Poll Cas9-KO Strategy

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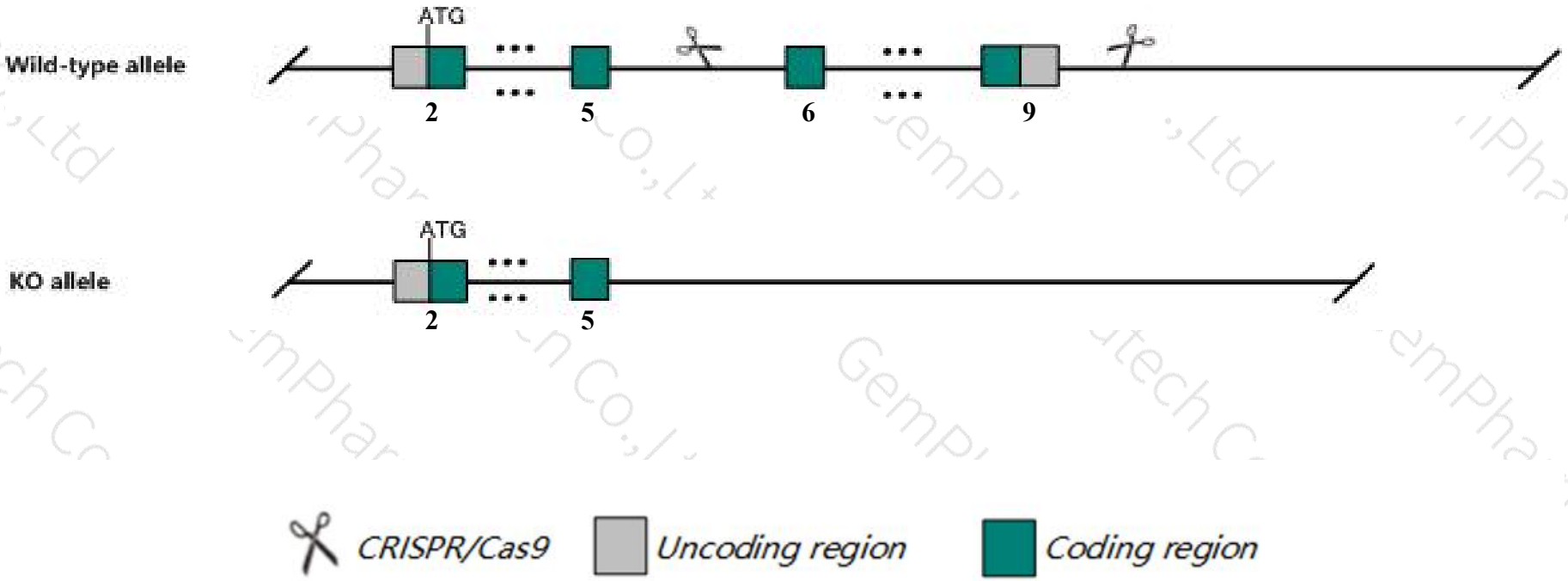
Project Overview

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

Knockout strategy

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



Technical routes

➢ The *Poll* gene has 1 transcript. According to the structure of *Poll* gene, exon6-exon9 of *Poll-201* (ENSMUST00000026239.6) transcript is recommended as the knockout region.The region contains key coding sequence. Knock out the region will result in disruption of protein function.

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

Notice

➢ According to the existing MGI data,Mice homozygous for a knock-out allele exhibit defective heavy chain rearrangement. See also the Dpcd gene for mutations that affect both of these overlapping genes.

➢The KO region contains functional region of the *Gm17018* gene.Knockout the region may affect the function of *Gm17018* gene.

➢ The *Poll* gene is located on the Chr19. 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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Poll polymerase (DNA directed), lambda [Mus musculus (house mouse)]

Gene ID: 56626, updated on 31-Jan-2019

Summary

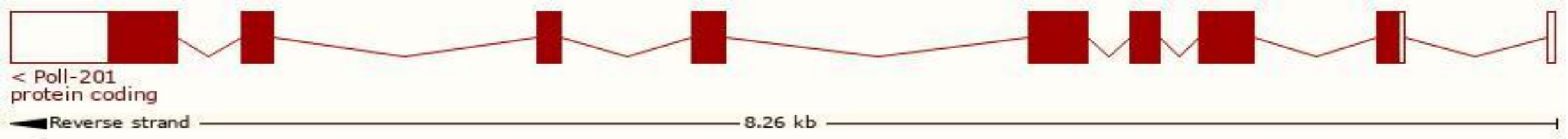
Official Symbol	Poll provided by MGI
Official Full Name	polymerase (DNA directed), lambda provided byMGI
Primary source	MGI:MGI:1889000
See related	Ensembl:ENSMUSG00000025218
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110003P06Rik, AV007317
Expression	Ubiquitous expression in testis adult (RPKM 24.9), ovary adult (RPKM 5.9) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

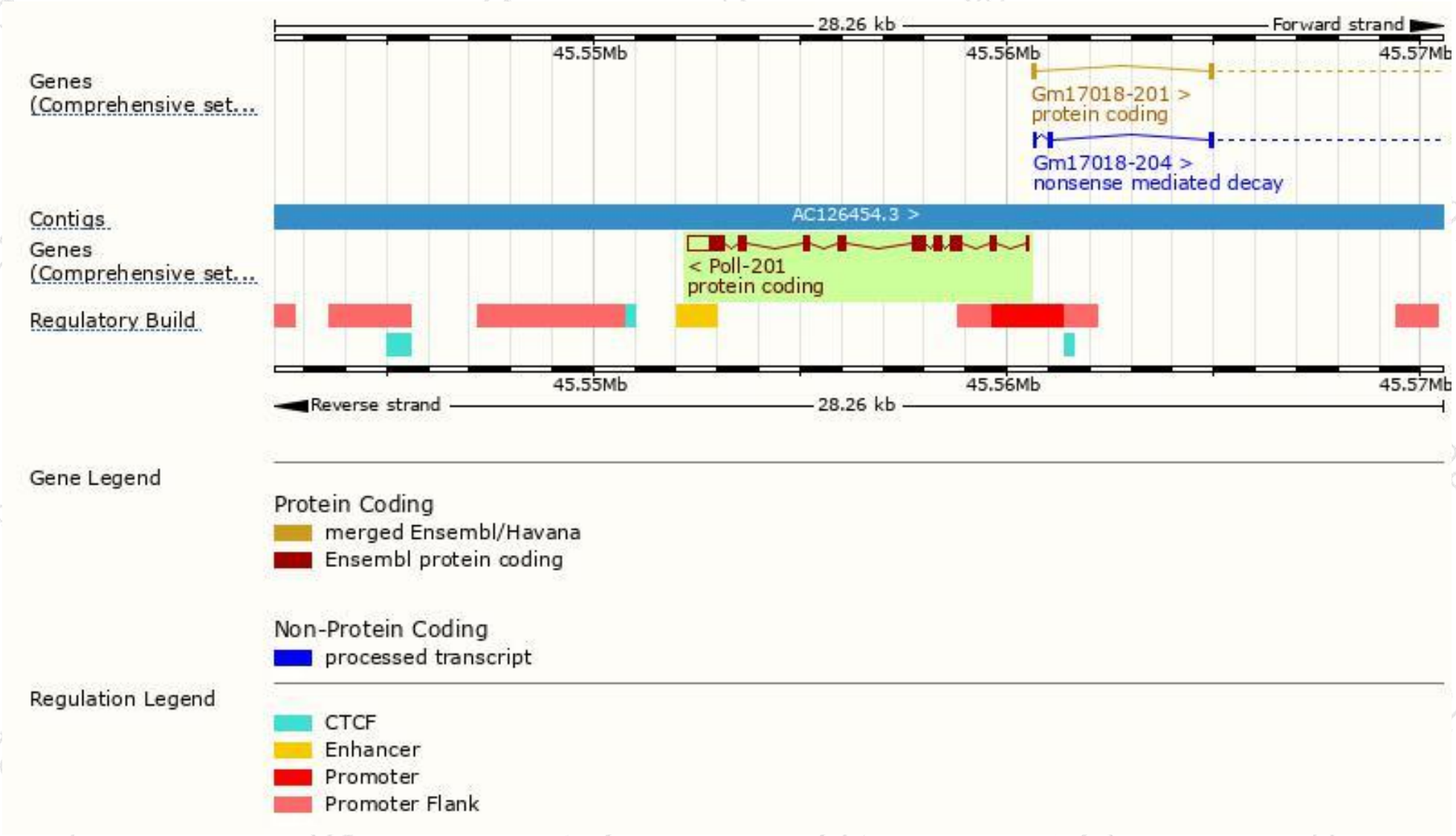
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Poll-201	ENSMUST00000026239.6	2324	573aa	Protein coding	CCDS29861	Q9QXE2	TSL:1 GENCODE basic APPRIS P1

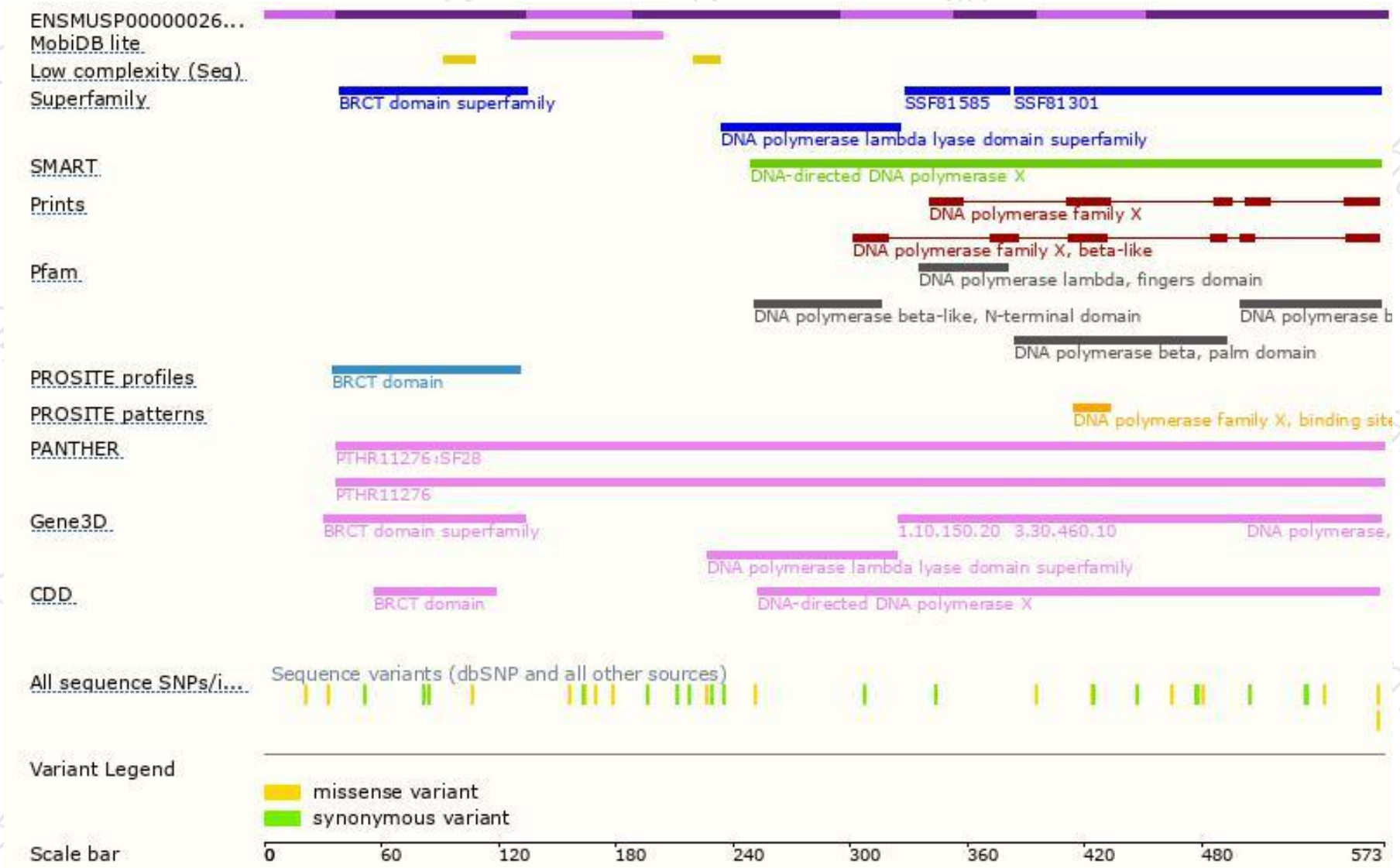
The strategy is based on the design of *Poll-201* transcript,The transcription is shown below



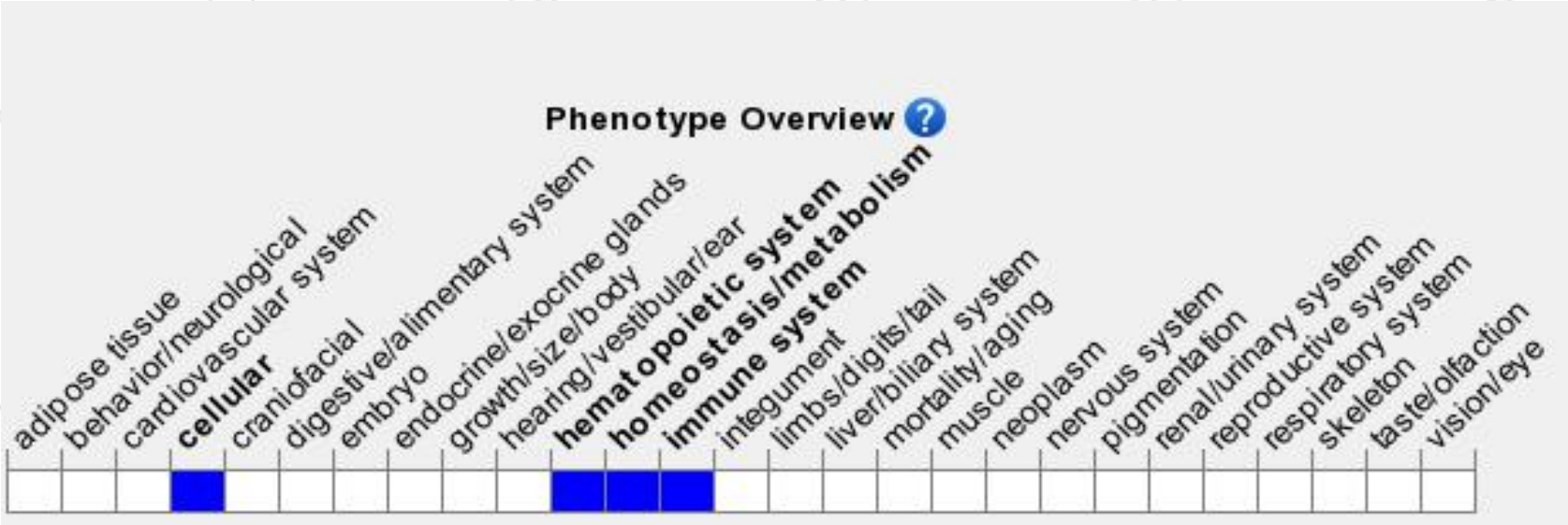
Genomic location distribution



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 defective heavy chain rearrangement. See also the Dpcd gene for mutations that affect both of these overlapping genes.

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

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