Creb3l1 Cas9-KO Strategy

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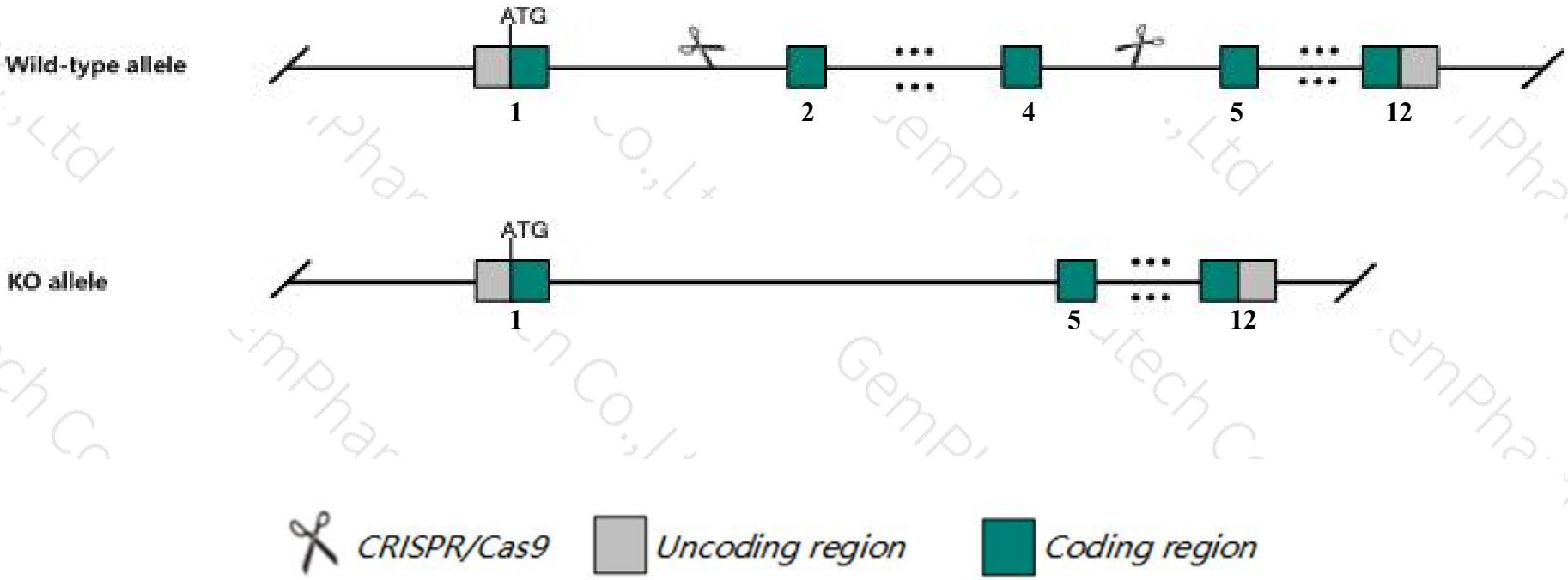
Project Overview

Project Name	***Creb3l1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Creb3l1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Creb3l1* gene has 1 transcript. According to the structure of *Creb3l1* gene, exon2-exon4 of *Creb3l1-201* (ENSMUST00000028663.4) transcript is recommended as the knockout region.The region contains 493bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Creb3l1* gene. The brief process is as follows: CRISPR/Cas9 syste

Notice

- According to the existing MGI data,Mice homozygous for a knock-out allele exhibit postnatal growth retardation, fragile skeleton, and decreased bone density, cortical and trabecular thickness, and osteoblast maturation.

- The *Creb3l1* gene is located on the Chr2. 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）

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Creb3l1 cAMP responsive element binding protein 3-like 1 [*Mus musculus* (house mouse)]

Gene ID: 26427, updated on 12-Aug-2019

Summary

Official Symbol	Creb3l1 provided by MGI
Official Full Name	cAMP responsive element binding protein 3-like 1 provided by MGI
Primary source	MGI:MGI:1347062
See related	Ensembl:ENSMUSG00000027230
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	Oasis
Expression	Biased expression in colon adult (RPKM 61.2), stomach adult (RPKM 22.6) and 12 other tissues See more
Orthologs	human all

Genomic context

Location: 2; 2 E1

See Creb3l1 in Genome Data Viewer

Exon count: 12

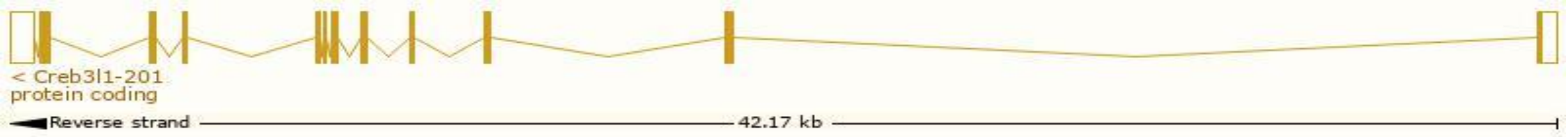
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	2	NC_000068.7 (91982328..92024170, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	2	NC_000068.6 (91822485..91864327, complement)

Transcript information（Ensembl）

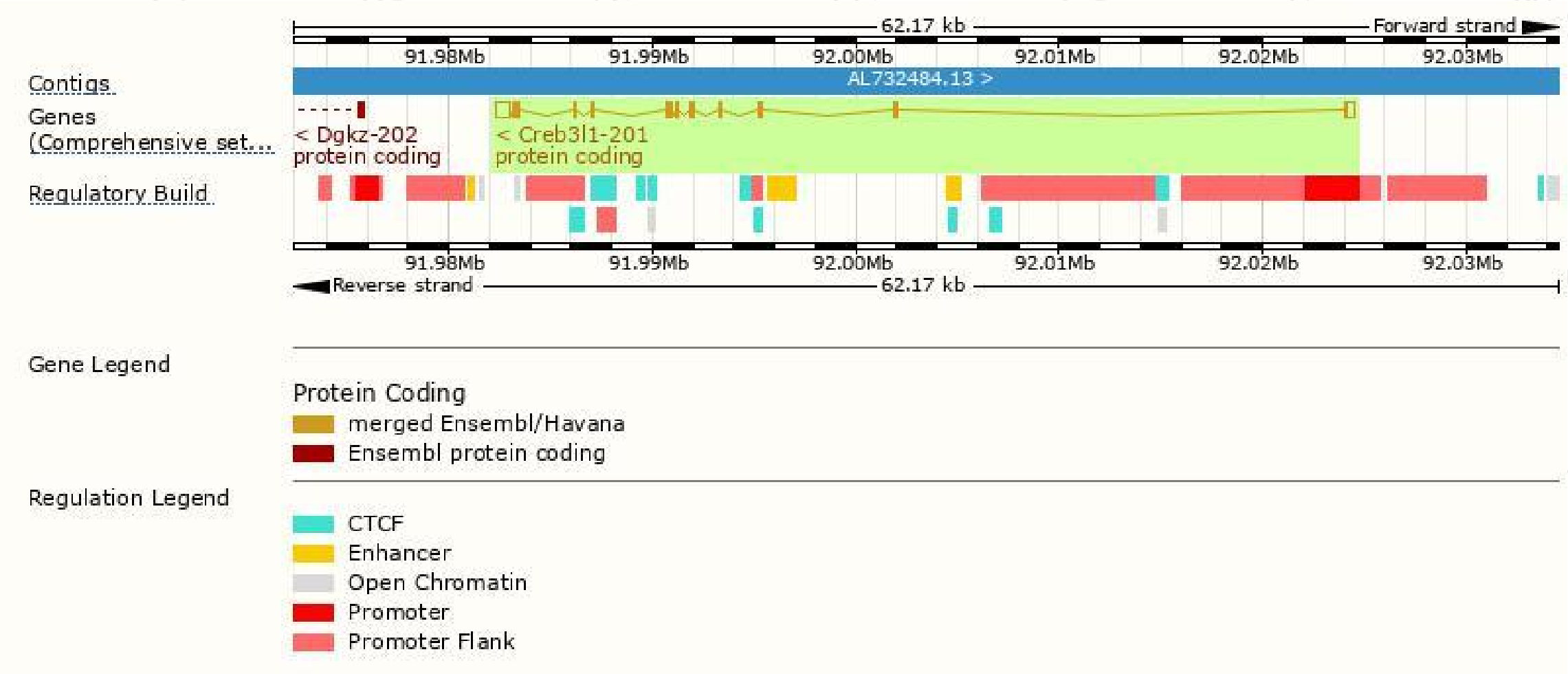
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Creb3l1-201	ENSMUST00000028663.4	2603	520aa	Protein coding	CCDS38181	A0A0R4J082	TSL:1 GENCODE basic APPRIS P1

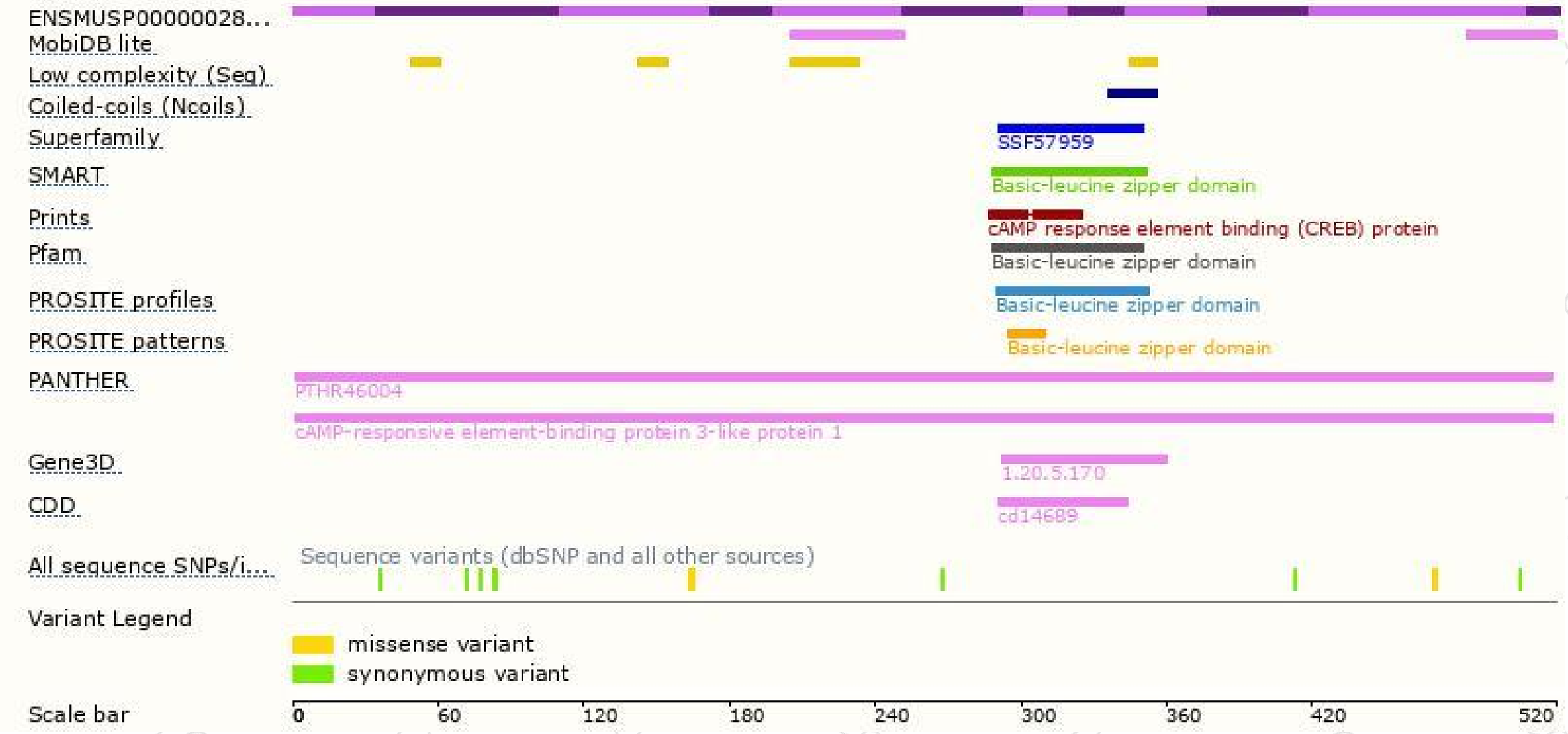
The strategy is based on the design of *Creb3l1-201* transcript,The transcription is shown below



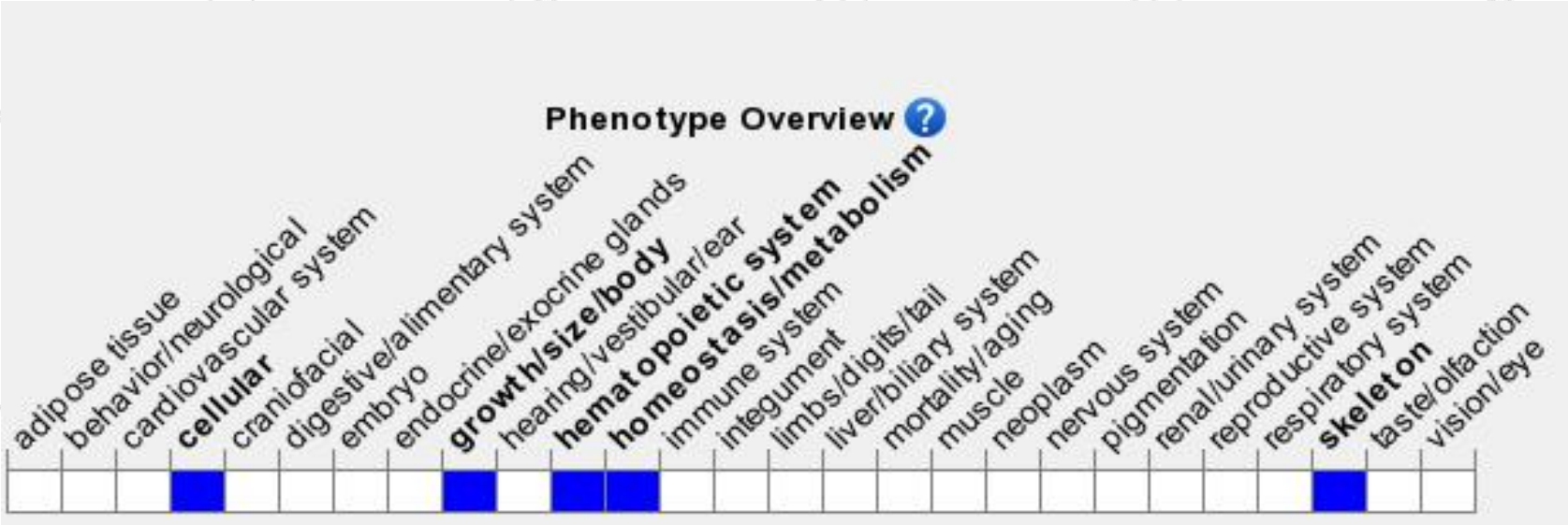
Genomic location distribution



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 knock-out allele exhibit postnatal growth retardation, fragile skeleton, and decreased bone density, cortical and trabecular thickness, and osteoblast maturation.

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

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