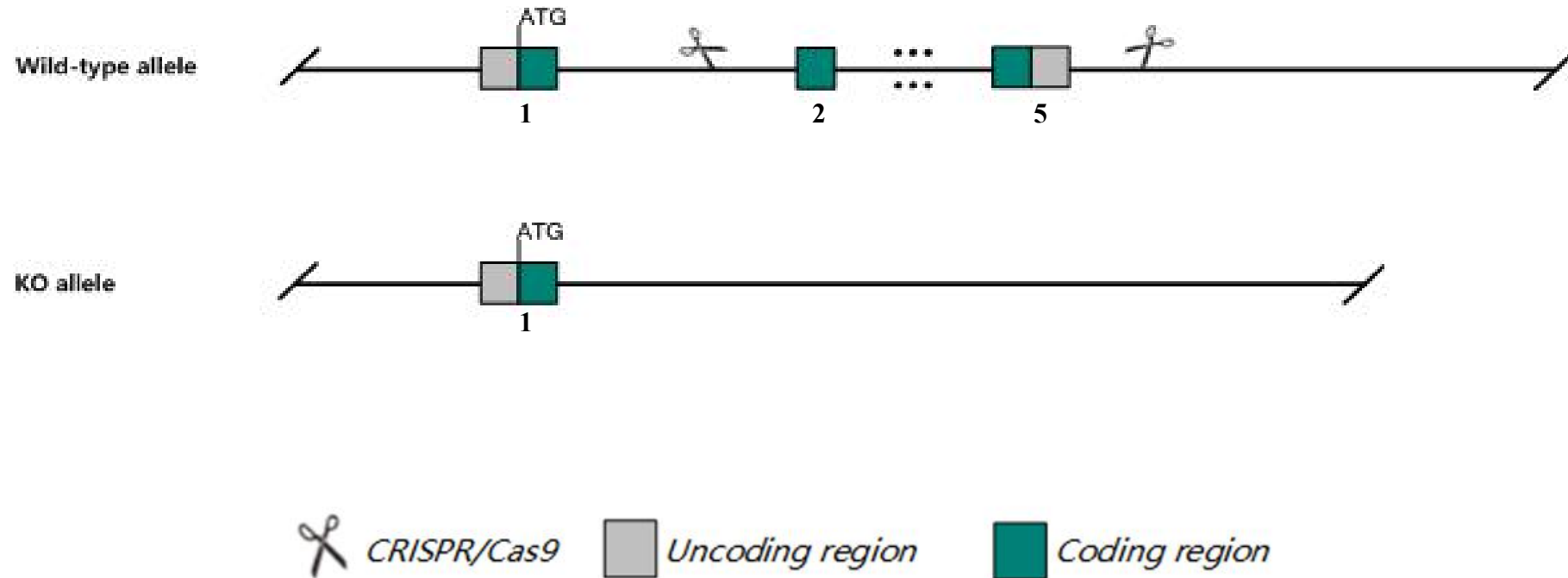
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pdcd1* gene. The schematic diagram is as follows:



The *Pdcd1* gene has 1 transcript. According to the structure of *Pdcd1* gene, exon2-exon5 of *Pdcd1-201* (ENSMUST00000027507.7) transcript is recommended as the knockout region. The region contains 791bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Pdcd1* gene. The brief process is as follows: CRISPR/Cas9 system

According to the existing MGI data, Mice homozygous for disruptions in this gene display abnormalities in leukopoiesis and the immune system which vary considerably depending on the genetic background.

The *Pdcd1* gene is located on the Chr1. 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.

Pdcd1 programmed cell death 1 [Mus musculus (house mouse)]

Gene ID: 18566, updated on 2-Apr-2019

Summary



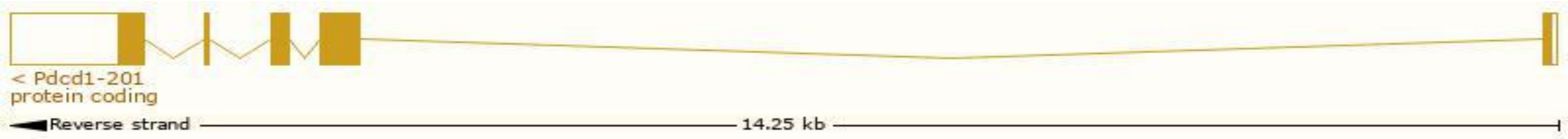
Official Symbol	Pdcd1 provided by MGI
Official Full Name	programmed cell death 1 provided by MGI
Primary source	MGI:MGI:104879
See related	Ensembl:ENSMUSG00000026285
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Ly101, PD-1, Pdc1
Expression	Biased expression in thymus adult (RPKM 7.6), ovary adult (RPKM 3.5) and 3 other tissues See more
Orthologs	human all

Transcript information Ensembl

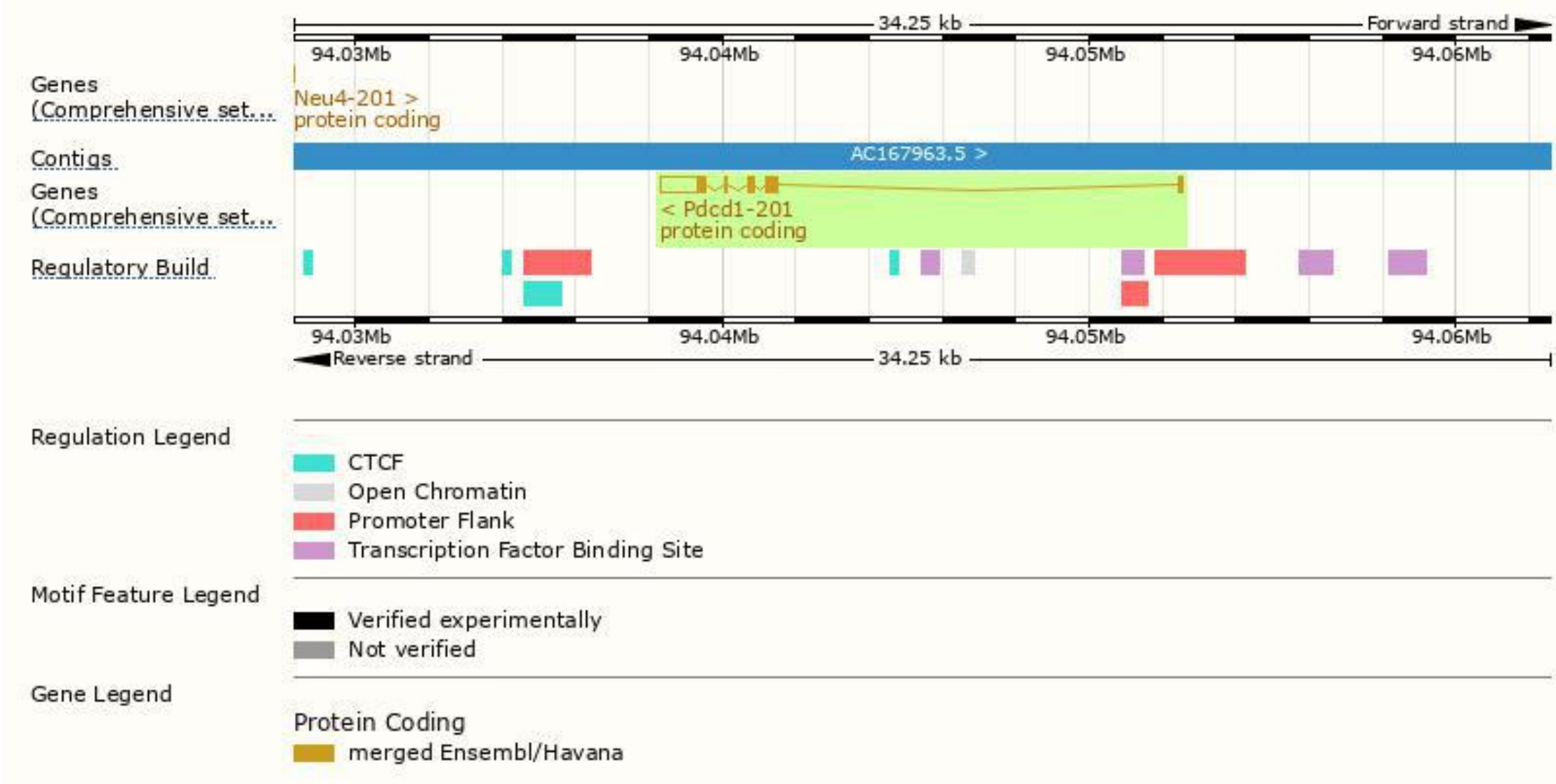
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pdcd1-201	ENSMUST00000027507.7	1930	288aa	Protein coding	CCDS15200	Q02242 Q544F3	TSL:1 GENCODE basic APPRIS P1

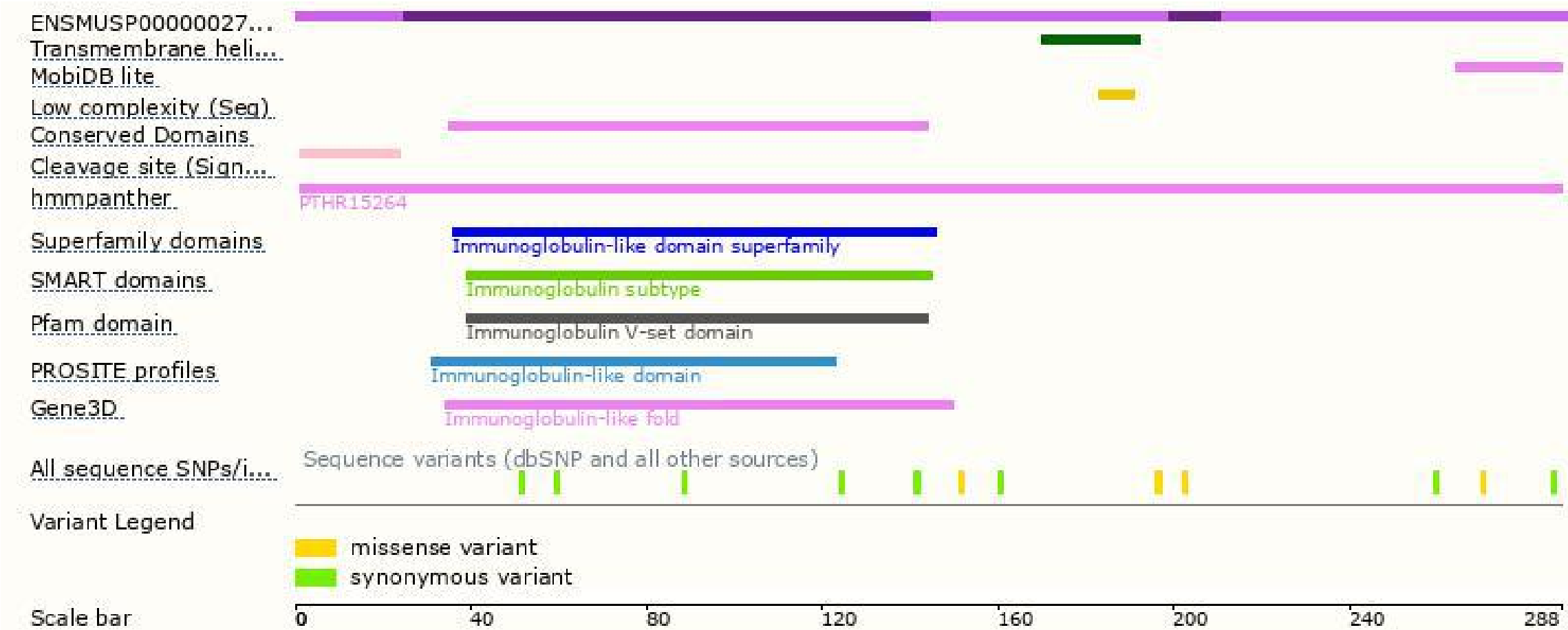
The strategy is based on the design of *Pdcd1-201* transcript,The transcription is shown below



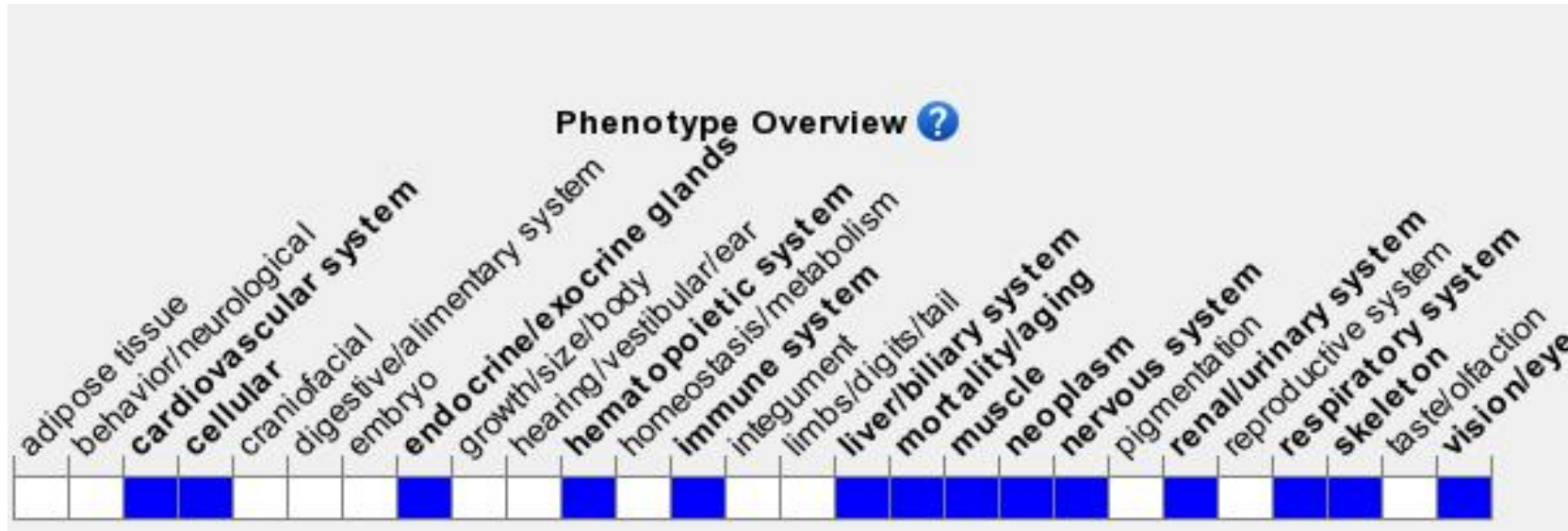
Genomic location distribution



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, Mice homozygous for disruptions in this gene display abnormalities in leukopoiesis and the immune system which vary considerably depending on the genetic background.

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