

Elf4 Cas9-KO Strategy

Designer:

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Design Date:

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Project Overview

Project Name

Elf4

Project type

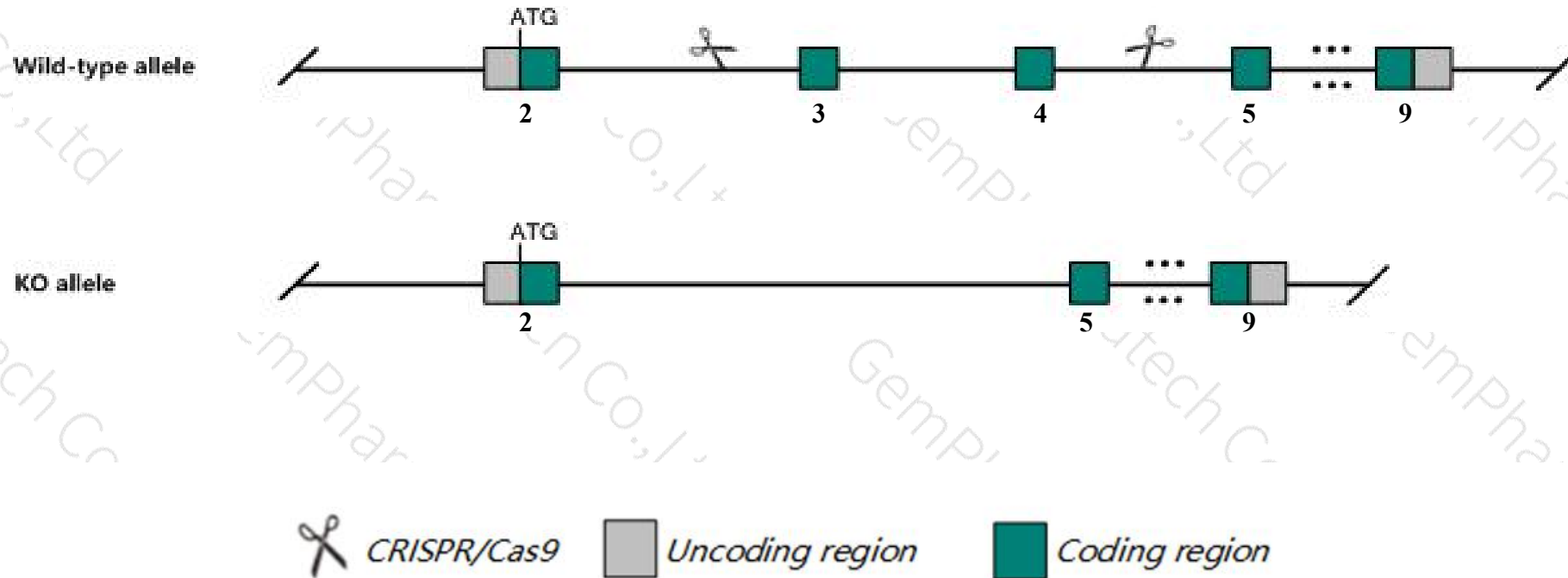
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Elf4* gene. The schematic diagram is as follows:



- The *Elf4* gene has 3 transcripts. According to the structure of *Elf4* gene, exon3-exon4 of *Elf4-201* (ENSMUST00000033429.8) transcript is recommended as the knockout region. The region contains 265bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Elf4* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Mice homozygous for disruptions in this gene have hematopoietic cells with impaired proliferative properties. Lymphocyte development and function is altered, particularly with respect to NK cells and NK-T cells.
- The *Elf4* gene is located on the ChrX. 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)

Elf4 E74-like factor 4 (ets domain transcription factor) [Mus musculus (house mouse)]

Gene ID: 56501, updated on 31-Jan-2019

Summary



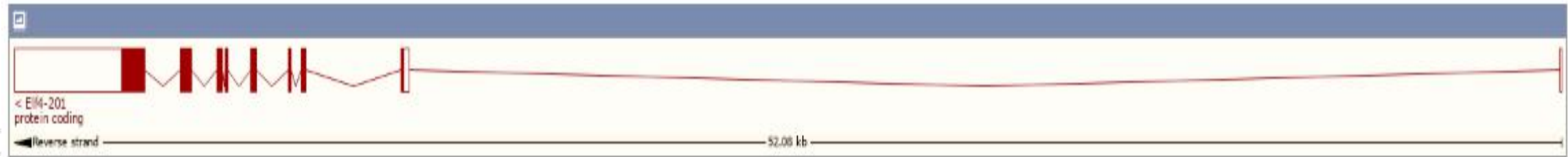
Official Symbol	Elf4 provided by MGI
Official Full Name	E74-like factor 4 (ets domain transcription factor) provided by MGI
Primary source	MGI:MGI:1928377
See related	Ensembl:ENSMUSG000000031103
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AV314029, BC042423, Gm9907, Mef
Expression	Broad expression in thymus adult (RPKM 29.1), spleen adult (RPKM 20.4) and 20 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

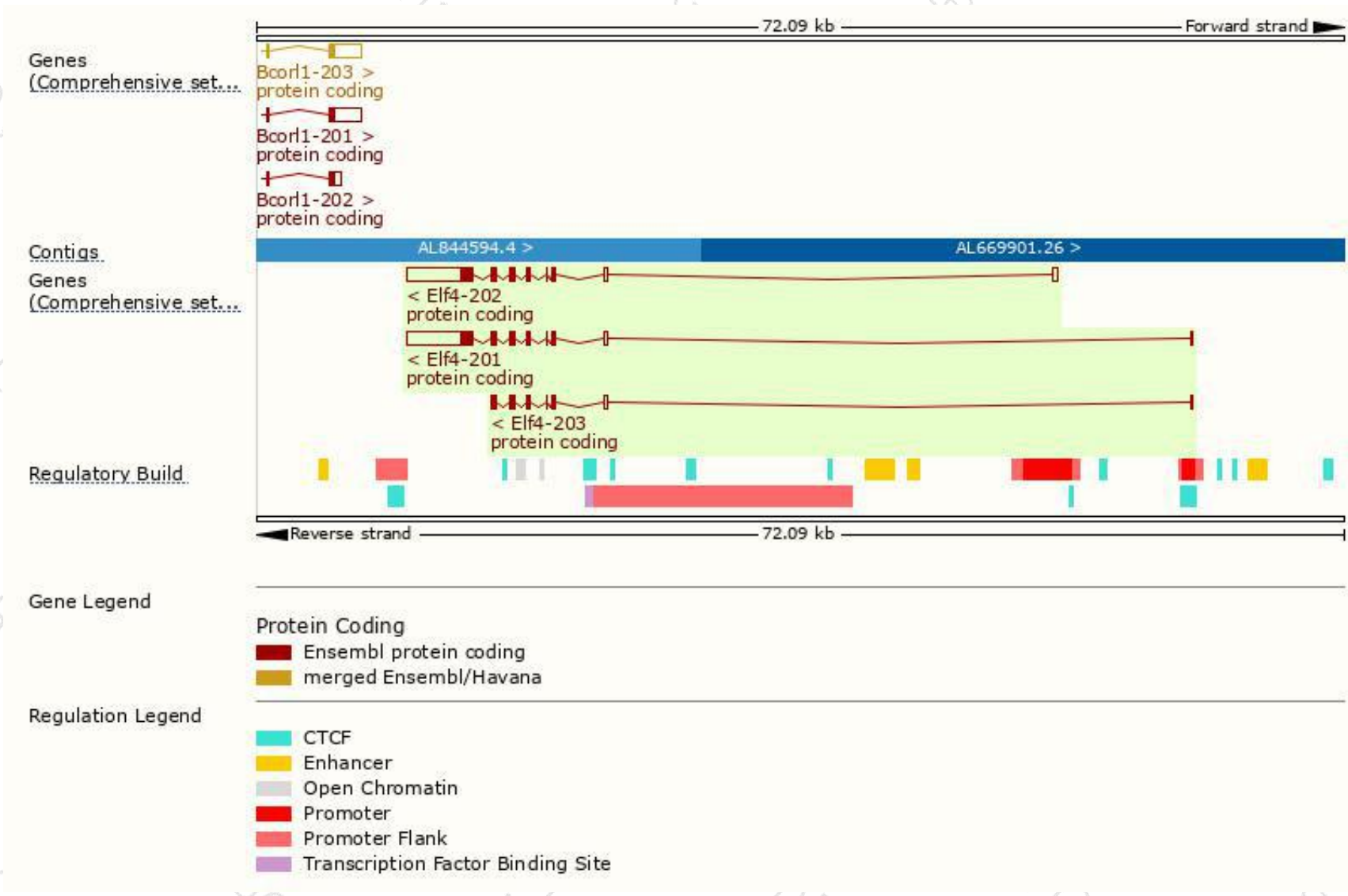
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Elf4-202	ENSMUST00000114958.7	6088	655aa	Protein coding	CCDS30108	Q9Z2U4	TSL:1 GENCODE basic APPRIS P1
Elf4-201	ENSMUST00000033429.8	5847	655aa	Protein coding	CCDS30108	Q9Z2U4	TSL:5 GENCODE basic APPRIS P1
Elf4-203	ENSMUST00000140486.1	1438	391aa	Protein coding	-	Q3U1U8	CDS 3' incomplete TSL:1

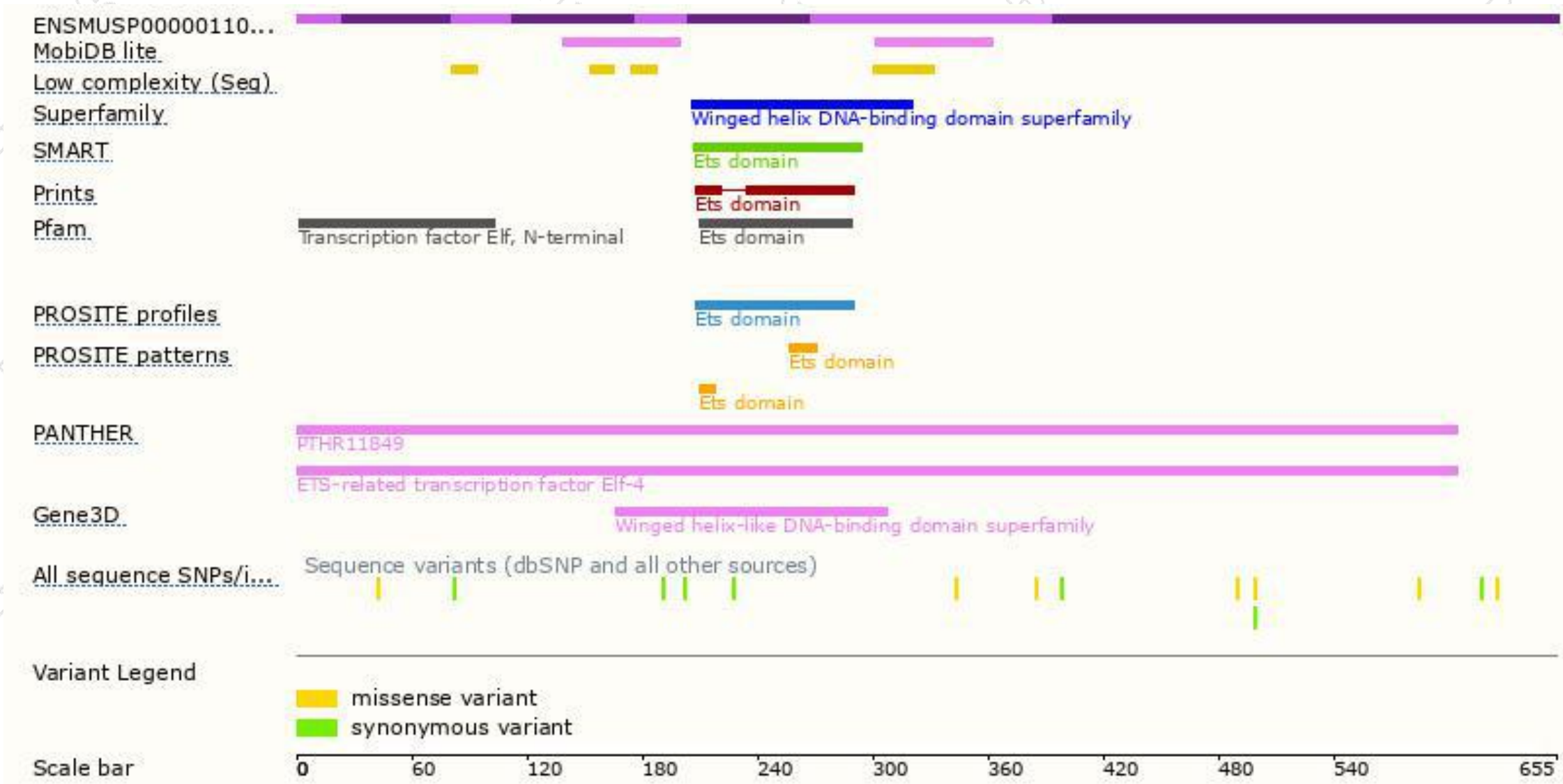
The strategy is based on the design of *Elf4-201* transcript,The transcription is shown below



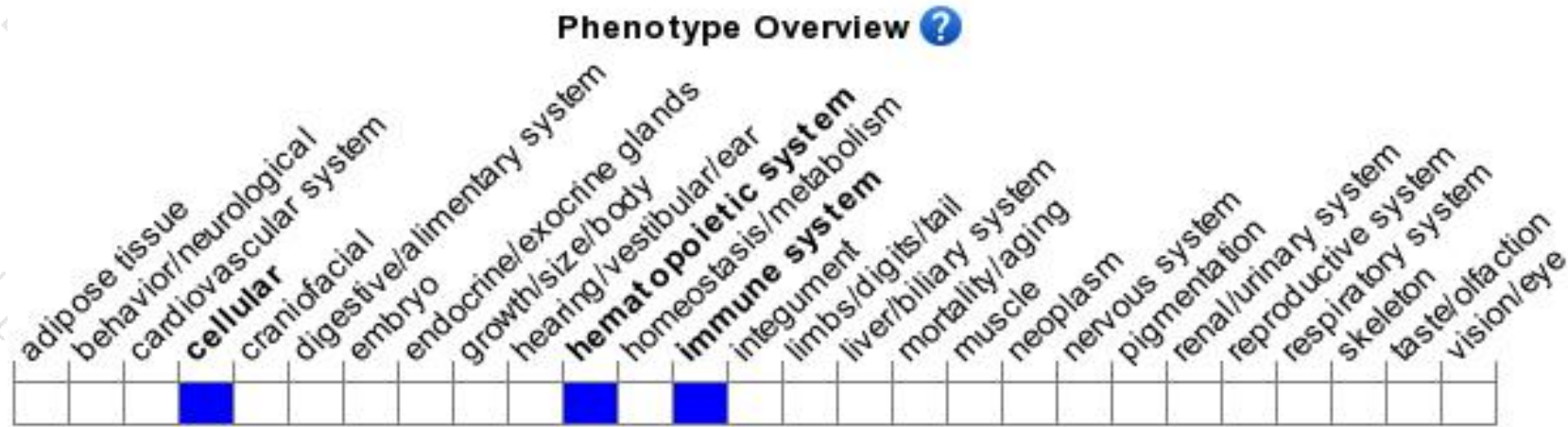
Genomic location distribution



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 have hematopoietic cells with impaired proliferative properties. Lymphocyte development and function is altered, particularly with respect to NK cells and NK-T cells.

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

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