Tnrc6b Cas9-KO Strategy

Designer: **Huan Wang**

Reviewer **Huan Fan**

Design Date: **2020-1-4**

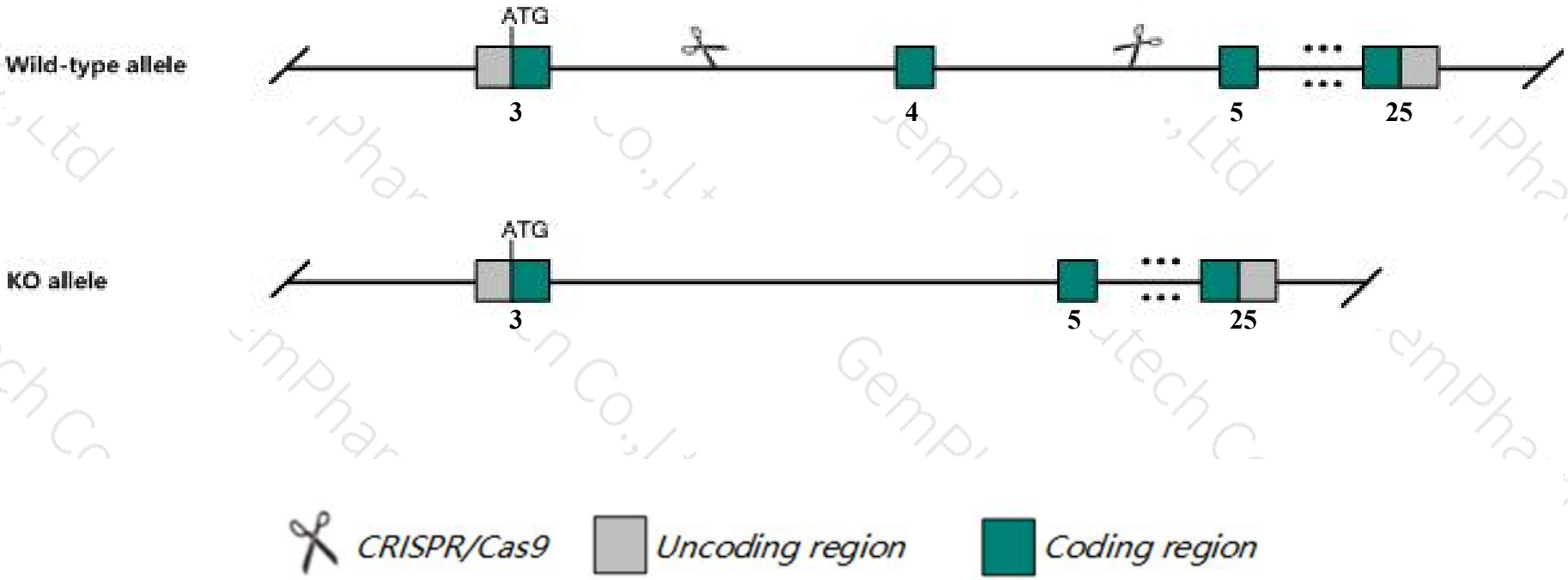
GemPharmatech Co.,Ltd

Project Overview

Project Name	***Tnrc6b***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tnrc6b* gene. The schematic diagram is as follows:



Technical routes

The *Tnrc6b* gene has 10 transcripts. According to the structure of *Tnrc6b* gene, exon4 of *Tnrc6b-201* (ENSMUST00000067689.8) transcript is recommended as the knockout region.The region contains 68bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Tnrc6b* gene. The brief process is as follows: CRISPR/Cas9 systen

Notice

According to the existing MGI data,Mice homozygous for a gene trap allele exhibit neonatal and postnatal lethality with decreased body weight and infertility.
Transcript *Tnrc6b -205,208* may not be affected.

The *Tnrc6b* gene is located on the Chr15. 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

Tnrc6b trinucleotide repeat containing 6b [Mus musculus (house mouse)]

Gene ID: 213988, updated on 31-Jan-2019

Summary

Official Symbol	Tnrc6b provided by MGI
Official Full Name	trinucleotide repeat containing 6b provided by MGI
Primary source	MGI:MGI:2443730
See related	Ensembl:ENSMUSG00000047888
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	2700090M07Rik, A730065C02Rik, AI848765, D230019K20Rik
Expression	Ubiquitous expression in thymus adult (RPKM 7.8), cerebellum adult (RPKM 5.1) and 28 other tissues See more
Orthologs	human all

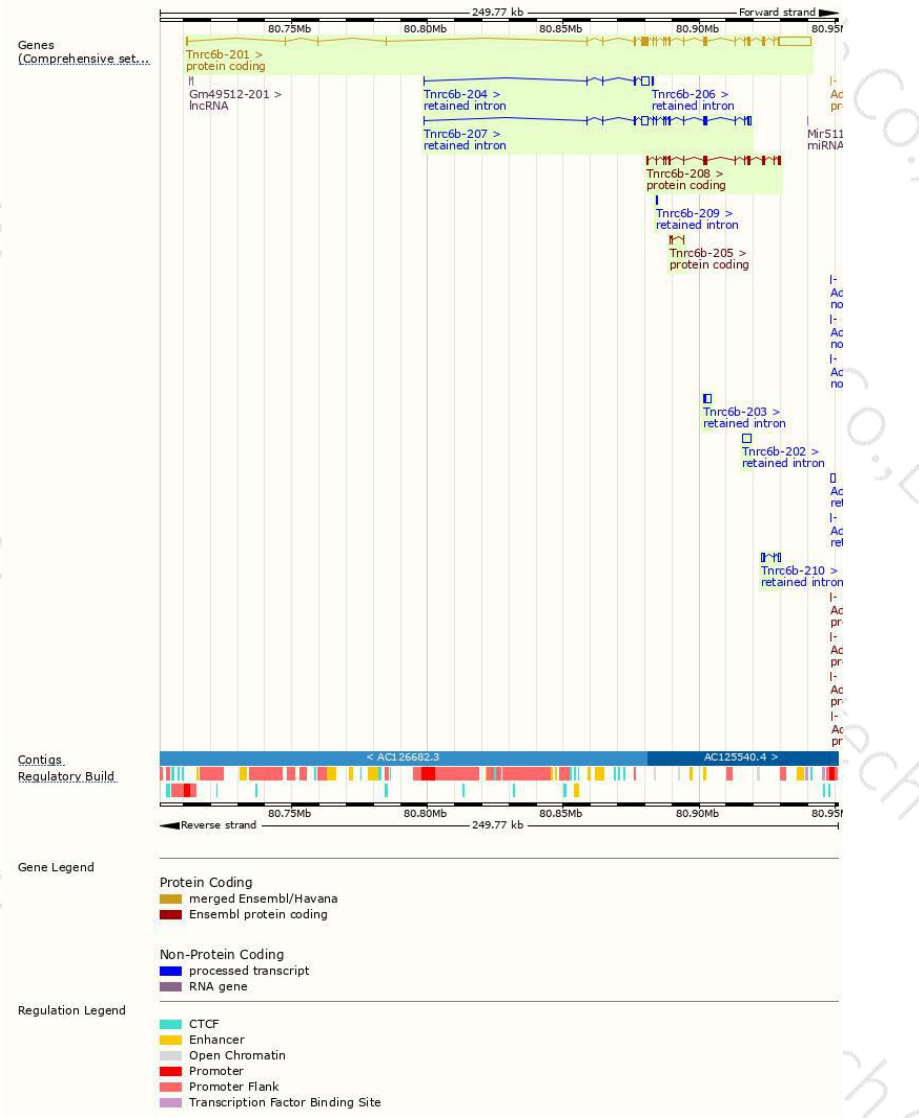
Transcript information Ensembl

The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tnrc6b-201	ENSMUST00000067689.8	17332	1810aa	Protein coding	CCDS37146	Q8BKI2	TSL:5 GENCODE basic APPRIS P1
Tnrc6b-208	ENSMUST00000228124.1	3407	958aa	Protein coding	-	A0A2I3BRG1	CDS 5' incomplete
Tnrc6b-205	ENSMUST00000227449.1	183	61aa	Protein coding	-	A0A2I3BPE5	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete
Tnrc6b-207	ENSMUST00000228071.1	5215	No protein	Retained intron	-	-	
Tnrc6b-202	ENSMUST00000226442.1	3302	No protein	Retained intron	-	-	
Tnrc6b-204	ENSMUST00000226857.1	3240	No protein	Retained intron	-	-	
Tnrc6b-203	ENSMUST00000226461.1	2053	No protein	Retained intron	-	-	
Tnrc6b-210	ENSMUST00000228525.1	1774	No protein	Retained intron	-	-	
Tnrc6b-206	ENSMUST00000227546.1	620	No protein	Retained intron	-	-	
Tnrc6b-209	ENSMUST00000228320.1	376	No protein	Retained intron	-	-	

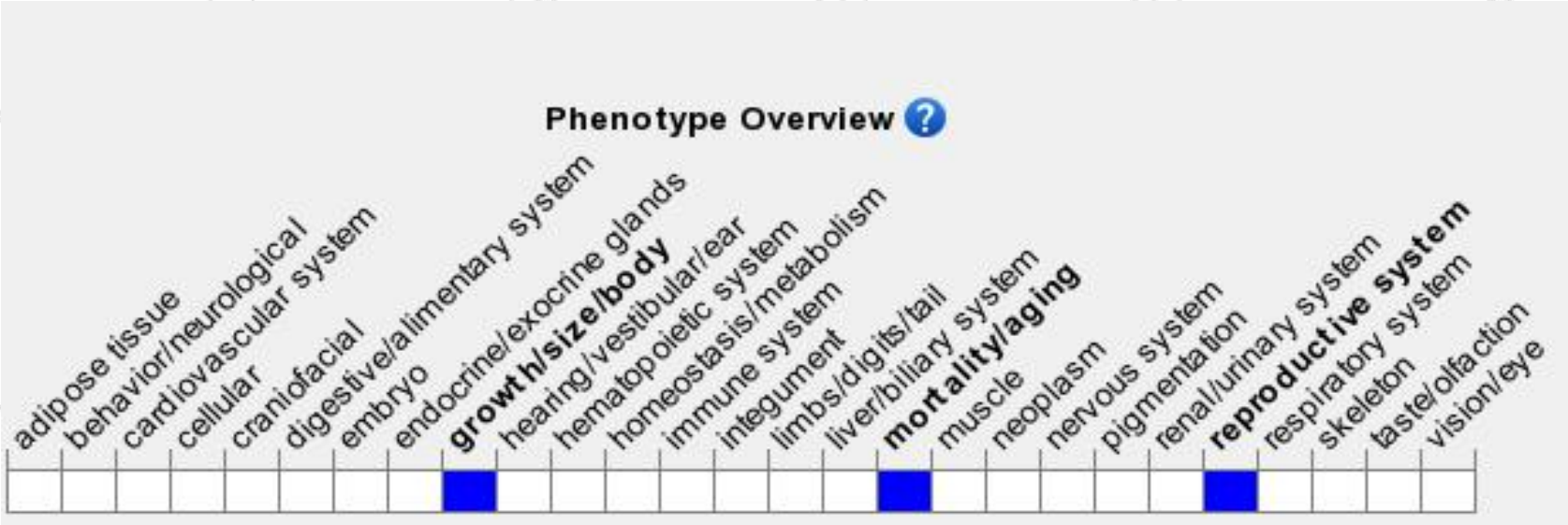
The strategy is based on the design of *Tnrc6b-201* transcript,The transcription is shown below

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 gene trap allele exhibit neonatal and postnatal lethality with decreased body weight and infertility.

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

GemPharmatech Co.,Ltd