C2cd4c Cas9-KO Strategy

Designer: Daohua Xu

Reviewer: Huimin Su

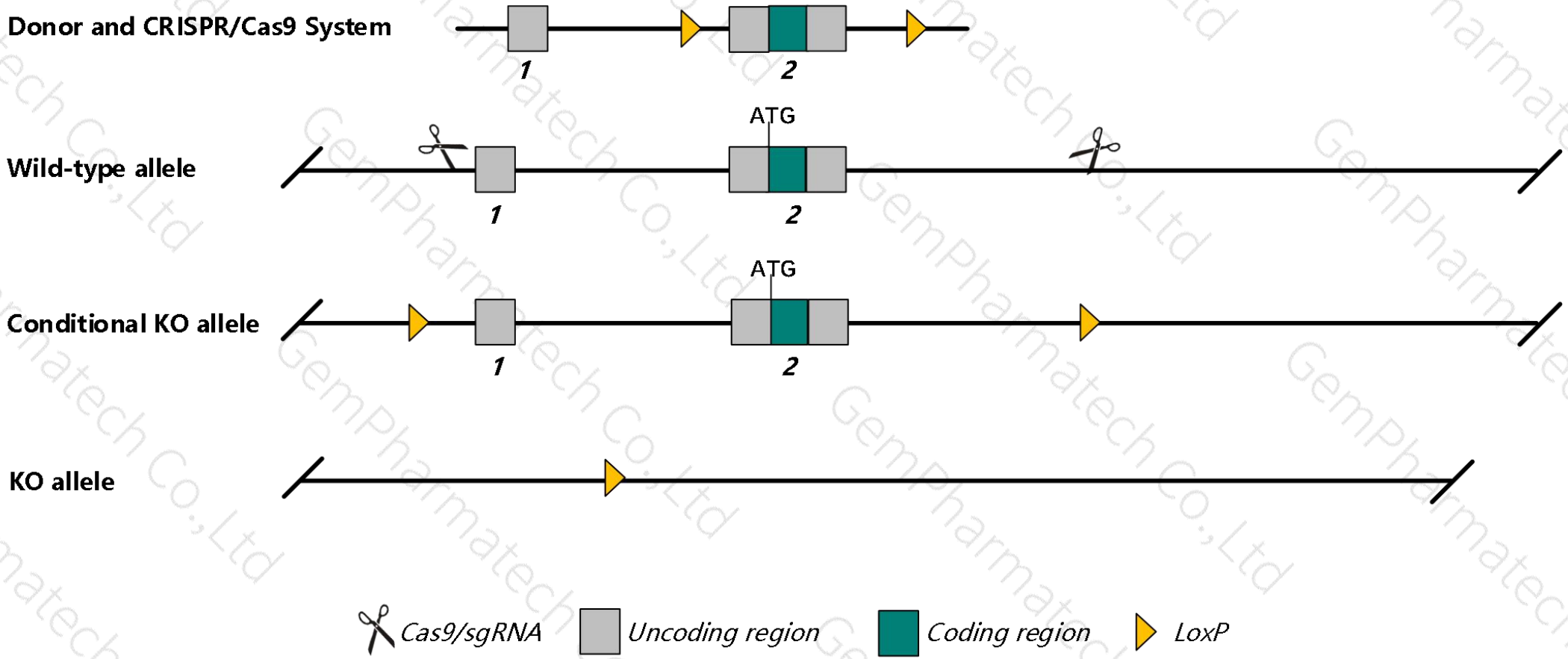
Design Date: 2020-5-20

Project Overview

Project Name	***C2cd4c***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *C2cd4c* gene. The schematic diagram is as follows:



Technical routes

➢ The *C2cd4c* gene has 2 transcripts. According to the structure of *C2cd4c* gene, exon1-exon2 of *C2cd4c-201* (ENSMUST00000059699.8) 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 *C2cd4c* gene. The brief process is as follows: CRISPR/Cas9 syster

Notice

- According to the existing MGI data,mice homozygous for a knock-out allele exhibit decreased body weight but normal glucose homeostasis and pancreas development.
- The *C2cd4c* gene is located on the Chr10. 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）

集萃药康 GemPharmatech

C2cd4c C2 calcium-dependent domain containing 4C [Mus musculus (house mouse)]

Gene ID: 237397, updated on 13-Mar-2020

Summary

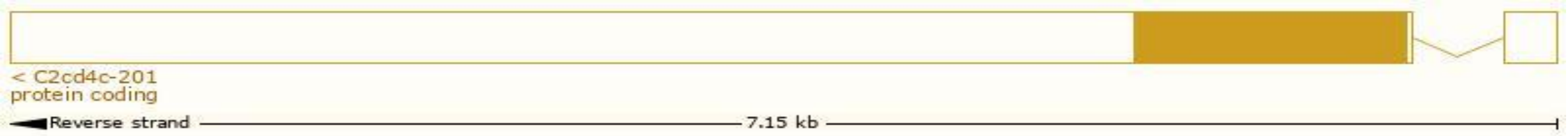
Official Symbol	C2cd4c provided by MGI
Official Full Name	C2 calcium-dependent domain containing 4C provided byMGI
Primary source	MGI:MGI:2685084
See related	Ensembl:ENSMUSG00000045912
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4932409I22Rik, Fam148c, Gm238
Expression	Biased expression in CNS E18 (RPKM 2.9), cortex adult (RPKM 1.9) and 12 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

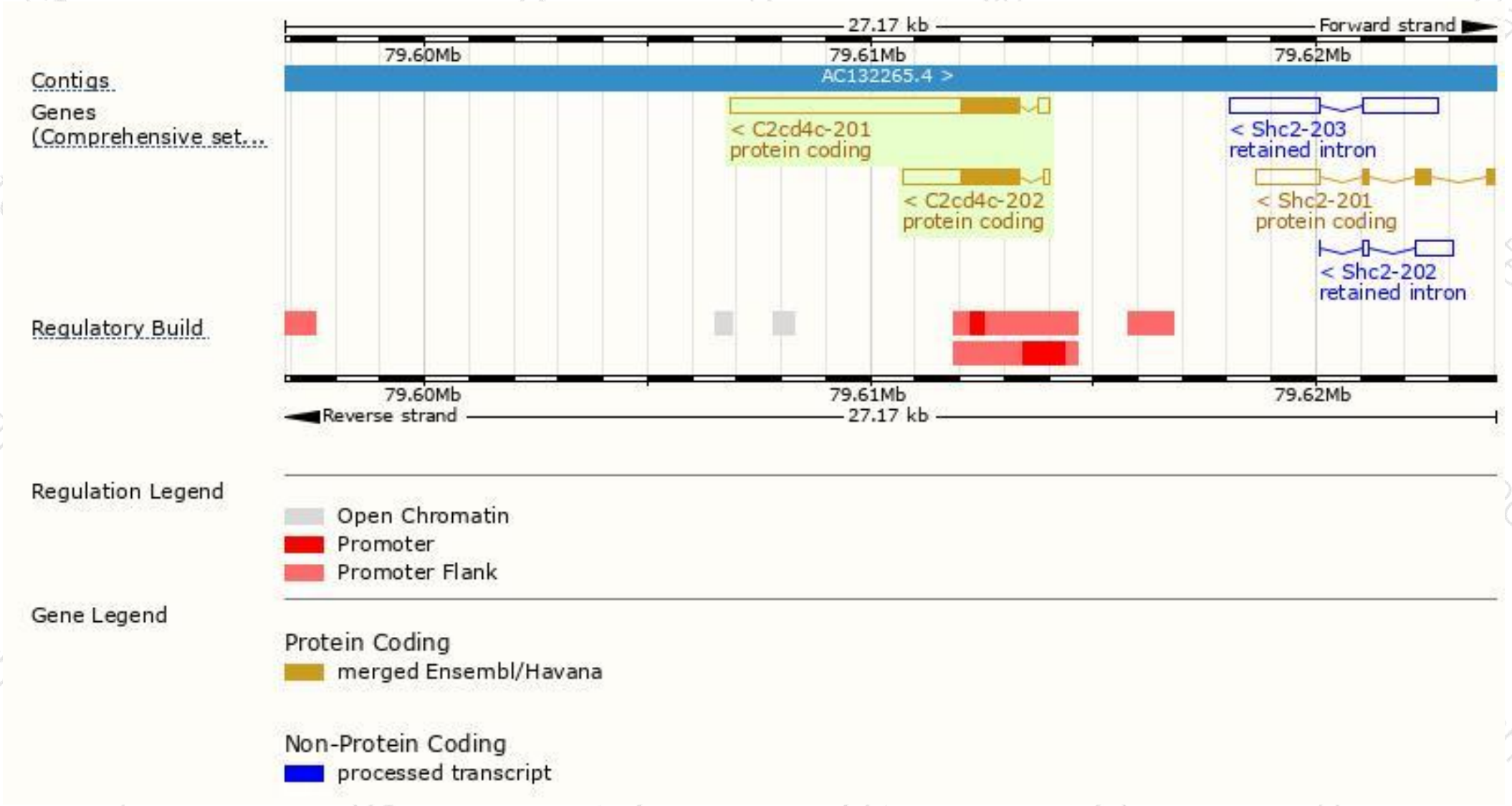
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
C2cd4c-201	ENSMUST00000059699.8	6729	419aa	Protein coding	CCDS23979	Q5HZI2	TSL:1 GENCODE basic APPRIS P1
C2cd4c-202	ENSMUST00000178228.2	2761	419aa	Protein coding	CCDS23979	Q5HZI2	TSL:1 GENCODE basic APPRIS P1

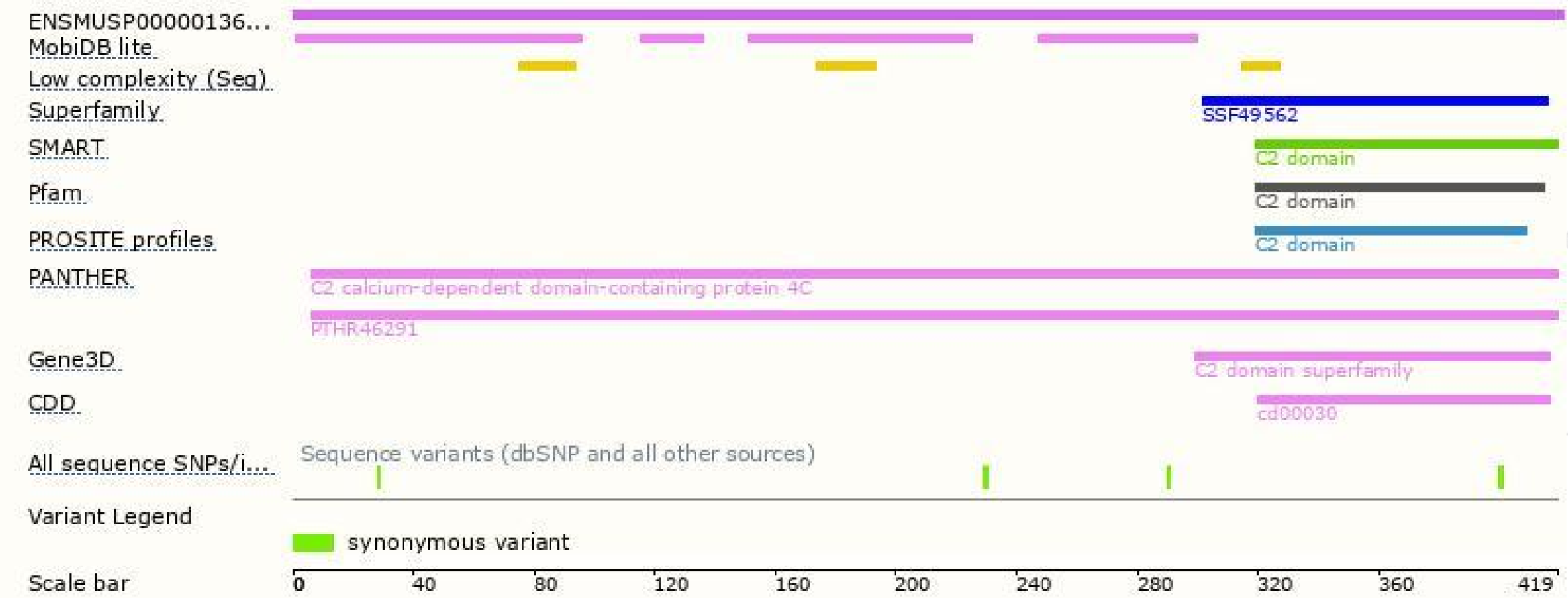
The strategy is based on the design of *C2cd4c-201* transcript,the transcription is shown below:



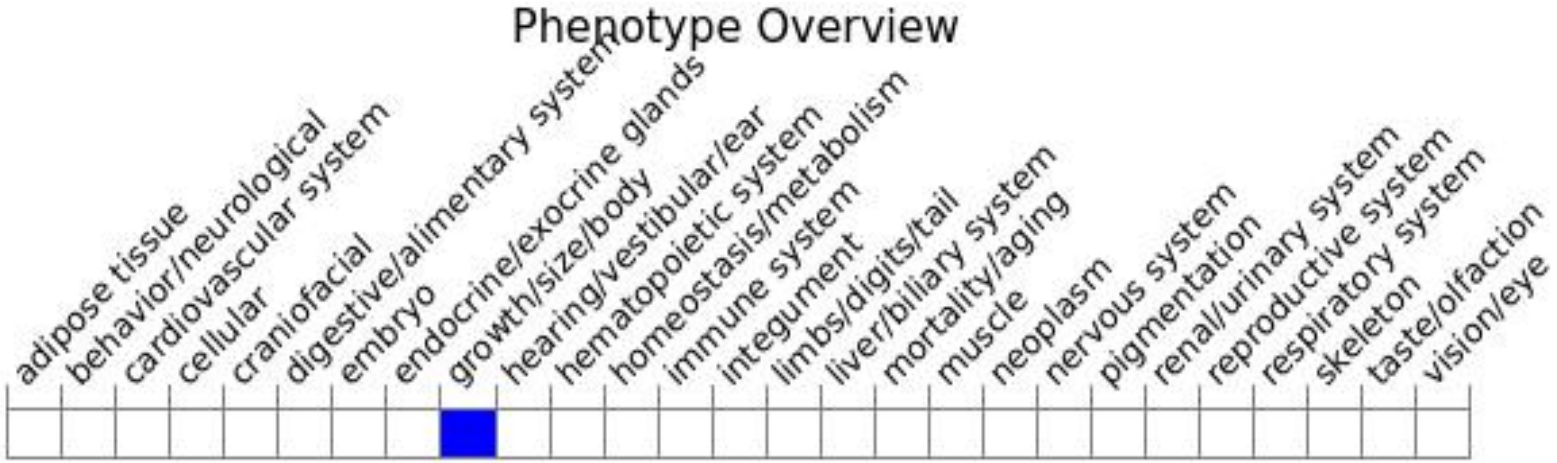
Genomic location distribution



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 decreased body weight but normal glucose homeostasis and pancreas development.

集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd