Ccn3 Cas9-KO Strategy

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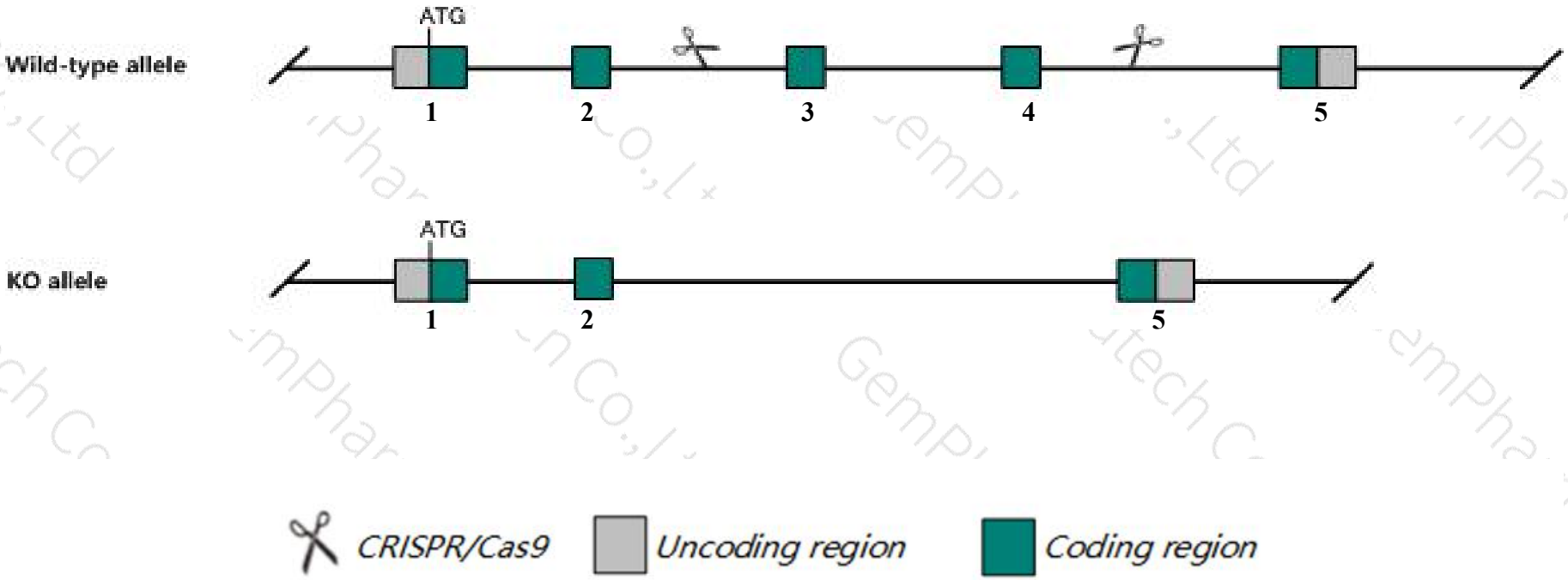
Project Overview

Project Name	***Ccn3***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccn3* gene. The schematic diagram is as follows:



Technical routes

➢ The *Ccn3* gene has 1 transcript. According to the structure of *Ccn3* gene, exon3-exon4 of *Ccn3-201* (ENSMUST00000050027.8) transcript is recommended as the knockout region.The region contains 476bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Ccn3* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Heterozygotes and homozygotes for a null mutation exhibit abnormal skeletal and cardiac development, muscle atrophy and cataracts. Mice homozygous for another knock-out allele exhibit minor bone structure and physiology defects.

- The *Ccn3* gene is located on the Chr15. 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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Ccn3 cellular communication network factor 3 [Mus musculus (house mouse)]

Gene ID: 18133, updated on 5-Mar-2019

Summary

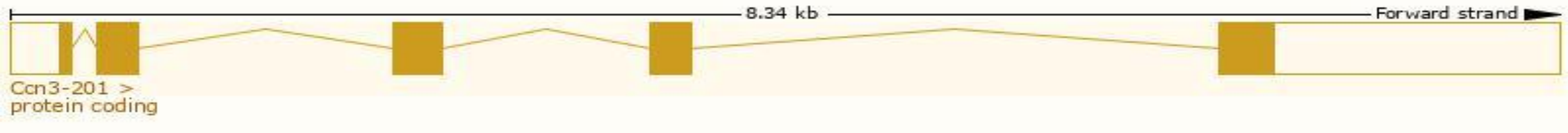
Official Symbol	Ccn3 provided by MGI
Official Full Name	cellular communication network factor 3 provided by MGI
Primary source	MGI:MGI:109185
See related	Ensembl:ENSMUSG00000037362
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C130088N23Rik, Nov
Expression	Biased expression in colon adult (RPKM 83.7), frontal lobe adult (RPKM 20.9) and 4 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

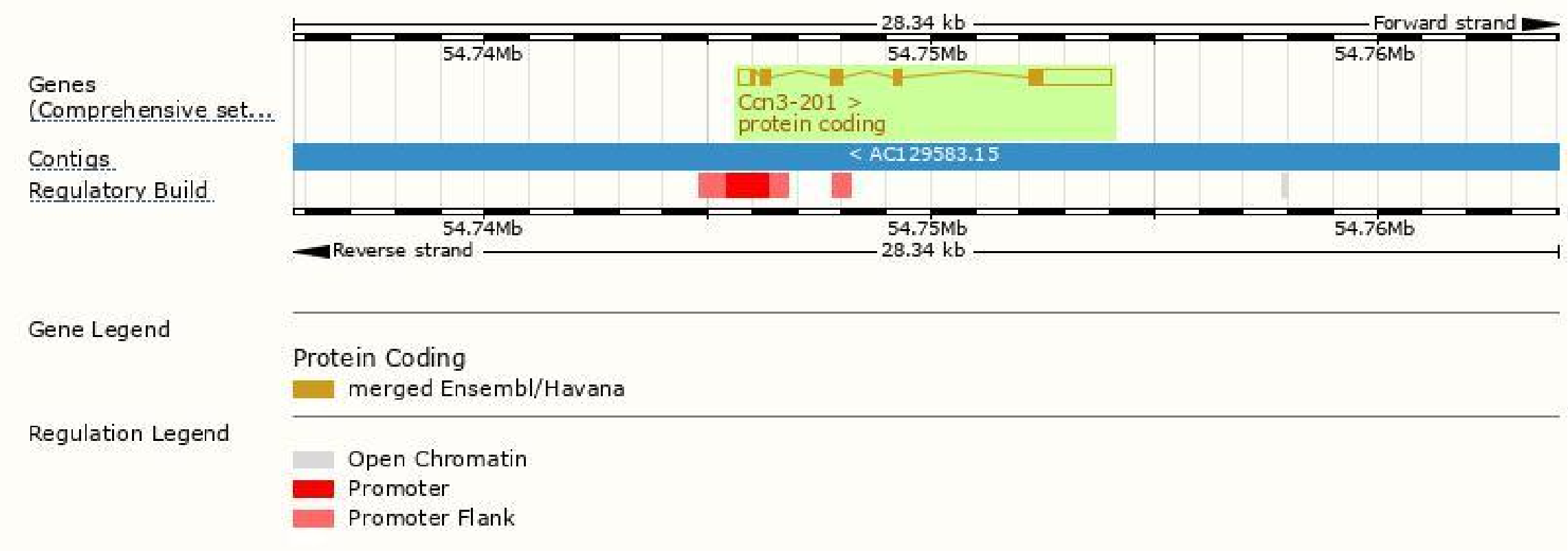
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ccn3-201	ENSMUST00000050027.8	2869	354aa	Protein coding	CCDS27471	Q64299	TSL:1 GENCODE basic APPRIS P1

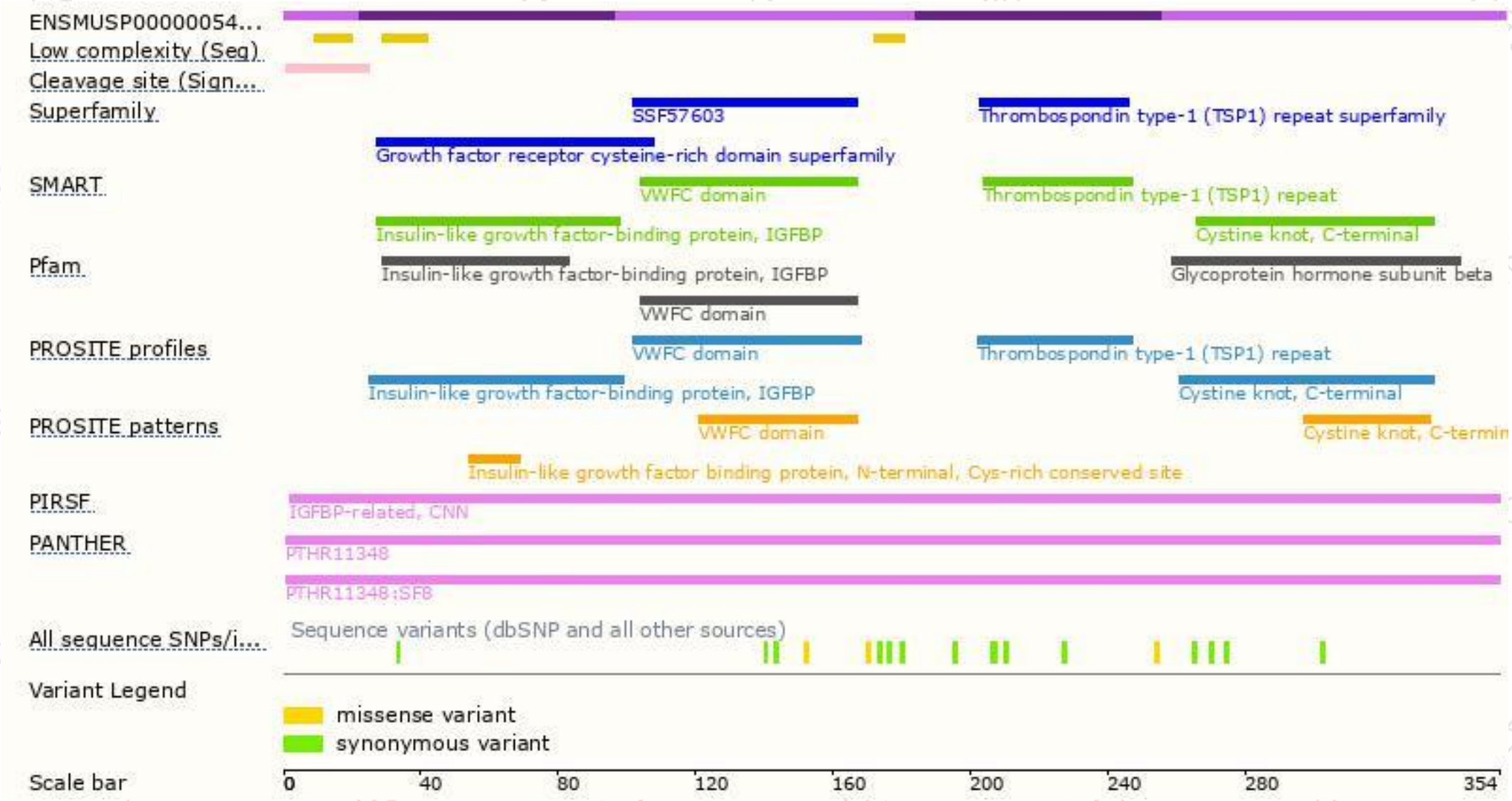
The strategy is based on the design of *Ccn3-201* transcript,The transcription is shown below



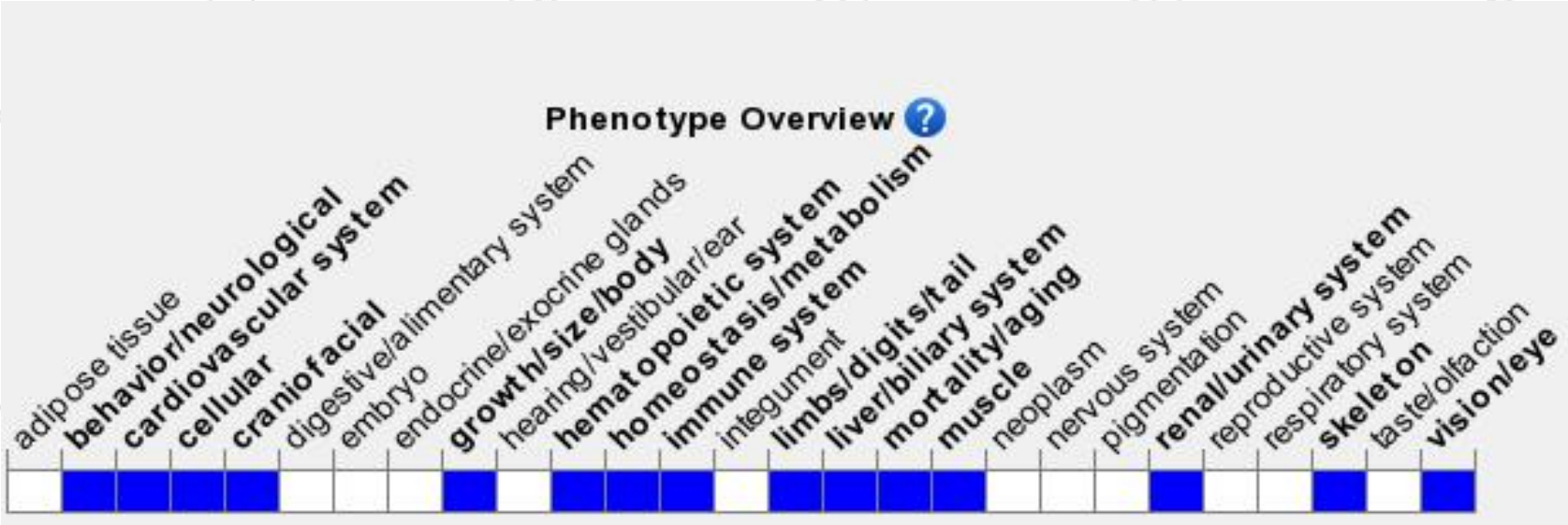
Genomic location distribution



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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