

Arf6 Cas9-KO Strategy

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Project Overview

Project Name

Arf6

Project type

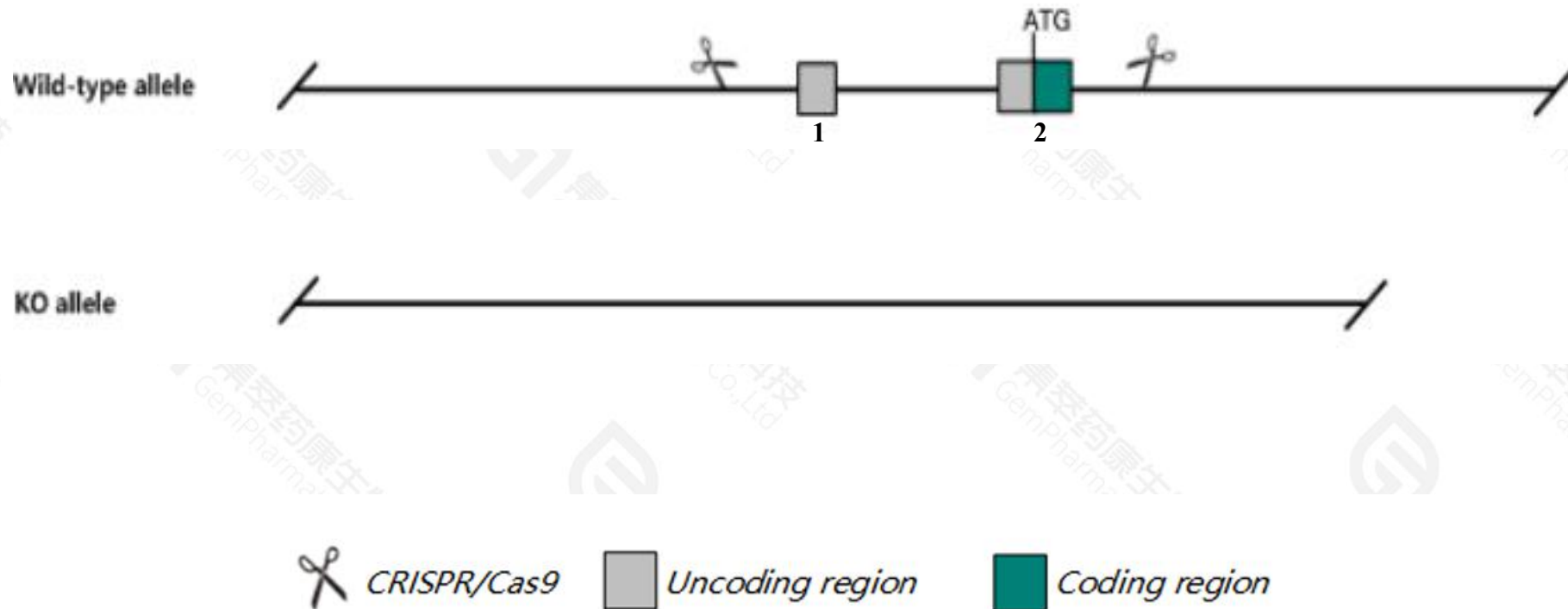
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Arf6* gene. The schematic diagram is as follows:



- The *Arf6* gene has 1 transcript. According to the structure of *Arf6* gene, exon1-exon2 of *Arf6*-201(ENSMUST00000050063.9) 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 *Arf6* gene. The brief process is as follows: CRISPR/Cas9 system 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.

- Gm18113、Gm9887 gene will be deleted.
- According to the existing MGI data, mice homozygous for a null allele display embryonic and perinatal lethality beginning around mid-gestation, impaired liver development, and edema.
- The *Arf6* gene is located on the Chr12. 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.

Arf6 ADP-ribosylation factor 6 [Mus musculus (house mouse)]

Gene ID: 11845, updated on 14-Feb-2021

Summary



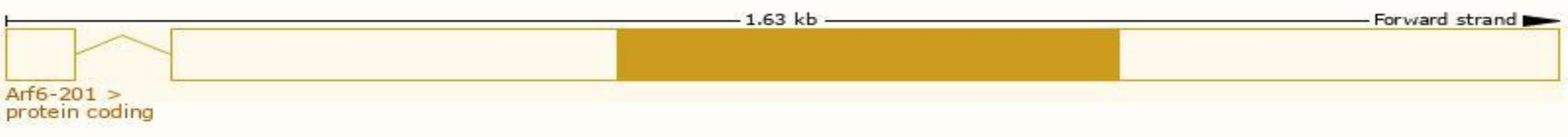
Official Symbol	Arf6 provided by MGI
Official Full Name	ADP-ribosylation factor 6 provided by MGI
Primary source	MGI:MGI:99435
See related	Ensembl:ENSMUSG00000044147
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI788669, AW496366
Expression	Ubiquitous expression in duodenum adult (RPKM 90.2), colon adult (RPKM 84.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

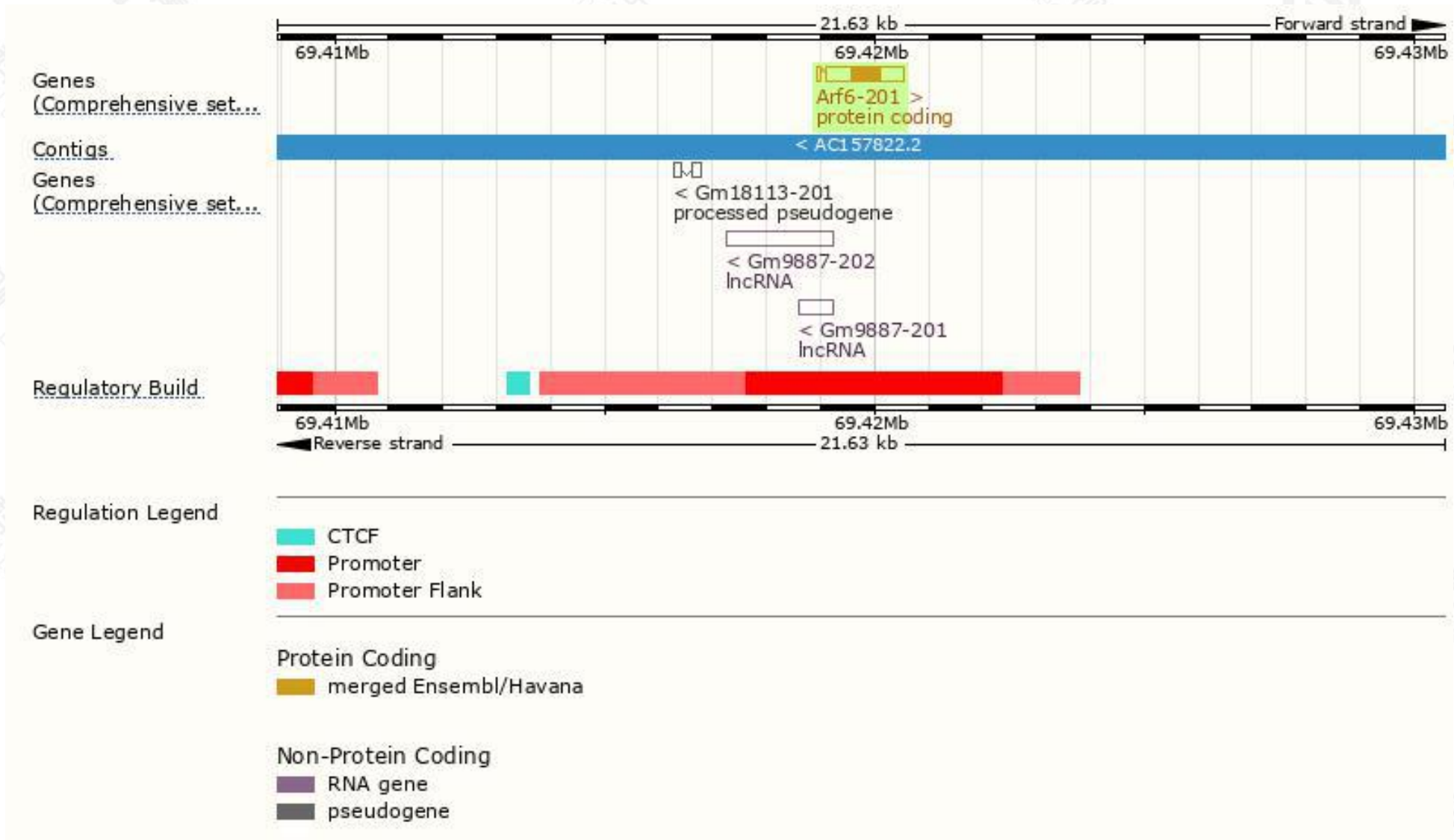
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Arf6-201	ENSMUST00000050063.9	1534	175aa	Protein coding	CCDS25952		TSL:1 , GENCODE basic , APPRIS P1 ,

The strategy is based on the design of *Arf6-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain

ENSMUSP00000055...

TIGRFAM

Small GTP-binding protein domain

Superfamily

P-loop containing nucleoside triphosphate hydrolase

SMART

SM00175

SM00178

SM00177

Prints

Small GTPase superfamily, ARF/SAR type

Pfam

Small GTPase superfamily, ARF/SAR type

PROSITE profiles

PS51417

PANTHER

PTHR11711:SF394

PTHR11711

Gene3D

3.40.50.300

CDD

ADP-ribosylation factor 6

All sequence SNPs/i...

Sequence variants (dbSNP and all other sources)

Variant Legend

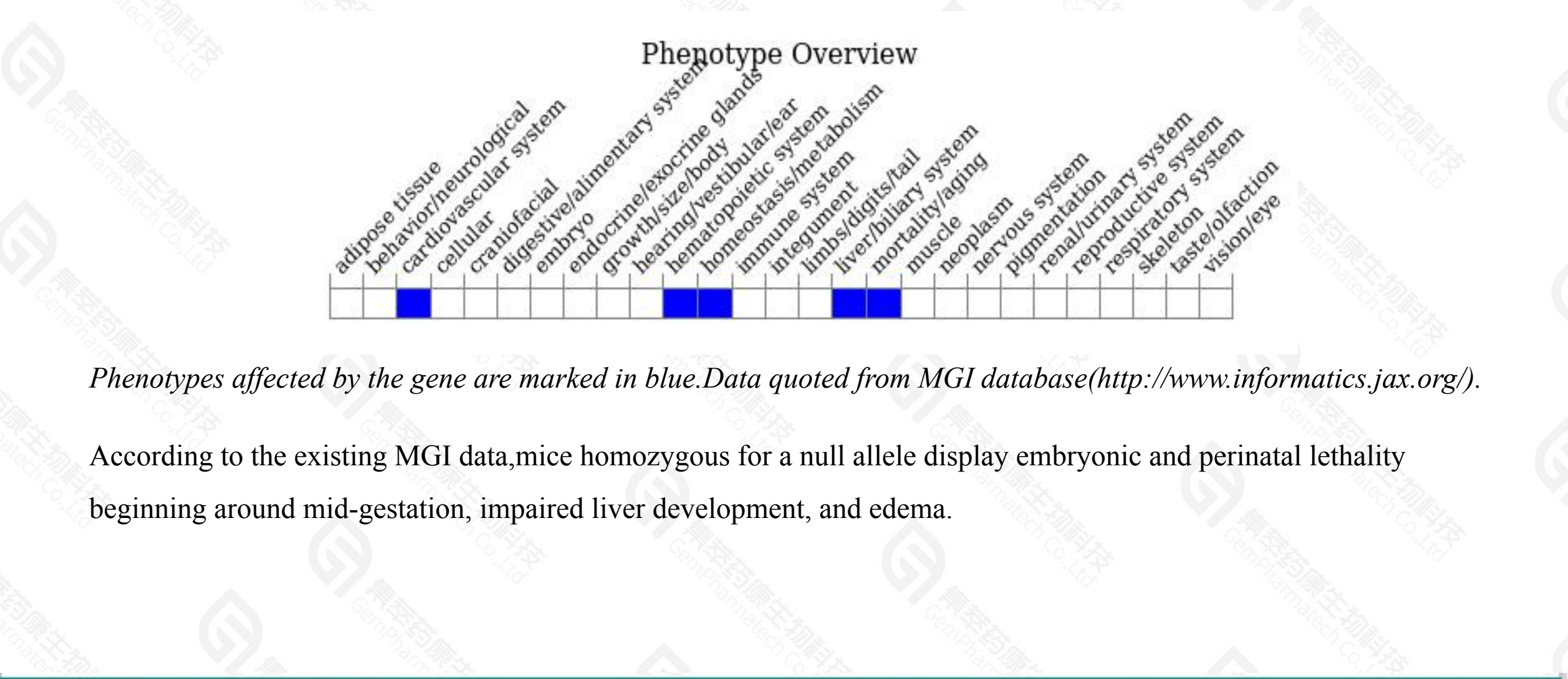
 synonymous variant

Scale bar

0 20 40 60 80 100 120 140 175



集萃药康
GemPharmatech



According to the existing MGI data, mice homozygous for a null allele display embryonic and perinatal lethality beginning around mid-gestation, impaired liver development, and edema.

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

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