

*Rbm*x Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

***Rbm*x**

Project type

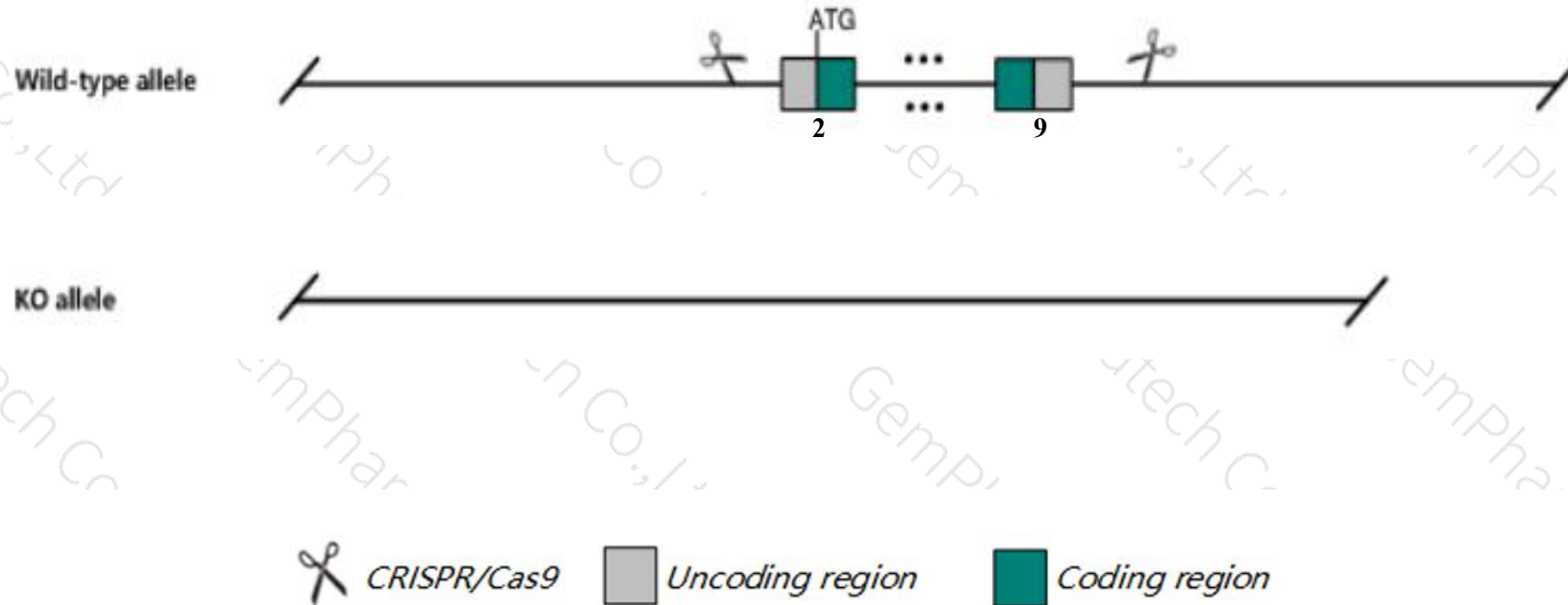
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Rbm*x gene has 6 transcripts. According to the structure of *Rbm*x gene, exon2-exon9 of *Rbm*x-202 (ENSMUST00000114726.7) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rbm*x gene. The brief process is as follows: CRISPR/Cas9 system

- The *RbmX* gene is located on the ChrX. 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.
- The flox region contain the Snord61 gene, which may delete it after Cre.
- 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)

RbmX RNA binding motif protein, X chromosome [Mus musculus (house mouse)]

Gene ID: 19655, updated on 7-Apr-2019

Summary



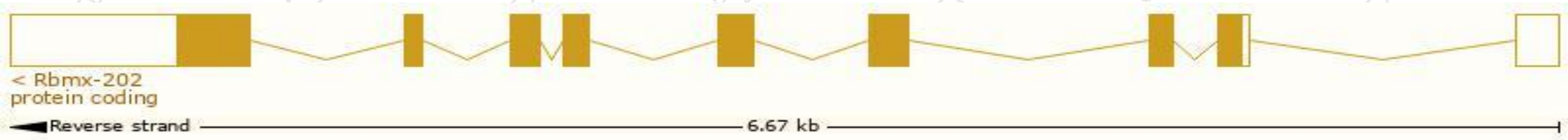
Official Symbol	RbmX provided by MGI
Official Full Name	RNA binding motif protein, X chromosome provided by MGI
Primary source	MGI:MGI:1343044
See related	Ensembl:ENSMUSG000000031134
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	hnRNP G
Expression	Broad expression in CNS E14 (RPKM 55.1), CNS E11.5 (RPKM 51.1) and 20 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

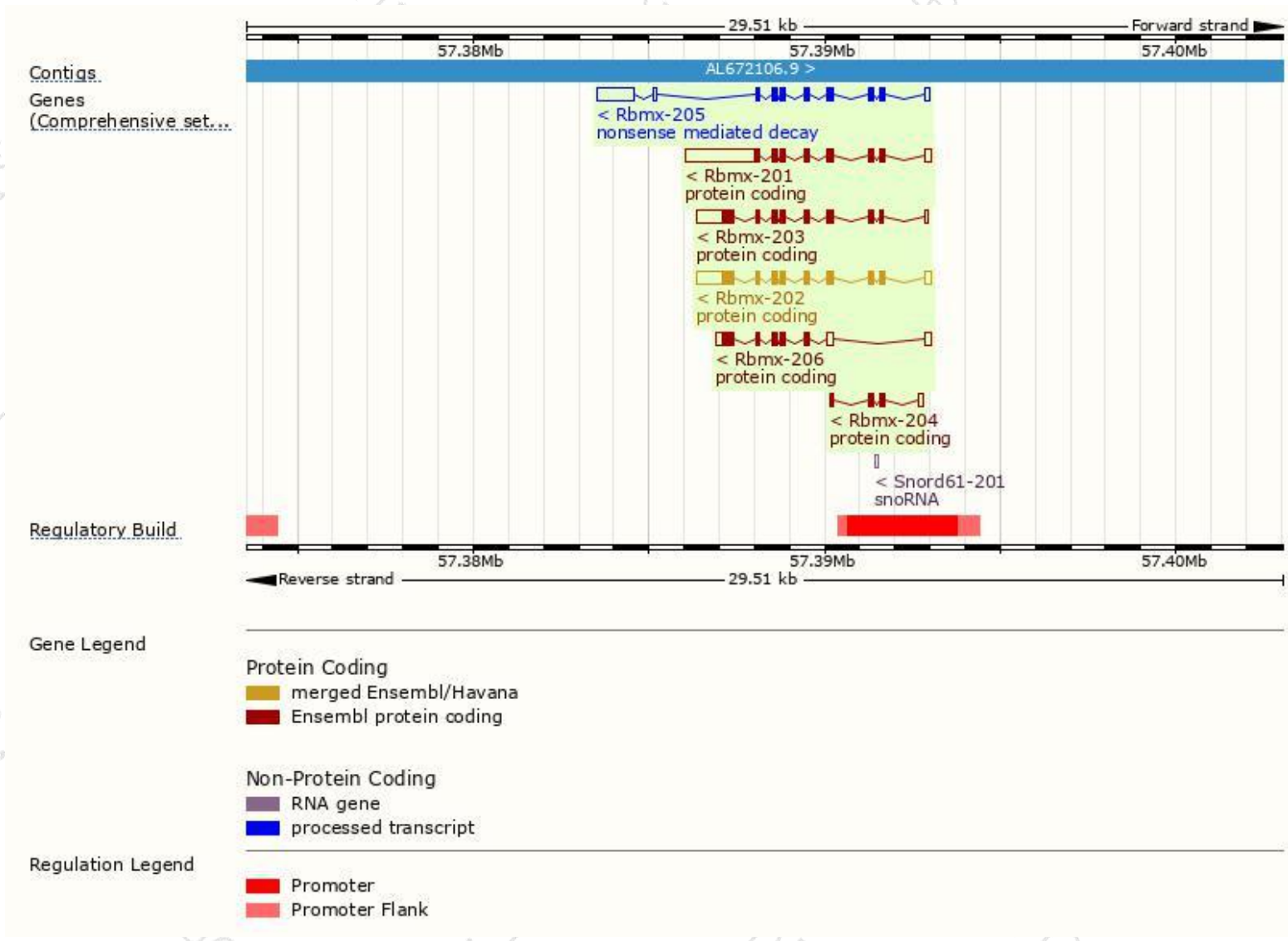
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
RbmX-202	ENSMUST00000114726.7	2108	391aa	Protein coding	CCDS30153	Q9WV02	TSL:1 GENCODE basic APPRIS P1
RbmX-203	ENSMUST00000114730.7	2019	391aa	Protein coding	CCDS30153	Q9WV02	TSL:5 GENCODE basic APPRIS P1
RbmX-201	ENSMUST00000098470.8	3107	301aa	Protein coding	-	A2AFI3	TSL:5 GENCODE basic
RbmX-206	ENSMUST00000143310.1	1296	263aa	Protein coding	-	S4R1F6	TSL:5 GENCODE basic
RbmX-204	ENSMUST00000133346.1	434	103aa	Protein coding	-	A2AFI4	CDS 3' incomplete TSL:3
RbmX-205	ENSMUST00000140384.7	2139	289aa	Nonsense mediated decay	-	Q9WV02	TSL:1

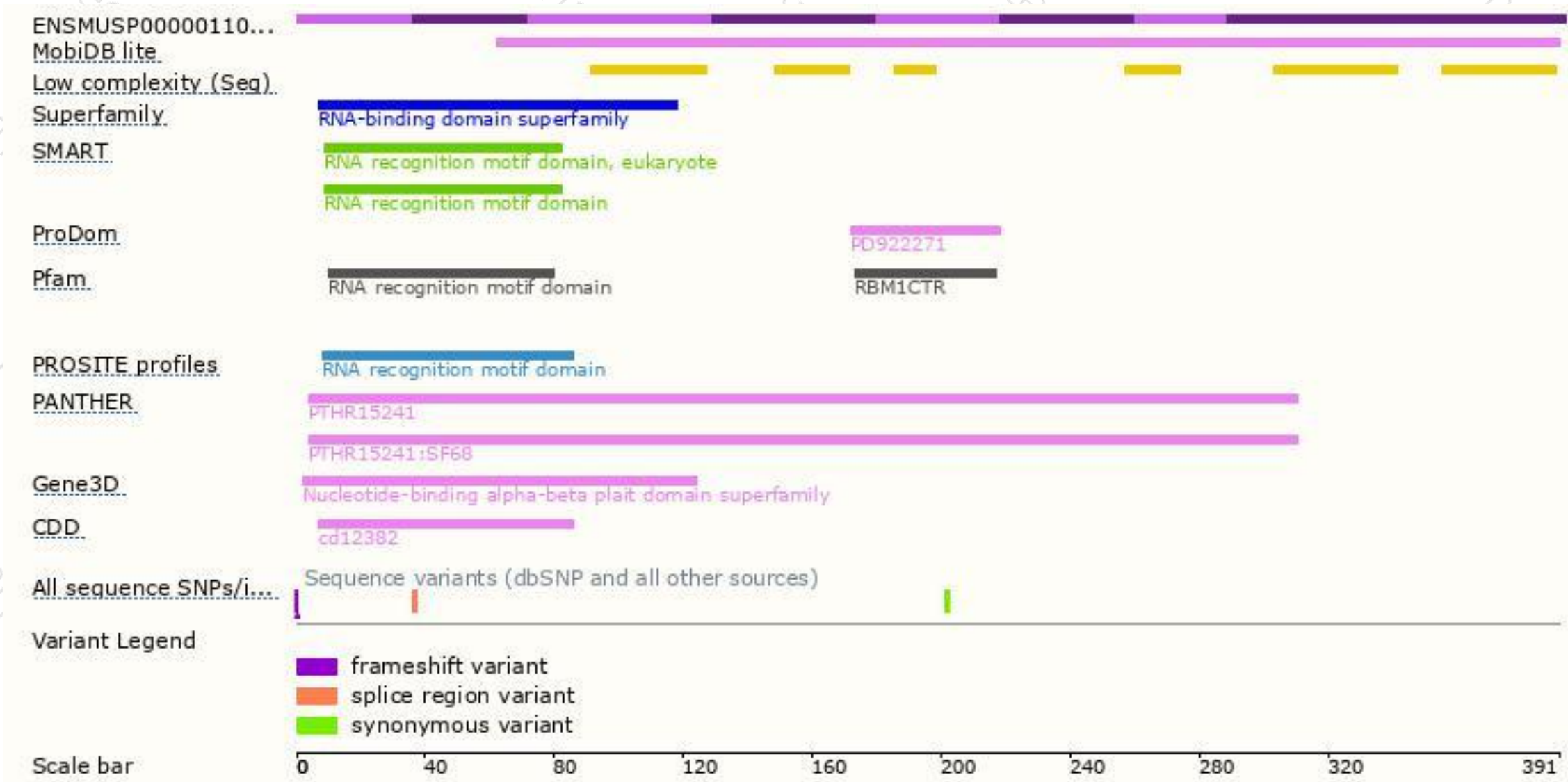
The strategy is based on the design of *RbmX-202* transcript,The transcription is shown below



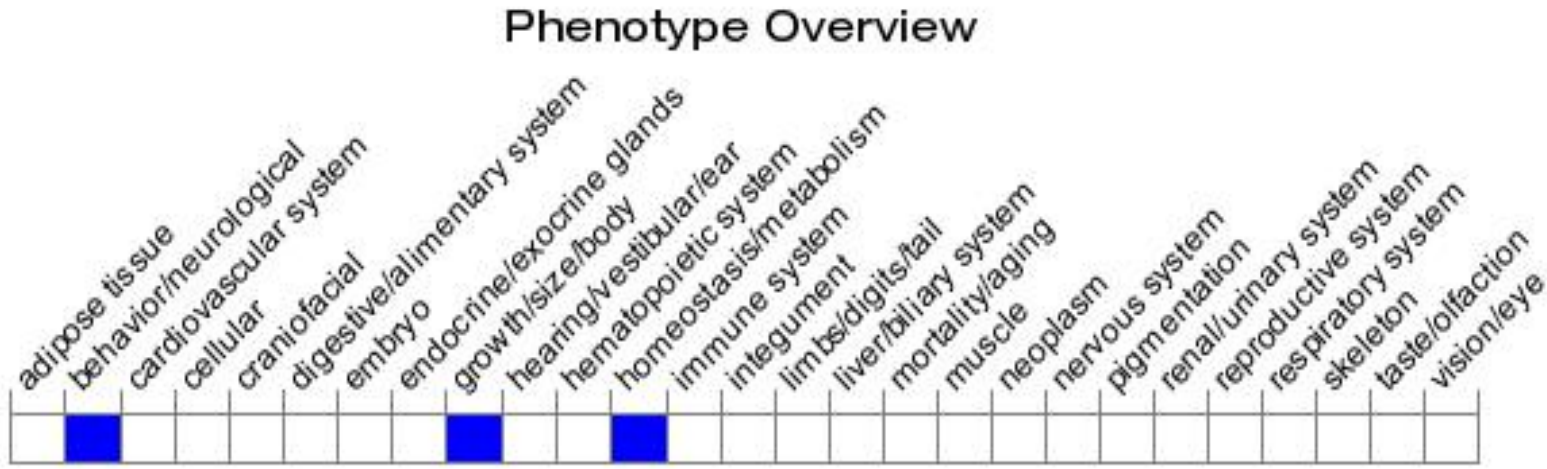
Genomic location distribution



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/>).

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

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