

Cd300lb Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Cd300lb

Project type

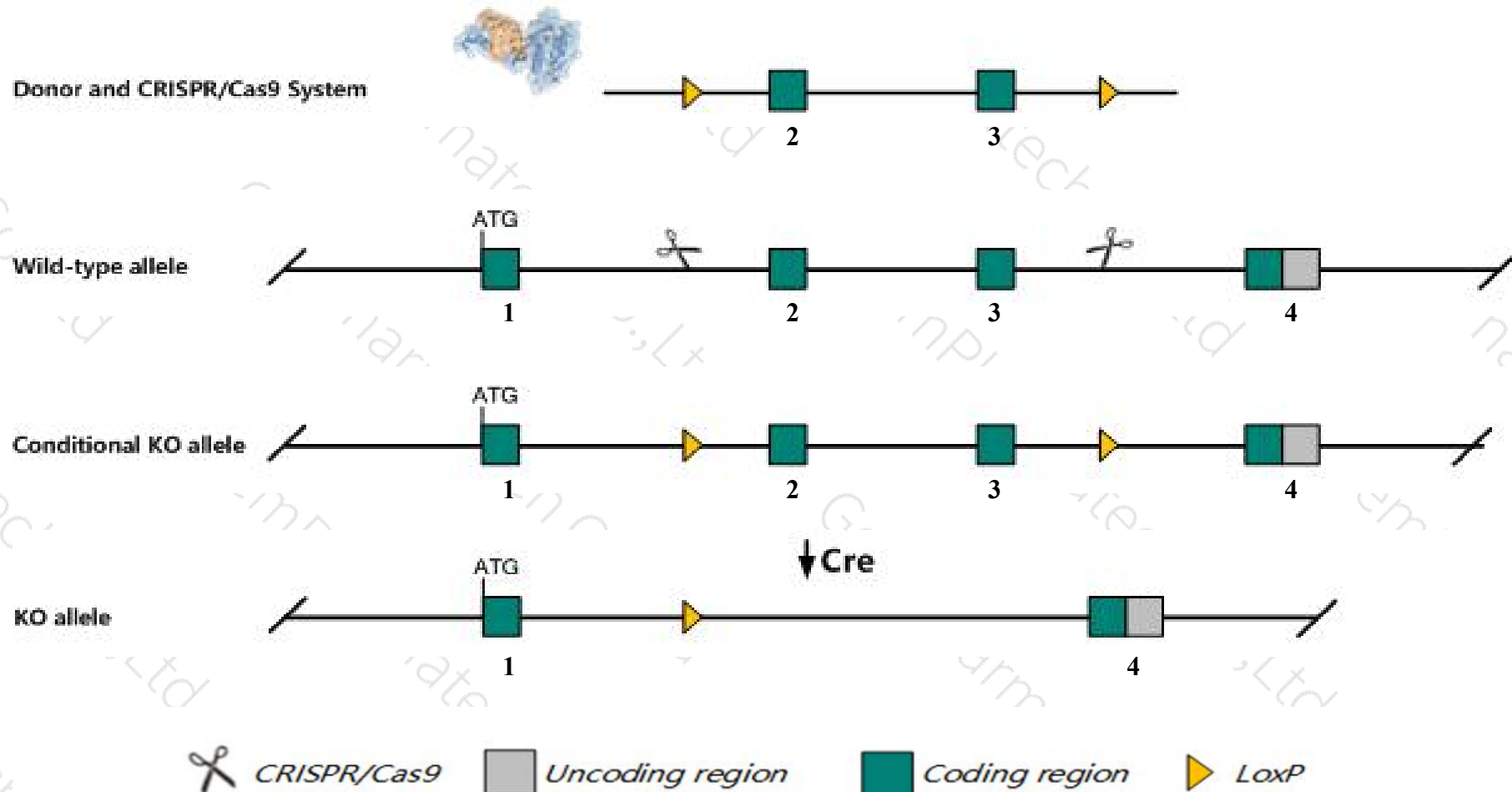
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cd300lb* gene. The schematic diagram is as follows:



Technical routes

- The *Cd300lb* gene has 3 transcripts. According to the structure of *Cd300lb* gene, exon2-exon3 of *Cd300lb-201* (ENSMUST00000106581.4) transcript is recommended as the knockout region. The region contains 421bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cd300lb* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- According to the existing MGI data, Mice homozygous for a null mutation do not display any gross abnormalities and are protected from ischemia reperfusion induced renal injury.
- The *Cd300lb* gene is located on the Chr11. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Cd300lb CD300 molecule like family member B [Mus musculus (house mouse)]

Gene ID: 217304, updated on 1-Mar-2019

Summary



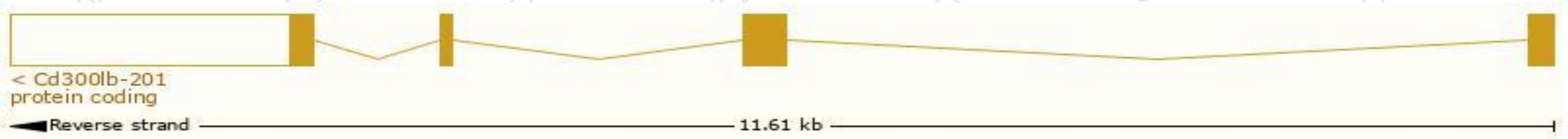
Official Symbol	Cd300lb provided by MGI
Official Full Name	CD300 molecule like family member B provided by MGI
Primary source	MGI:MGI:2685099
See related	Ensembl:ENSMUSG00000063193
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CLM-7, Clm7, Gm253, LMIR5
Expression	Broad expression in subcutaneous fat pad adult (RPKM 1.9), spleen adult (RPKM 1.9) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

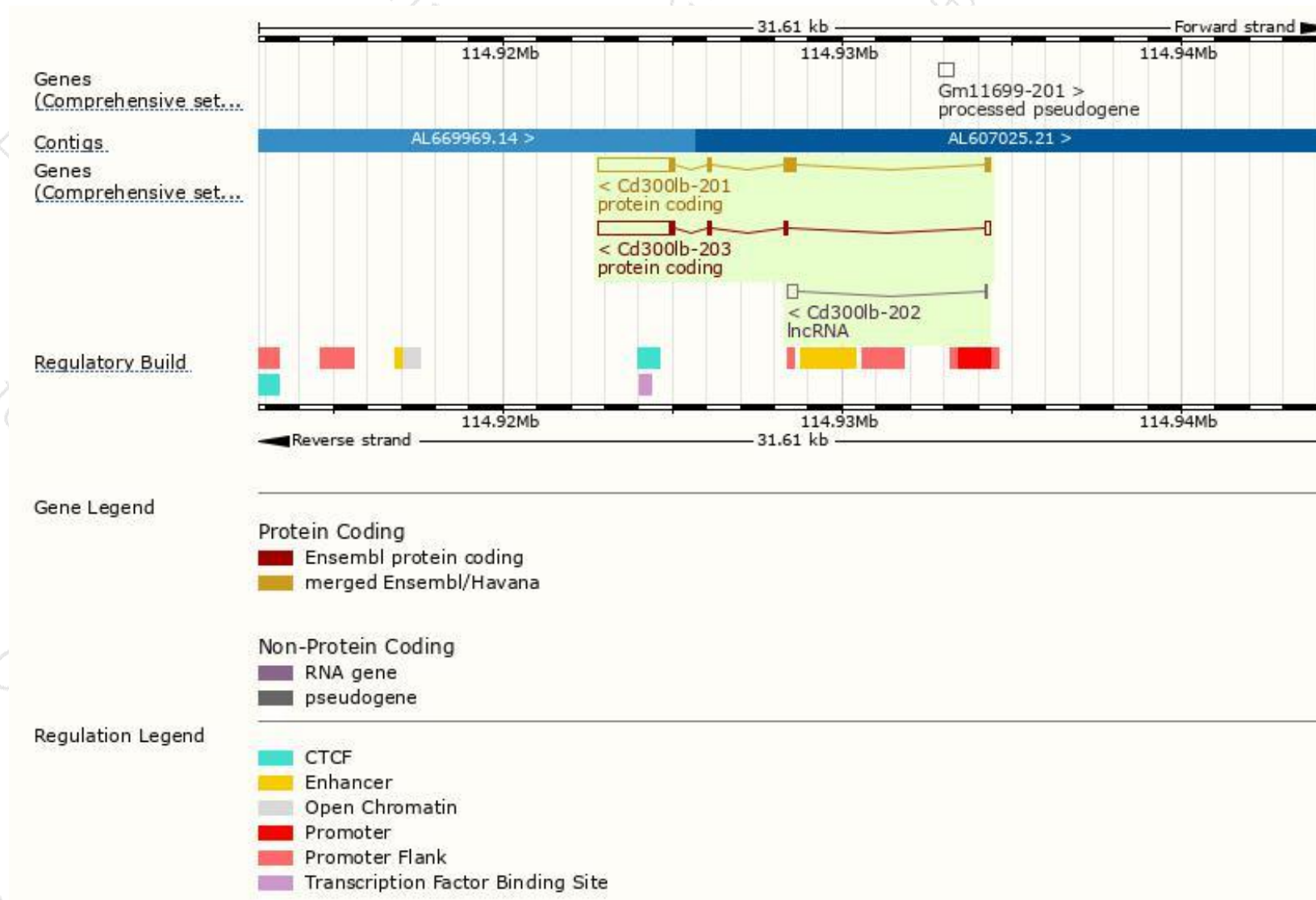
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cd300lb-201	ENSMUST00000106581.4	2880	255aa	Protein coding	CCDS25614	A0A0R3P9D2	TSL:1 GENCODE basic APPRIS P1
Cd300lb-203	ENSMUST00000149663.3	2641	119aa	Protein coding	CCDS83924	Q3TEQ8	TSL:1 GENCODE basic
Cd300lb-202	ENSMUST00000126655.1	353	No protein	lncRNA	-	-	TSL:3

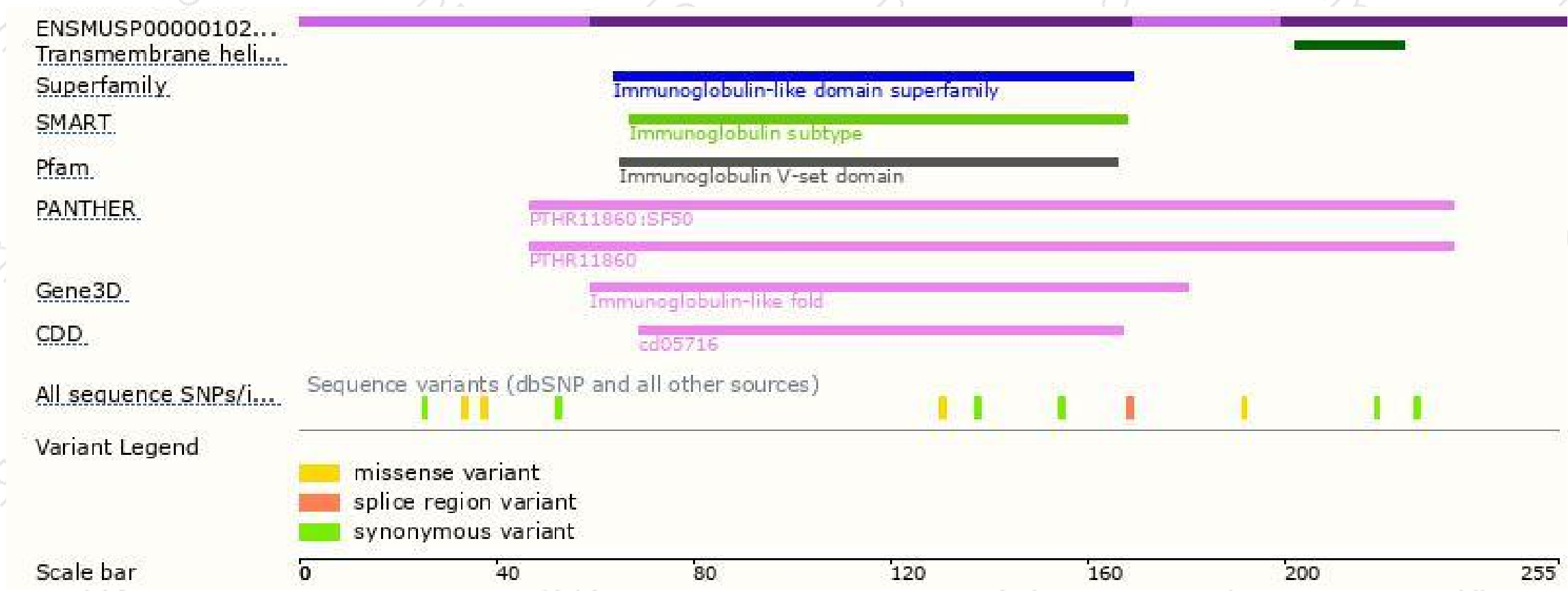
The strategy is based on the design of *Cd300lb-201* transcript,The transcription is shown below



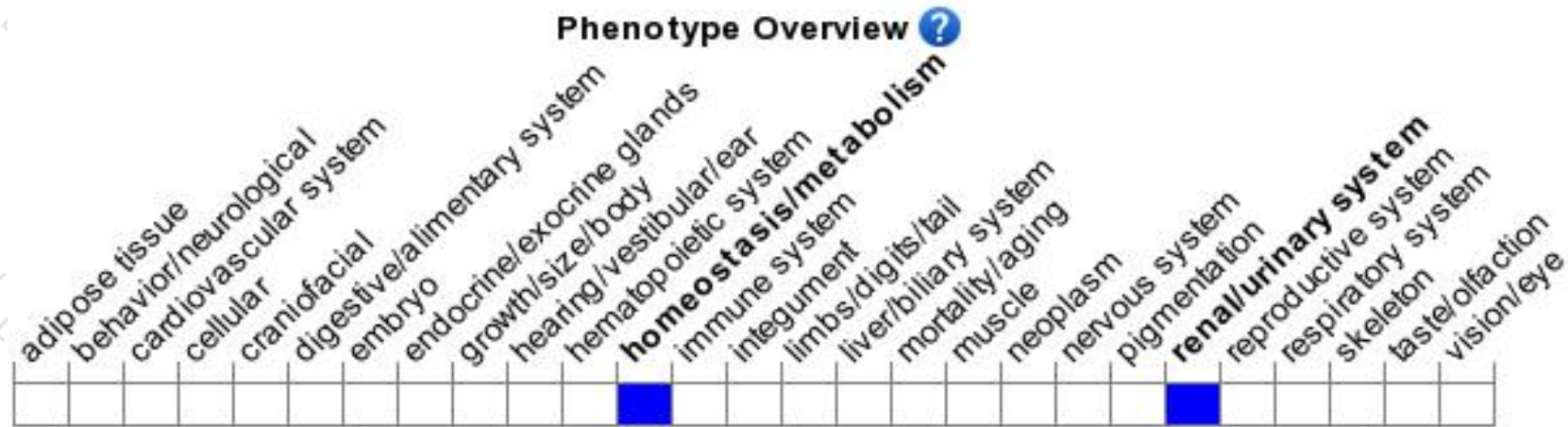
Genomic location distribution



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 a null mutation do not display any gross abnormalities and are protected from ischemia reperfusion induced renal injury.

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

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