

Pgf Cas9-KO Strategy

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Project Overview

Project Name

Pgf

Project type

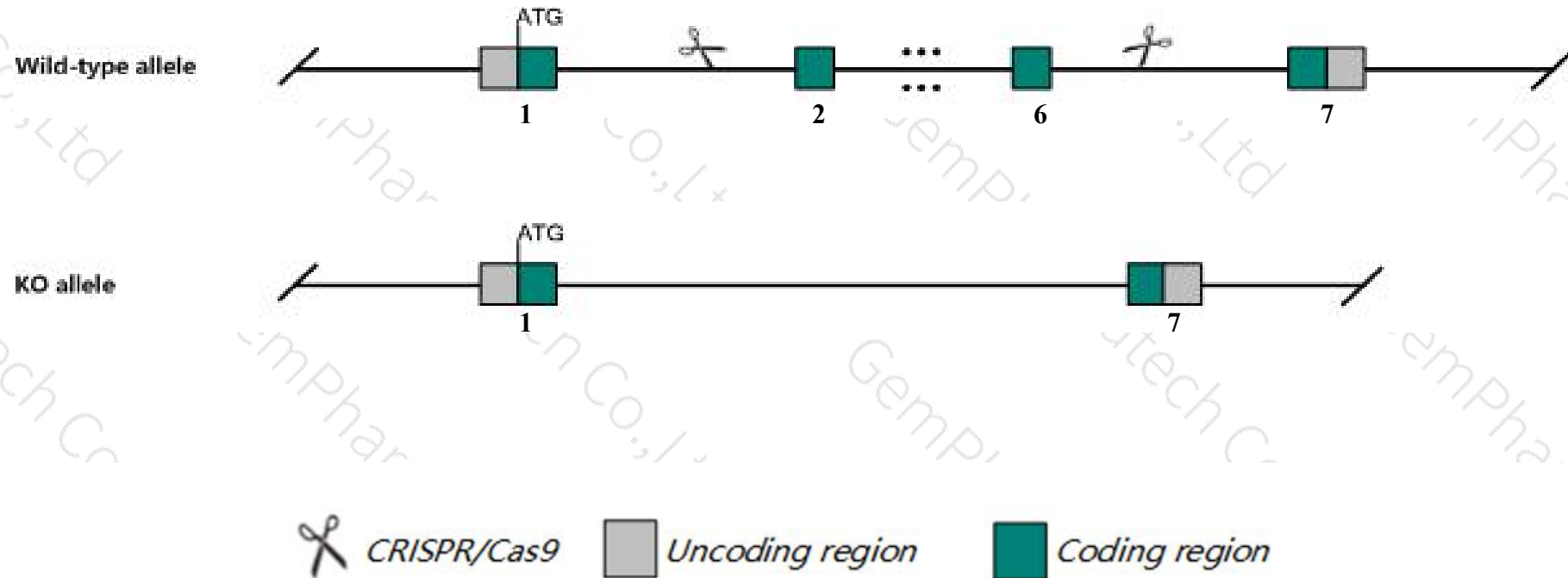
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Pgf* gene has 4 transcripts. According to the structure of *Pgf* gene, exon2-exon6 of *Pgf-201* (ENSMUST00000004913.6) transcript is recommended as the knockout region. The region contains 407bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pgf* gene. The brief process is as follows: CRISPR/Cas9 system will

- According to the existing MGI data, Mice homozygous for disruptions in this gene display subtle abnormalities related to reduced angiogenesis. Body weight at birth is reduced and body fat is significantly reduced.
- The *Pgf* gene is located on the Chr12. 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)

Pgf placental growth factor [*Mus musculus* (house mouse)]

Gene ID: 18654, updated on 16-Sep-2019

Summary

- Official Symbol

Pgf provided by [MGI](#)
- Official Full Name

placental growth factor provided by [MGI](#)
- Primary source

[MGI:MGI:105095](#)
- See related

[Ensembl:ENSMUSG000000004791](#)
- 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

PIGF; Plgf; AI854365
- Expression

Broad expression in genital fat pad adult (RPKM 7.3), placenta adult (RPKM 3.2) and 15 other tissues [See more](#)
- Orthologs

[human](#) [all](#)

Genomic context

Location:

12 D1; 12 39.58 cM

See Pgf in [Genome Data Viewer](#)

Exon count:

8

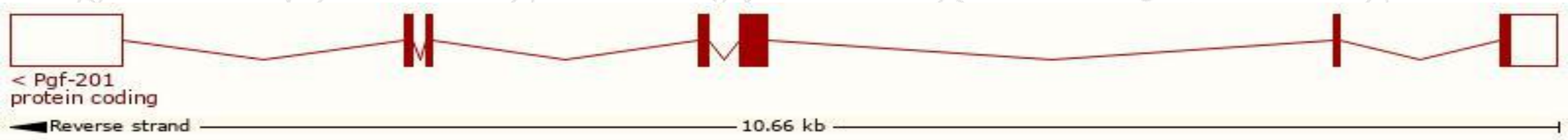
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	12	NC_000078.6 (85166637..85177785, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	12	NC_000078.5 (86507591..86518235, complement)

Transcript information (Ensembl)

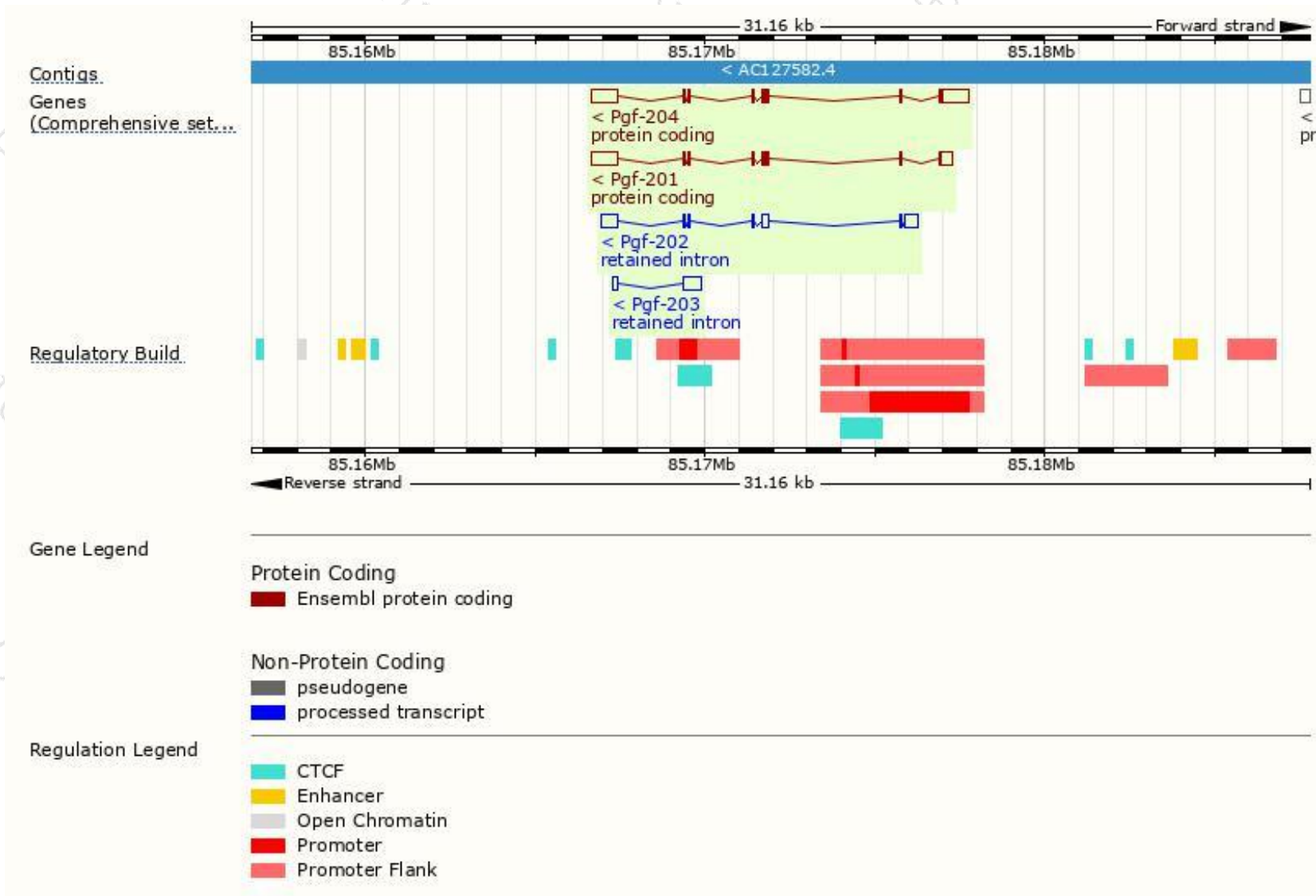
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pgf-201	ENSMUST00000004913.6	1582	158aa	Protein coding	CCDS49115	P49764 Q544A5	TSL:1 GENCODE basic APPRIS P2
Pgf-204	ENSMUST00000223220.1	2080	162aa	Protein coding	-	A0A1Y7VIW3	TSL:1 GENCODE basic APPRIS ALT2
Pgf-202	ENSMUST00000220985.1	1226	No protein	Retained intron	-	-	TSL:3
Pgf-203	ENSMUST00000222850.1	688	No protein	Retained intron	-	-	TSL:3

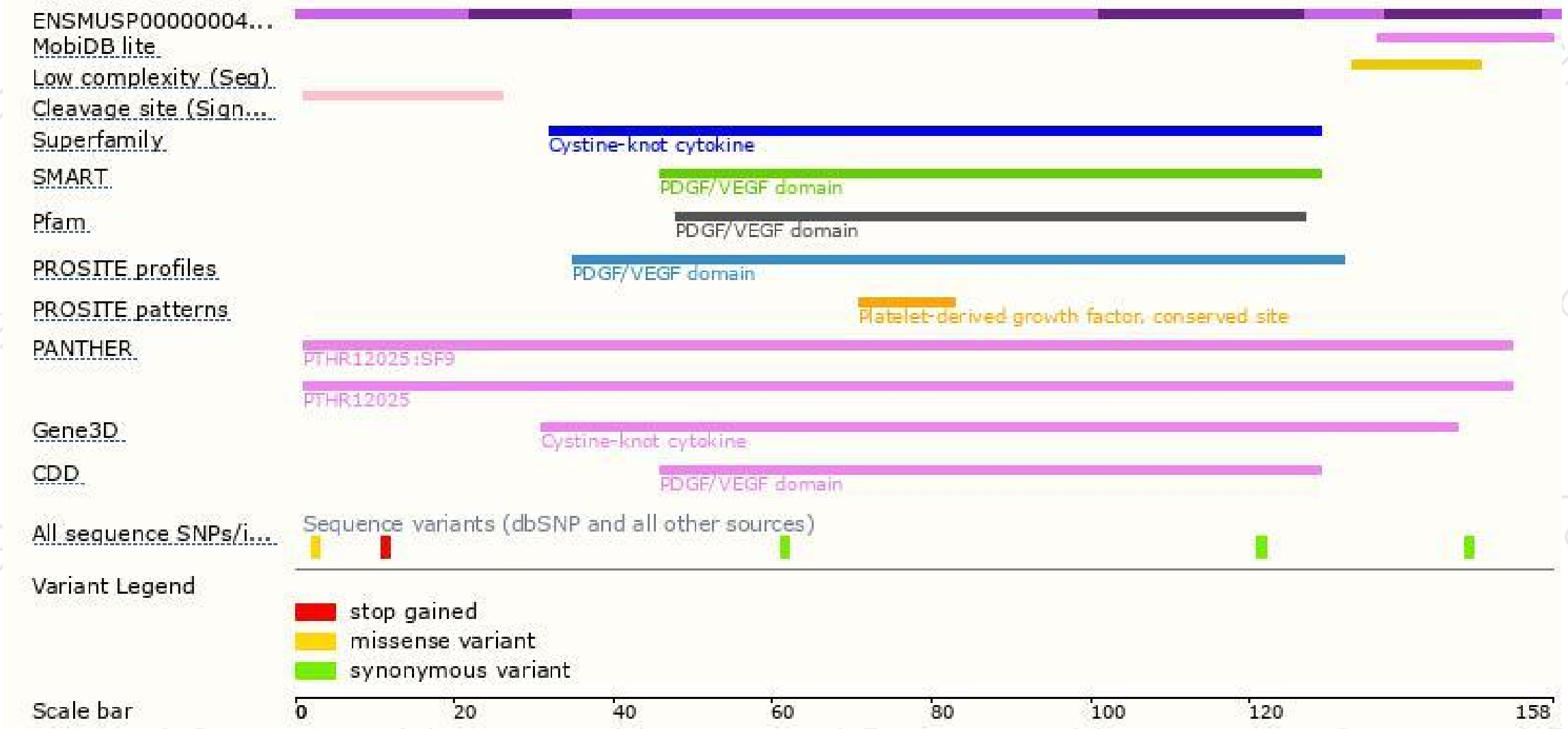
The strategy is based on the design of *Pgf-201* transcript,The transcription is shown below



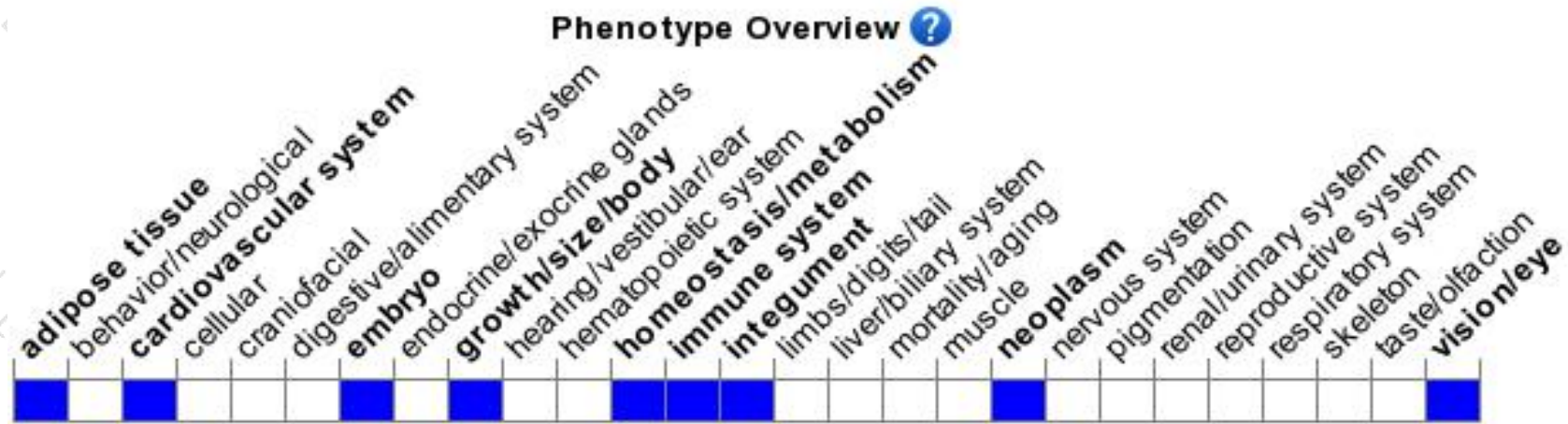
Genomic location distribution



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/>).

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

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