

***Gorasp2* Cas9-CKO Strategy**

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Reviewer:

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Design Date:

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Project Overview

Project Name

Gorasp2

Project type

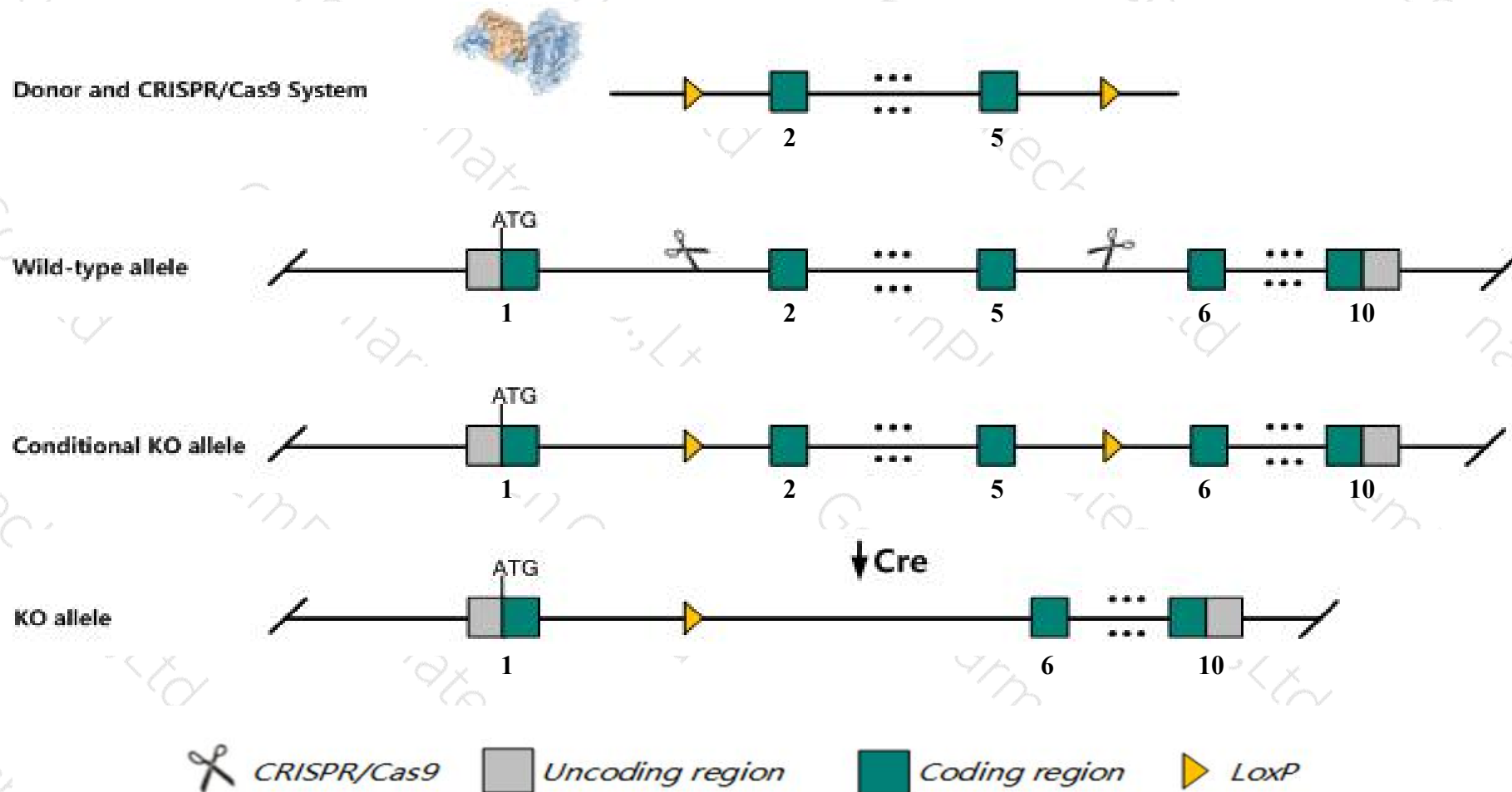
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gorasp2* gene. The schematic diagram is as follows:



- The *Gorasp2* gene has 6 transcripts. According to the structure of *Gorasp2* gene, exon2-exon5 of *Gorasp2-201* (ENSMUST00000028509.10) transcript is recommended as the knockout region. The region contains 503bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gorasp2* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Gorasp2* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Gorasp2 golgi reassembly stacking protein 2 [Mus musculus (house mouse)]

Gene ID: 70231, updated on 5-Mar-2019

Summary



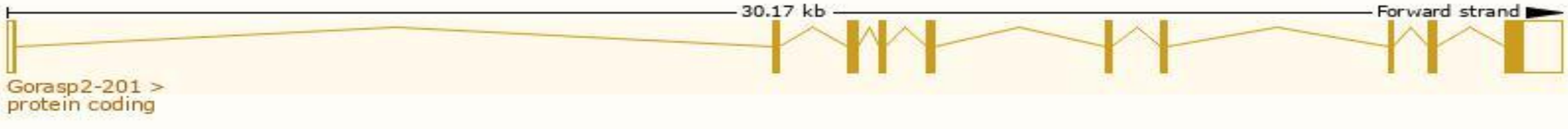
Official Symbol	Gorasp2 provided by MGI
Official Full Name	golgi reassembly stacking protein 2 provided by MGI
Primary source	MGI:MGI:2135962
See related	Ensembl:ENSMUSG00000014959
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	0610011A07Rik, 2410043M02Rik, 5730520M13Rik, 9430094F20Rik, AW552058, GOLPH2, GRASP55, GRS2, p59
Expression	Ubiquitous expression in testis adult (RPKM 74.9), adrenal adult (RPKM 71.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

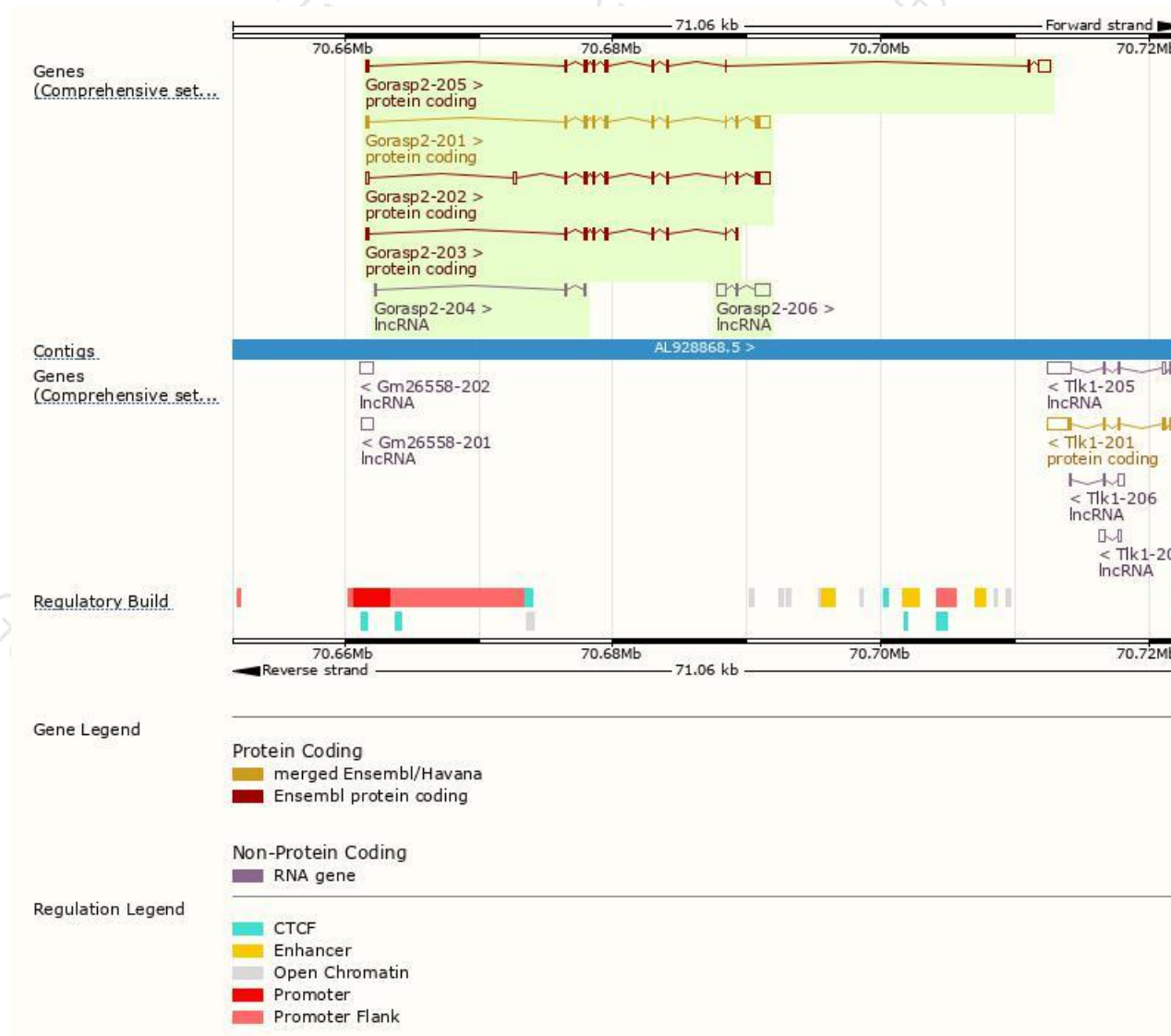
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gorasp2-201	ENSMUST00000028509.10	2238	451aa	Protein coding	CCDS16109	Q99JX3	TSL:1 GENCODE basic APPRIS P2
Gorasp2-202	ENSMUST00000112201.7	2417	431aa	Protein coding	-	A2ATI9	TSL:1 GENCODE basic APPRIS ALT2
Gorasp2-205	ENSMUST00000133432.7	1941	317aa	Protein coding	-	A2ATI8	TSL:1 GENCODE basic APPRIS ALT2
Gorasp2-203	ENSMUST00000112205.1	1196	351aa	Protein coding	-	A2ATI6	TSL:1 GENCODE basic APPRIS ALT2
Gorasp2-206	ENSMUST00000136485.1	1844	No protein	lncRNA	-	-	TSL:1
Gorasp2-204	ENSMUST00000130970.1	303	No protein	lncRNA	-	-	TSL:5

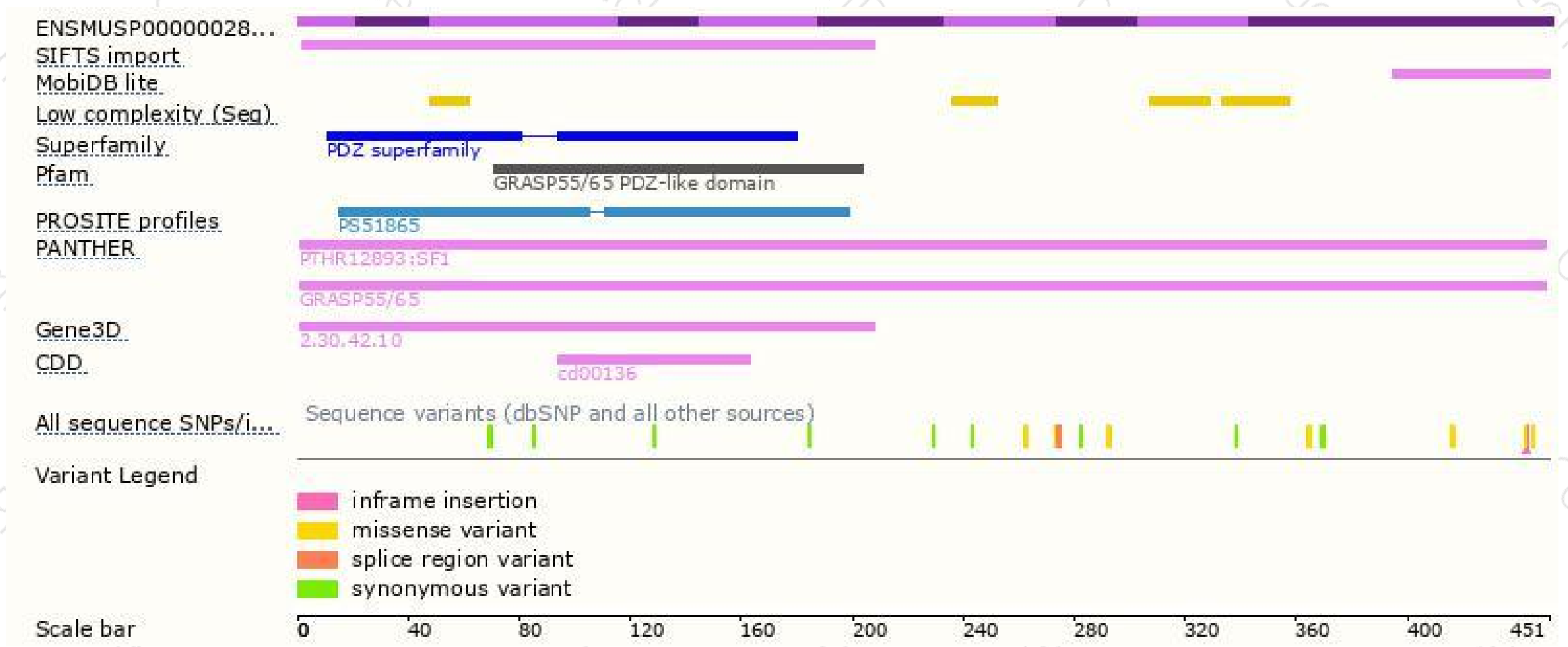
The strategy is based on the design of *Gorasp2-201* transcript,The transcription is shown below



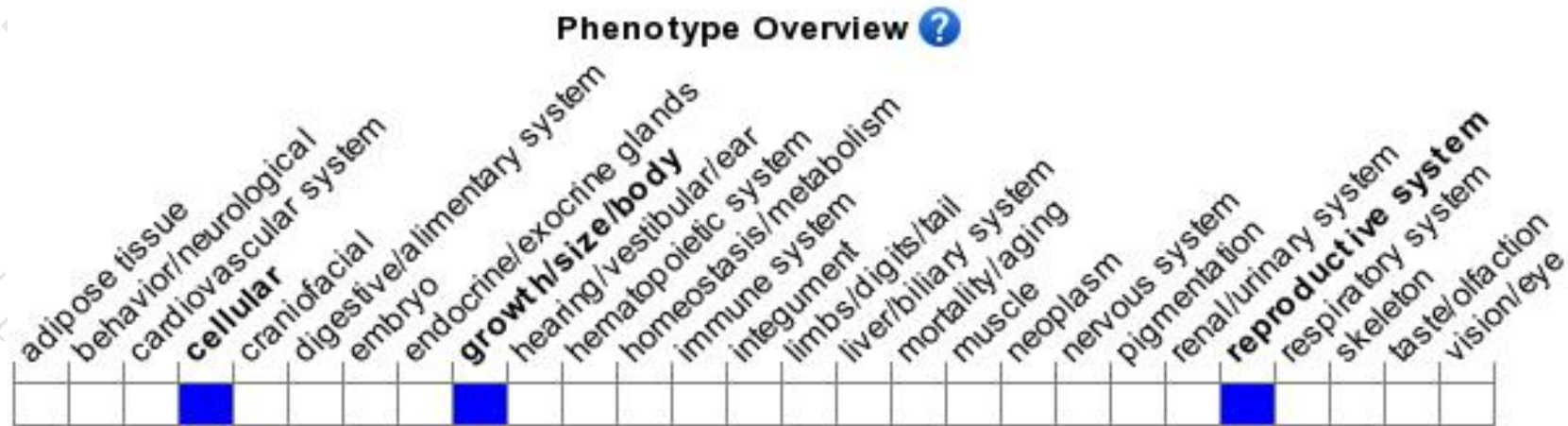
Genomic location distribution



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/>).

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

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