

Adgrg3 Cas9-CKO Strategy

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Design Date: 2019-8-5

Project Overview

Project Name

Adgrg3

Project type

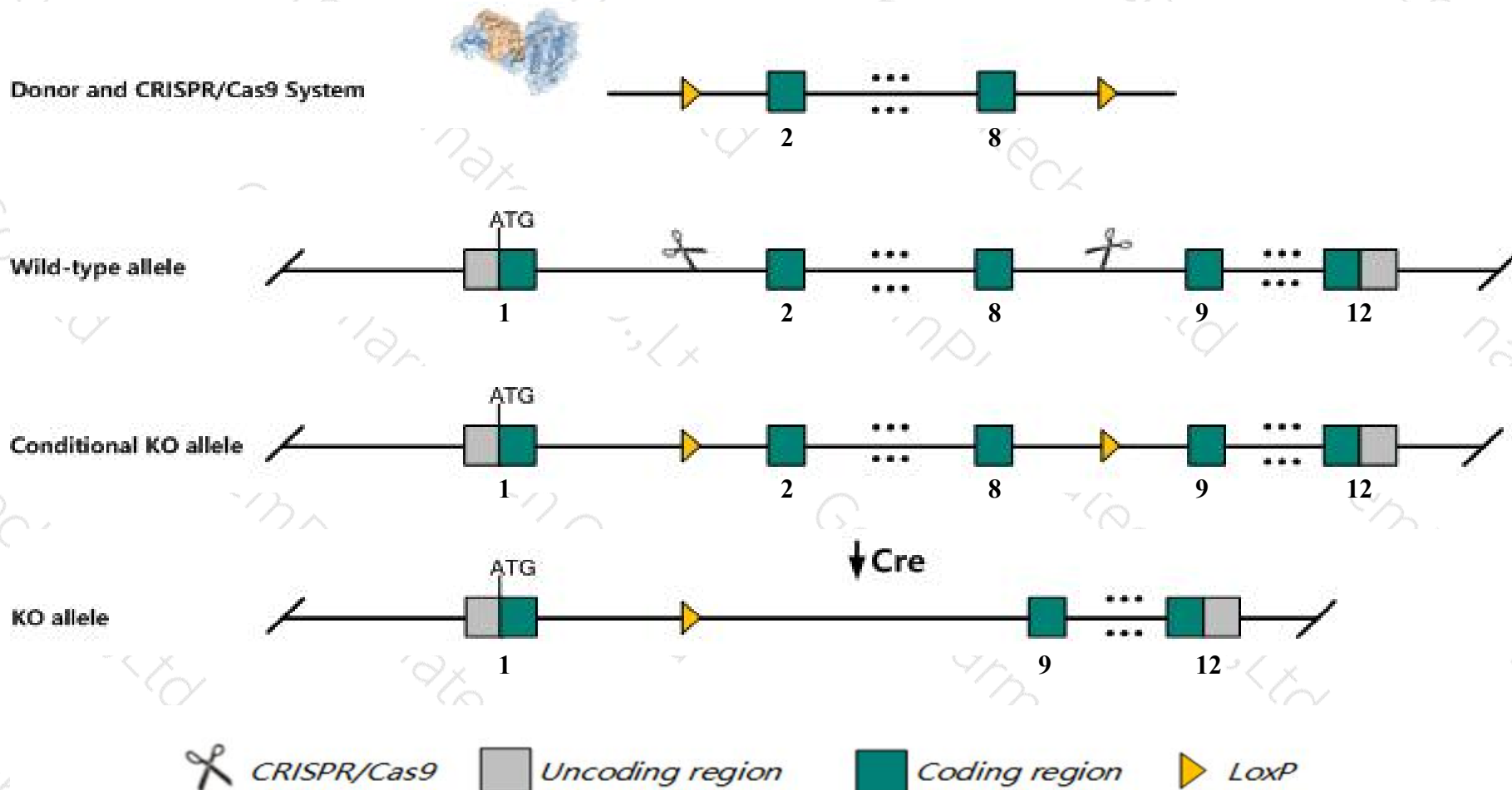
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adgrg3* gene. The schematic diagram is as follows:



- The *Adgrg3* gene has 6 transcripts. According to the structure of *Adgrg3* gene, exon2-exon8 of *Adgrg3-201* (ENSMUST00000051259.9) transcript is recommended as the knockout region. The region contains 814bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Adgrg3* 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, Homozygous null mice display normal B and T cell development.
- The knockout region is near to the N-terminal of *Gm45757* gene, this strategy may influence the regulatory function of the N-terminal of *Gm45757* gene.
- The *Adgrg3* gene is located on the Chr8. 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)

Adgrg3 adhesion G protein-coupled receptor G3 [Mus musculus (house mouse)]

Gene ID: 54672, updated on 31-Jan-2019

Summary



Official Symbol	Adgrg3 provided by MGI
Official Full Name	adhesion G protein-coupled receptor G3 provided by MGI
Primary source	MGI:MGI:1859670
See related	Ensembl:ENSMUSG00000060470
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	A030001G24Rik, AW214383, Gpr97, Pb1, Pb99
Expression	Broad expression in placenta adult (RPKM 6.7), liver E18 (RPKM 4.1) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

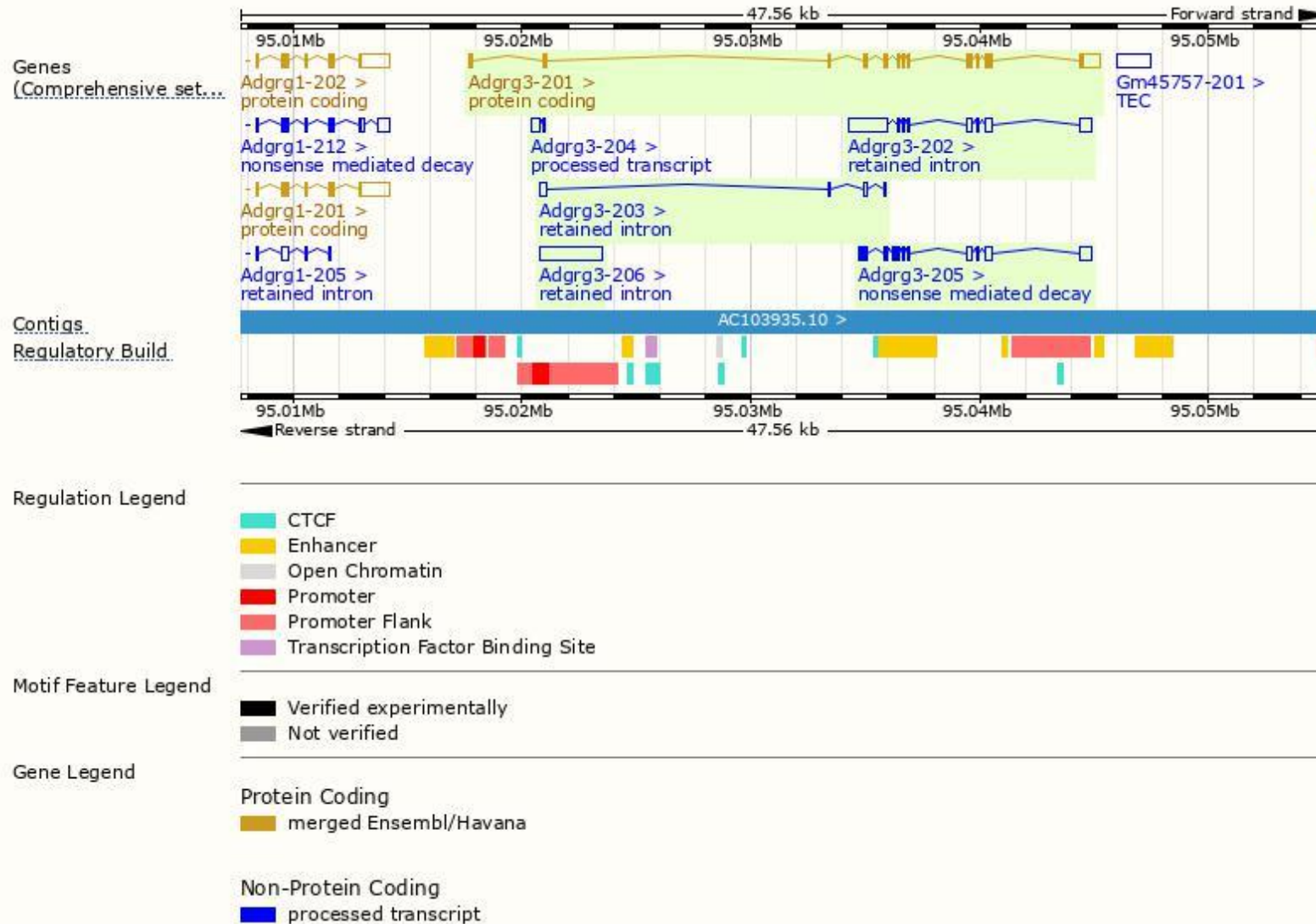
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgrg3-201	ENSMUST00000051259.9	2439	542aa	Protein coding	CCDS22554	Q8R0T6	TSL:1 GENCODE basic APPRIS P1
Adgrg3-205	ENSMUST00000212570.1	1993	213aa	Nonsense mediated decay	-	A0A1D5RLS0	CDS 5' incomplete TSL:1
Adgrg3-204	ENSMUST00000212558.1	424	No protein	Processed transcript	-	-	TSL:3
Adgrg3-202	ENSMUST00000211974.1	3034	No protein	Retained intron	-	-	TSL:1
Adgrg3-206	ENSMUST00000212951.1	2719	No protein	Retained intron	-	-	TSL:NA
Adgrg3-203	ENSMUST00000211994.1	660	No protein	Retained intron	-	-	TSL:5

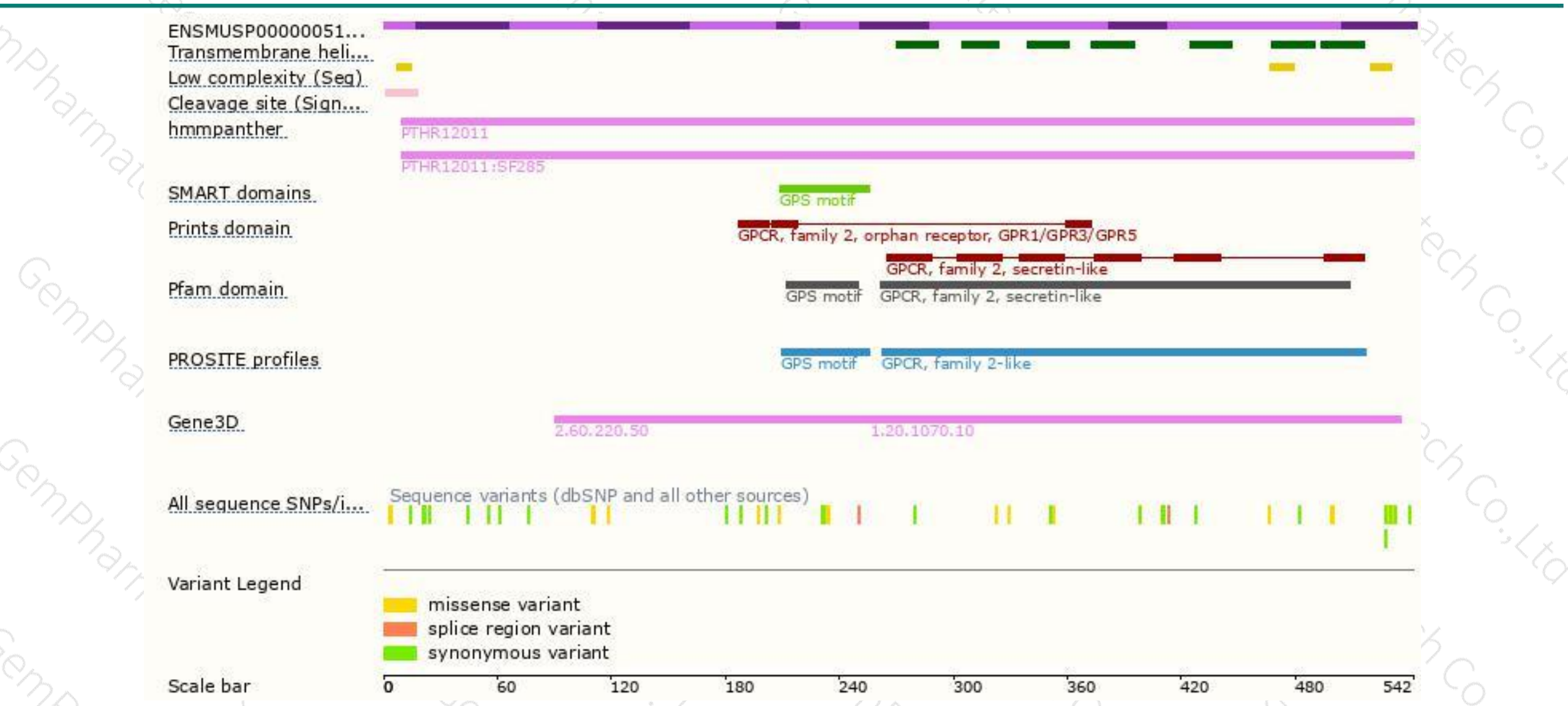
The strategy is based on the design of *Adgrg3-201* transcript,The transcription is shown below



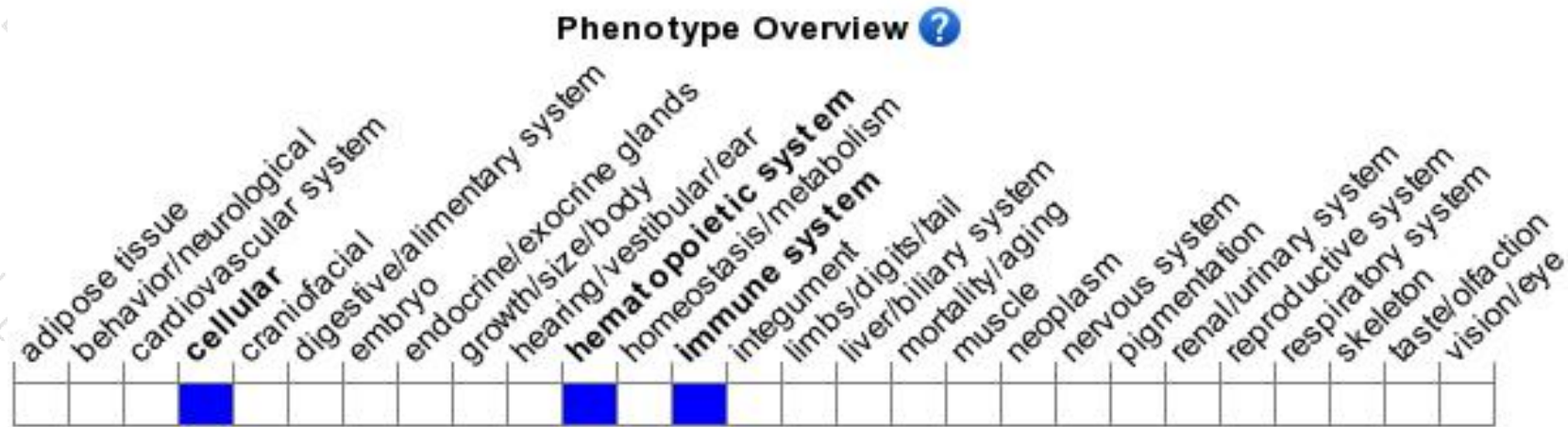
Genomic location distribution



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 null mice display normal B and T cell development.

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

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