

Ints6 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Ints6

Project type

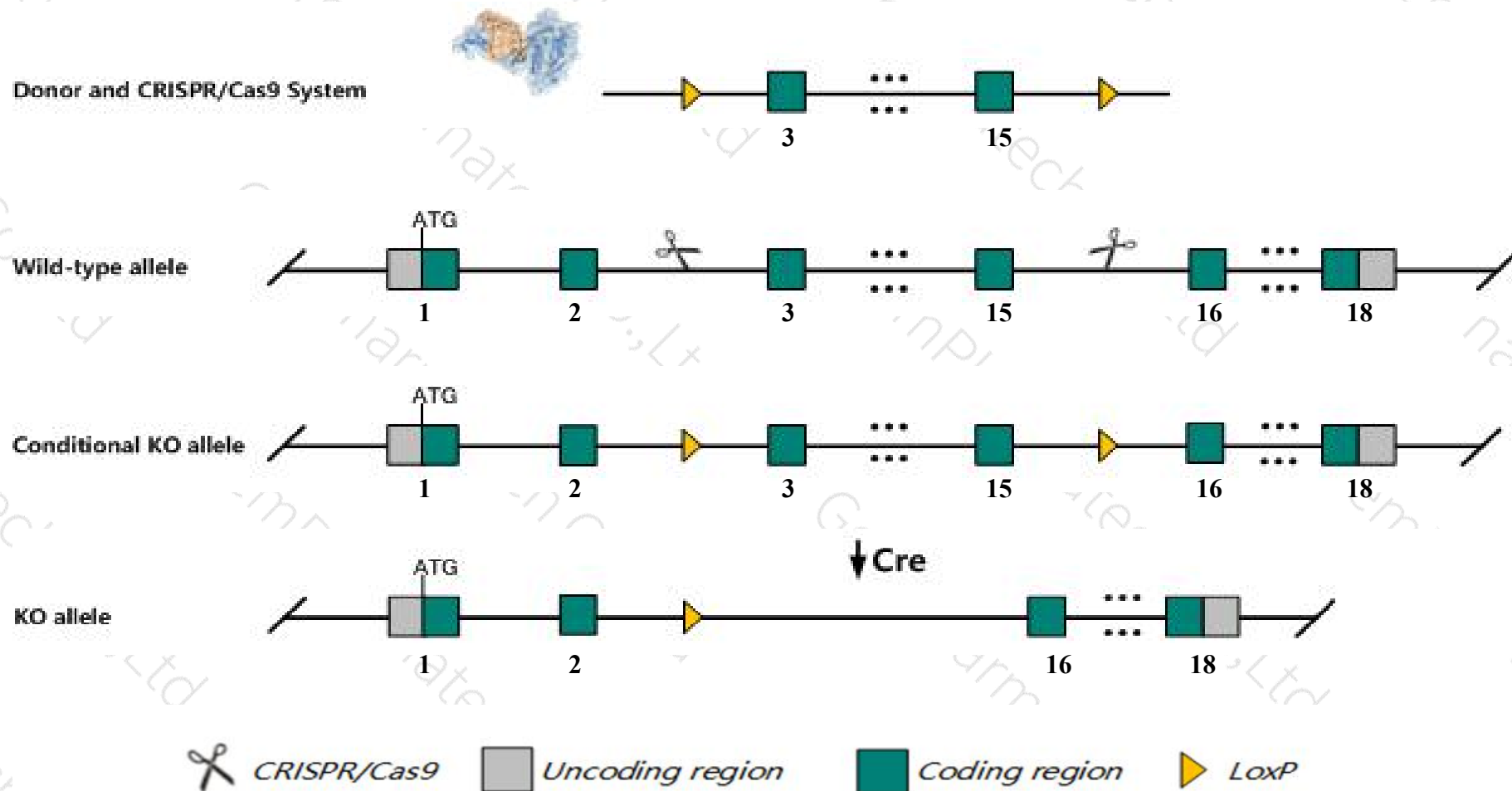
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ints6* gene. The schematic diagram is as follows:



- The *Ints6* gene has 7 transcripts. According to the structure of *Ints6* gene, exon3-exon15 of *Ints6*-202 (ENSMUST00000223585.1) transcript is recommended as the knockout region. The region contains 1912bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ints6* 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.

- According to the existing MGI data, Mice homozygous for a transgenic gene disruption exhibit embryonic lethality at E7.
- The *Ints6* gene is located on the Chr14. 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)

Ints6 integrator complex subunit 6 [*Mus musculus* (house mouse)]

Gene ID: 18130, updated on 12-Aug-2019

Summary

Official Symbol	Ints6 provided by MGI
Official Full Name	integrator complex subunit 6 provided by MGI
Primary source	MGI:MGI:1202397
See related	Ensembl:ENSMUSG00000035161
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	HDB; DICE1; Ddx26; Notch2l; AI480962; 2900075H24Rik
Expression	Ubiquitous expression in testis adult (RPKM 6.7), placenta adult (RPKM 5.3) and 28 other tissues See more
Orthologs	human all

Genomic context

Location: 14; 14 D1

Exon count: 21

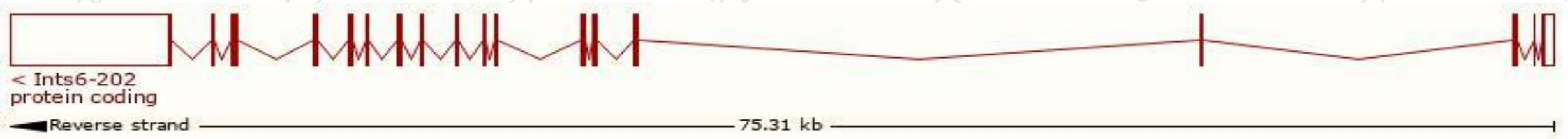
See Ints6 in [Genome Data Viewer](#)

Transcript information (Ensembl)

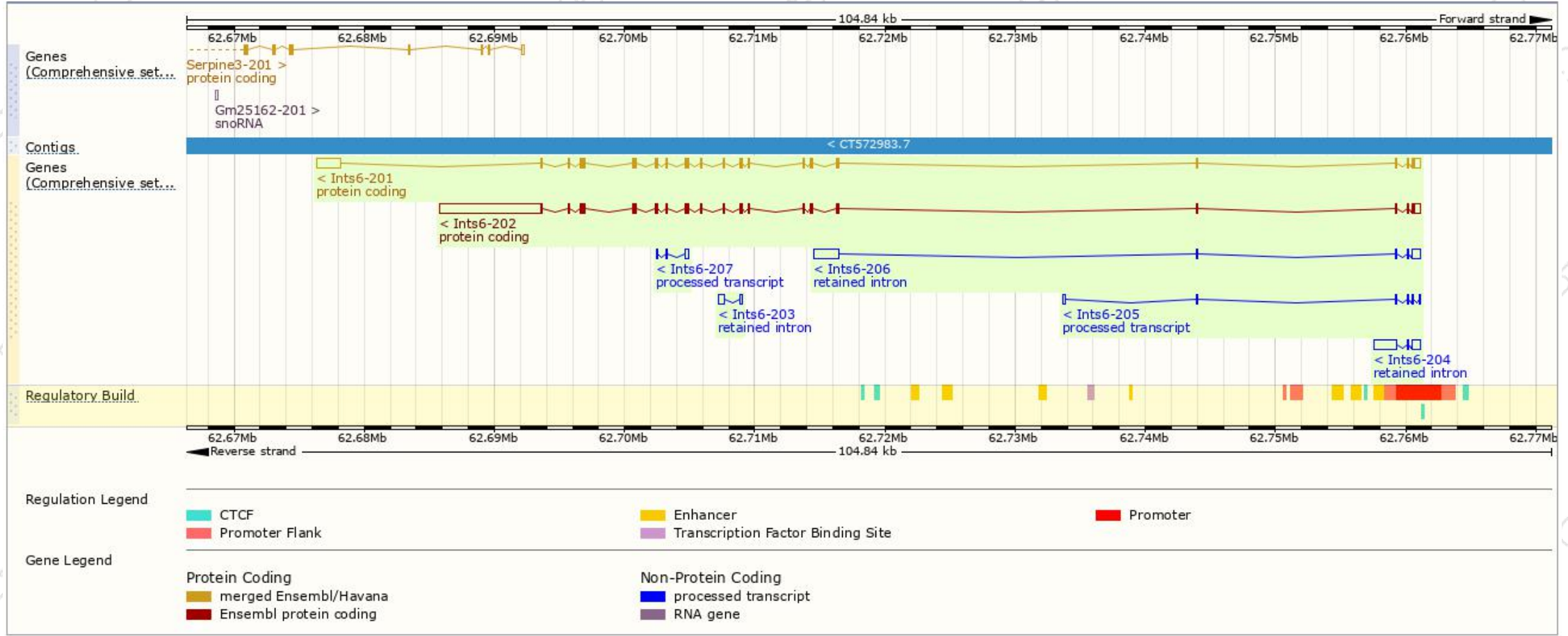
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ints6-202	ENSMUST00000223585.1	10883	883aa	Protein coding	CCDS27191	Q6PCM2	GENCODE basic APPRIS P1
Ints6-201	ENSMUST00000053959.6	4993	883aa	Protein coding	CCDS27191	Q6PCM2	TSL:1 GENCODE basic APPRIS P1
Ints6-206	ENSMUST00000225406.1	2894	No protein	Retained intron	-	-	
Ints6-204	ENSMUST00000225193.1	2402	No protein	Retained intron	-	-	
Ints6-203	ENSMUST00000224891.1	639	No protein	Retained intron	-	-	
Ints6-205	ENSMUST00000225250.1	700	No protein	lncRNA	-	-	
Ints6-207	ENSMUST00000225700.1	366	No protein	lncRNA	-	-	

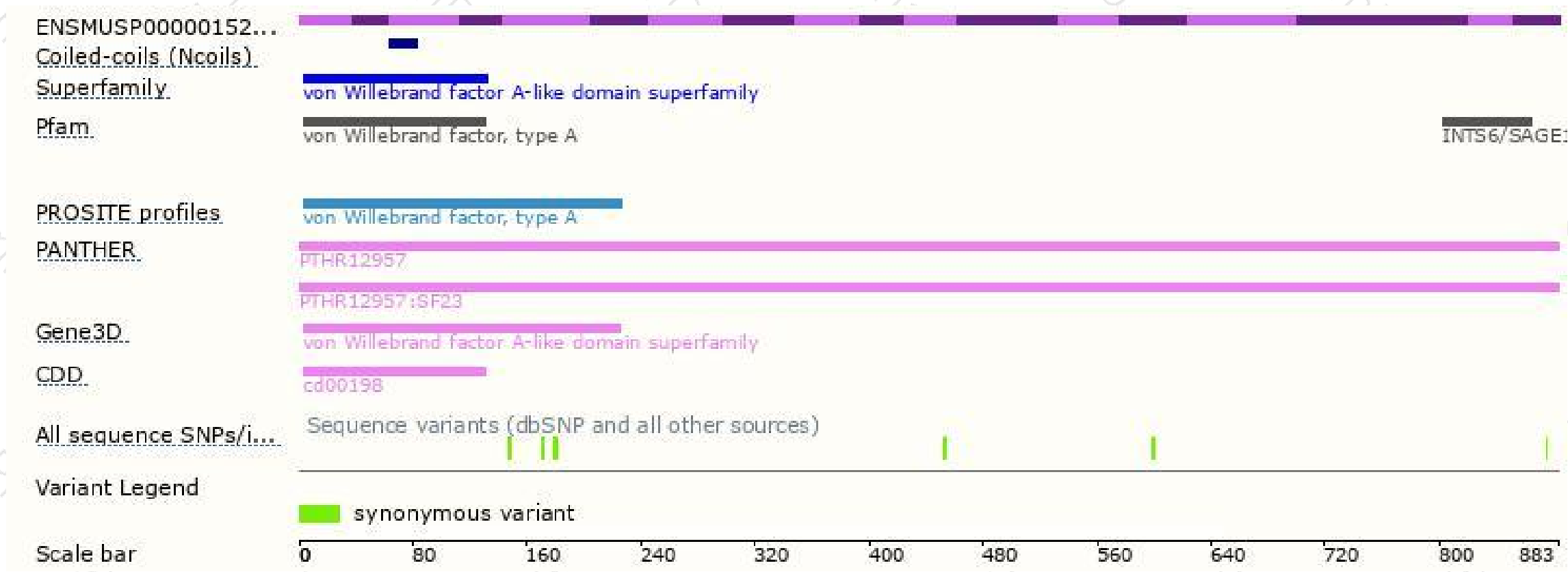
The strategy is based on the design of *Ints6-202* transcript,The transcription is shown below



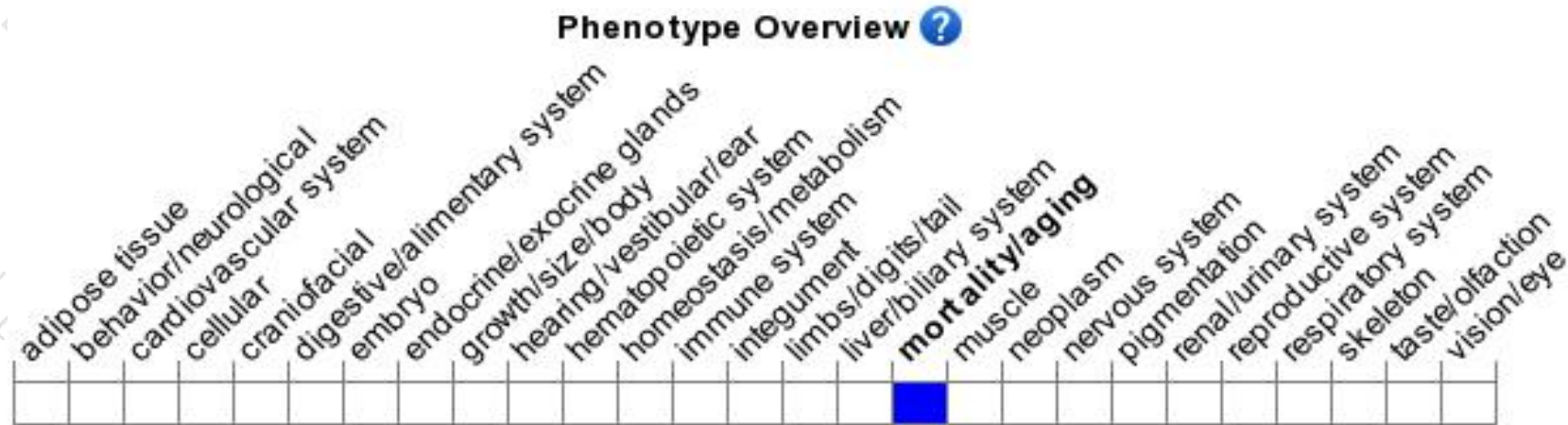
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a transgenic gene disruption exhibit embryonic lethality at E7.

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

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