# *Fzd7* Cas9-KO Strategy

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# Project Overview

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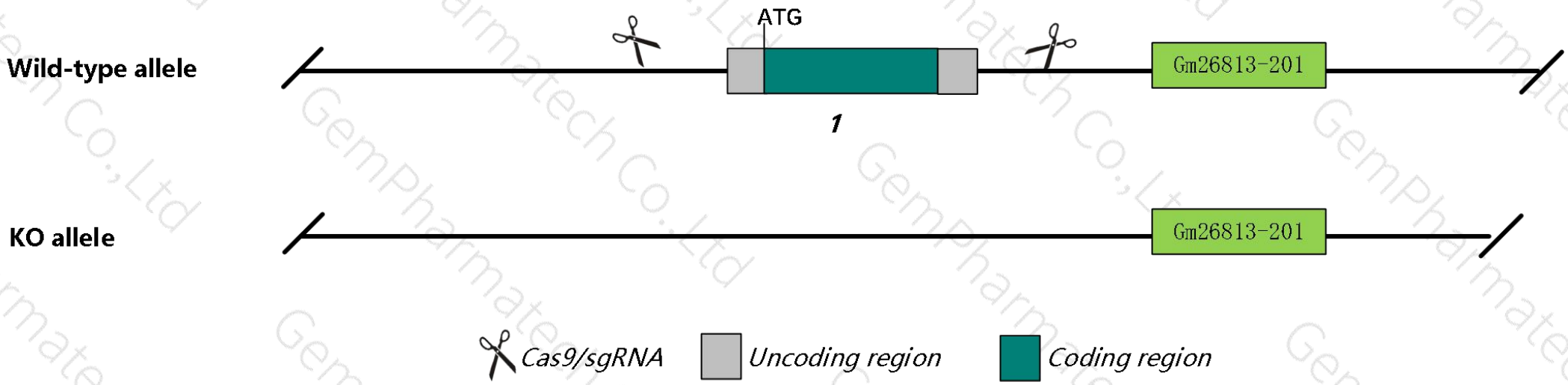
|---|---|
| **Project Name** | ***Fzd7*** |
| **Project type** | **Cas9-KO** |
| **Strain background** | **C57BL/6JGpt** |

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fzd7* gene. The schematic diagram is as follows:



# Technical routes

➢ The *Fzd7* gene has 1 transcript. According to the structure of *Fzd7* gene, exon1 of *Fzd7-201* (ENSMUST00000114246.3) 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 *Fzd7* gene. The brief process is as follows:CRISPR/Cas9 system tran

# Notice

- According to the existing MGI data,Mice homozygous for a null allele exhibit a shorter tail with a distal kink with full penetrance as well as cardiac defects with low penetrance.

- The *Fzd7* gene is located on the Chr1. 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 konckout region on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

# Gene information （NCBI）

集萃药康 GemPharmatech

## Fzd7 frizzled class receptor 7 [ *Mus musculus* (house mouse) ]

Gene ID: 14369, updated on 26-Nov-2019

### Summary

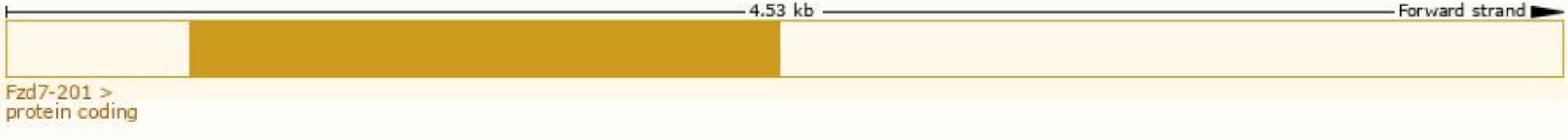
| | |
|---|---|
| **Official Symbol** | Fzd7 provided by MGI |
| **Official Full Name** | frizzled class receptor 7 provided by MGI |
| **Primary source** | MGI:MGI:108570 |
| **See related** | Ensembl:ENSMUSG00000041075 |
| **Gene type** | protein coding |
| **RefSeq status** | VALIDATED |
| **Organism** | Mus musculus |
| **Lineage** | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus |
| **Also known as** | Fz7 |
| **Orthologs** | human all |

# Transcript information（Ensembl）

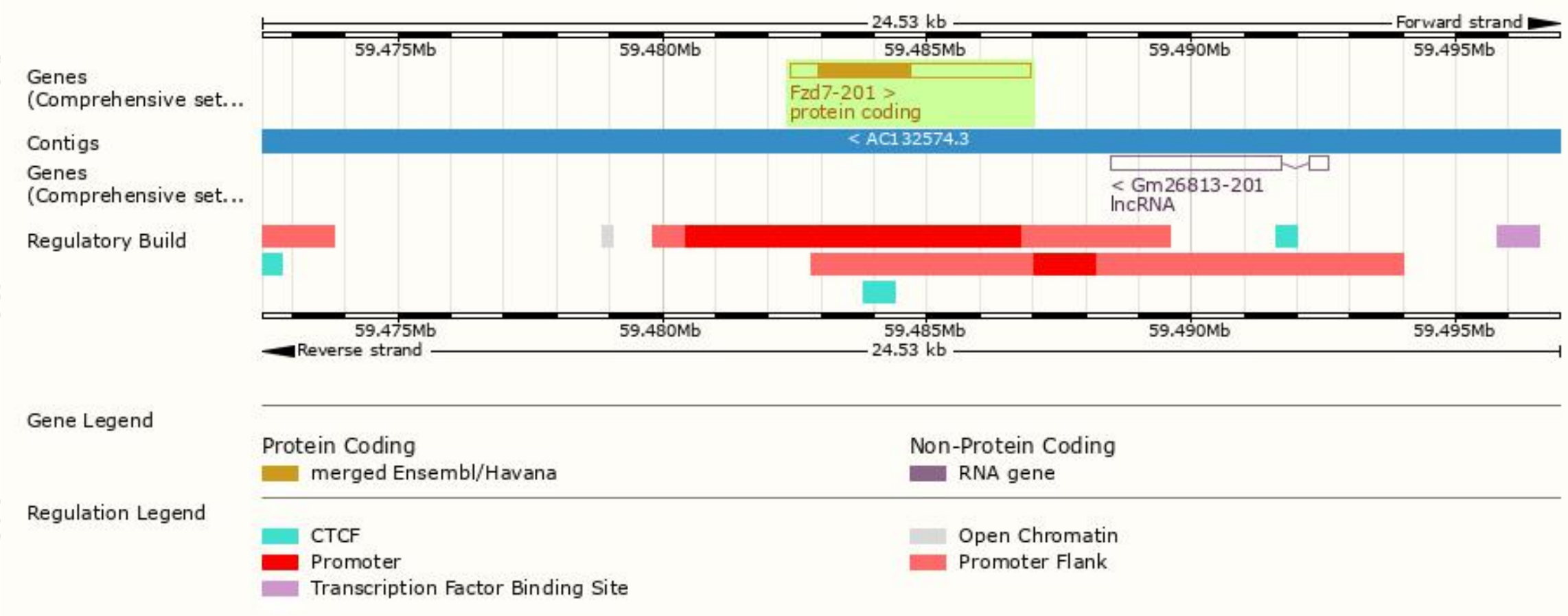
The gene has 1 transcript,and the transcript is shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|---|---|---|---|---|---|---|---|
| Fzd7-201 | ENSMUST00000114246.3 | 4532 | 572aa | Protein coding | CCDS14985 | Q61090 | TSL:NA GENCODE basic APPRIS P1 |

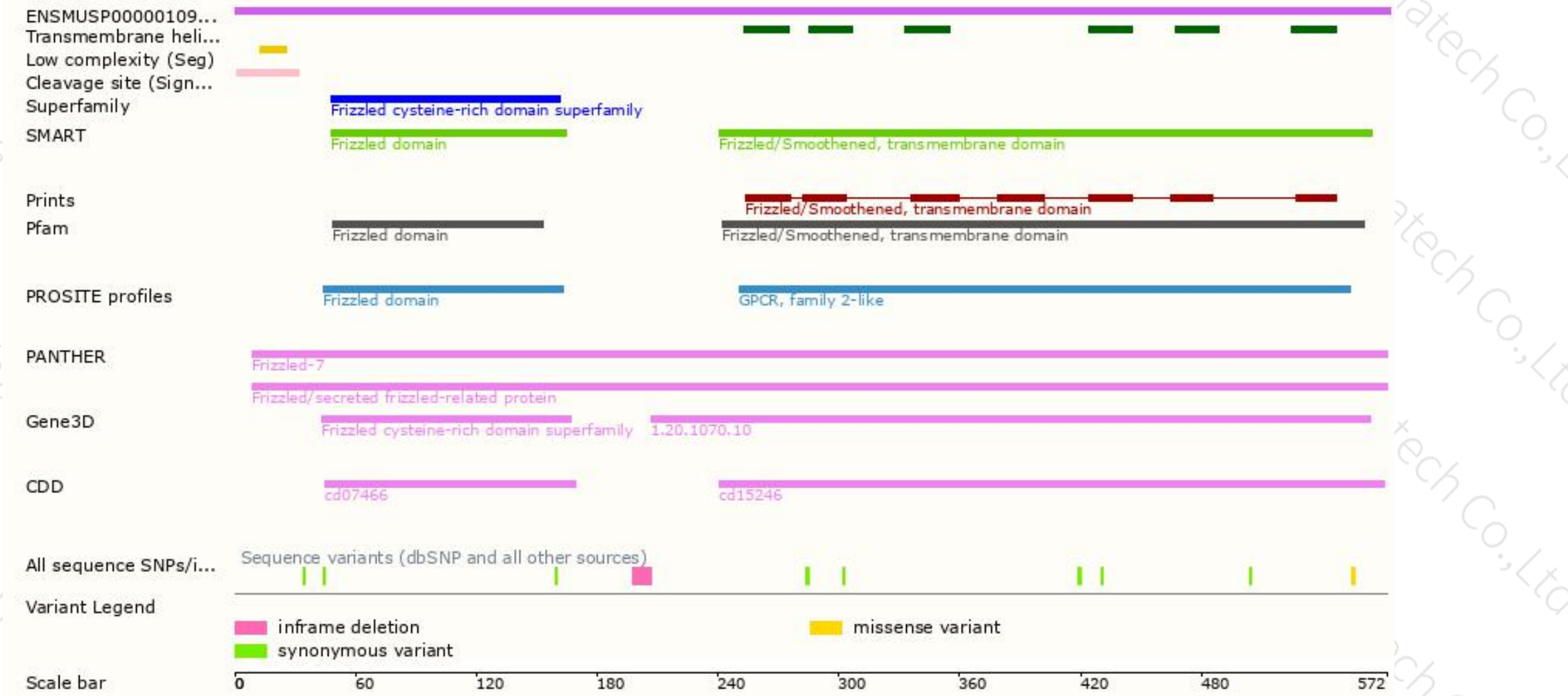
The strategy is based on the design of *Fzd7-201* transcript,The transcription is shown below



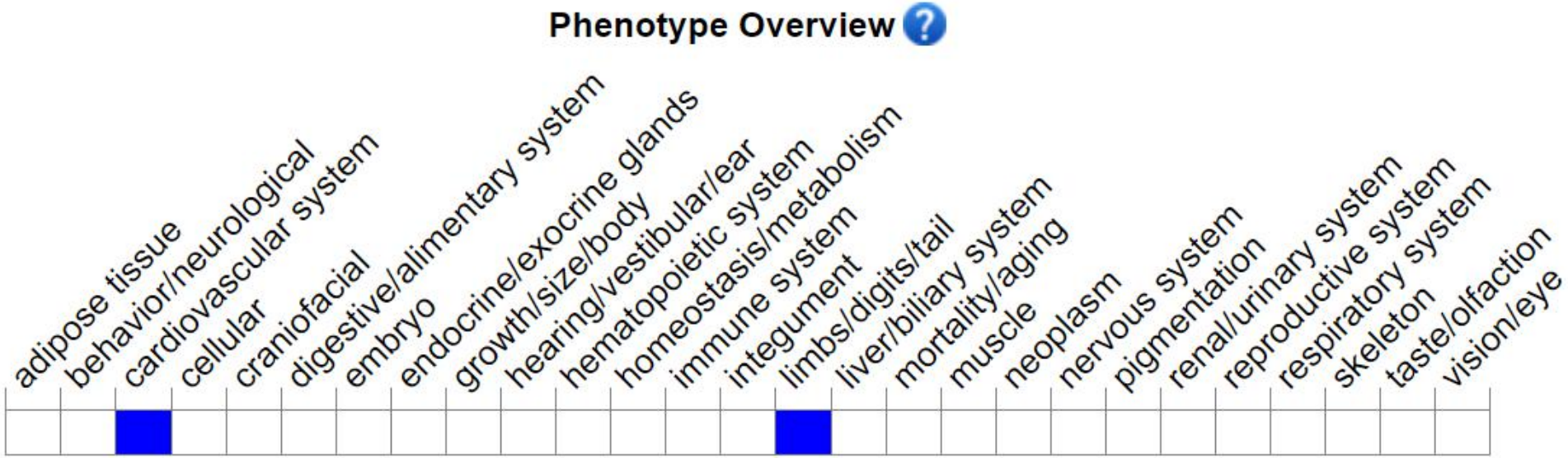
# Genomic location distribution



# 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,Homozygotes for a spontaneous or null mutation display microphthalmia, fusion of the lens and cornea, and other corneal and lens abnormalities. Null mice have reduced smooth muscle cell density in the ascending aorta and show aortic remodeling and rupture of the aorta after TAC.

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

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