

***Ttc7b* Cas9-KO Strategy**

Designer: Jia Yu

Reviewer: Xiaojing Li

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Project Overview

Project Name

Ttc7b

Project type

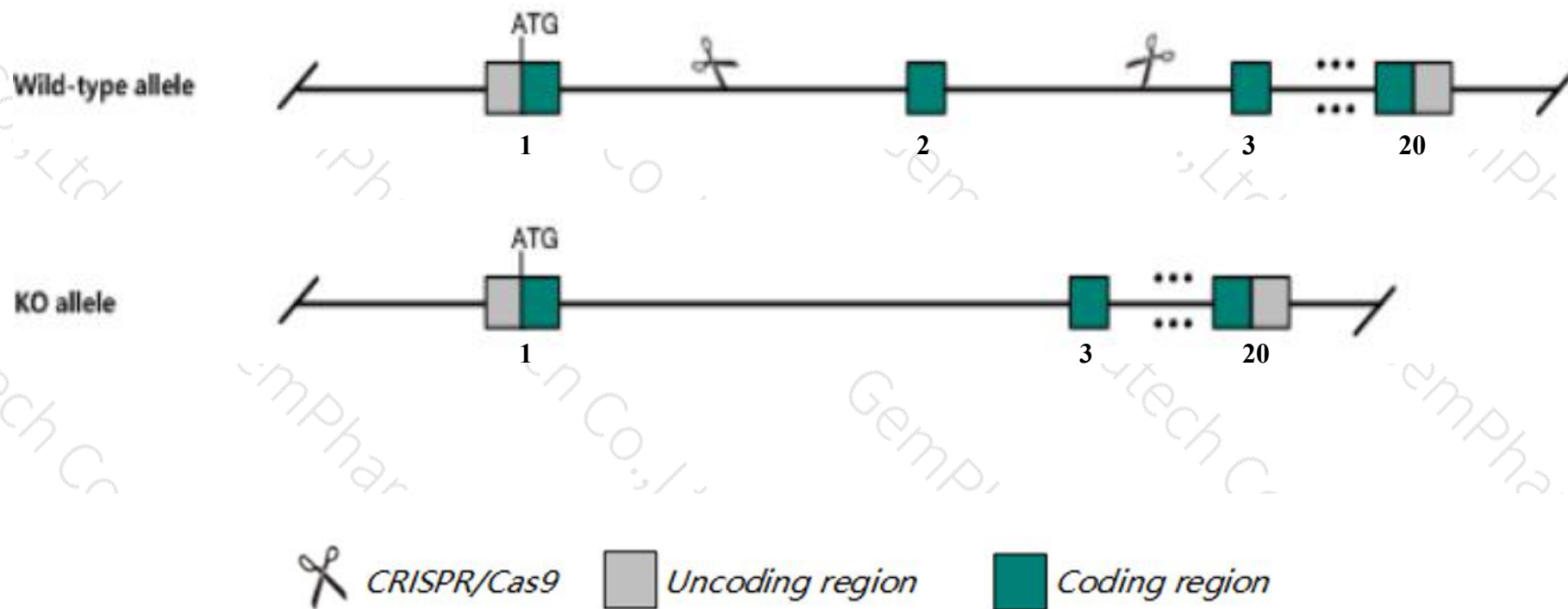
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ttc7b* gene. The schematic diagram is as follows:



- The *Ttc7b* gene has 10 transcripts. According to the structure of *Ttc7b* gene, exon2 of *Ttc7b*-201(ENSMUST00000062957.7) transcript is recommended as the knockout region. The region contains 155bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ttc7b* 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.

- The *Ttc7b* 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.
- Transcript 207 CDS 5' incomplete the influences is unknown.
- 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)

Ttc7b tetratricopeptide repeat domain 7B [Mus musculus (house mouse)]

Gene ID: 104718, updated on 13-Mar-2020

Summary



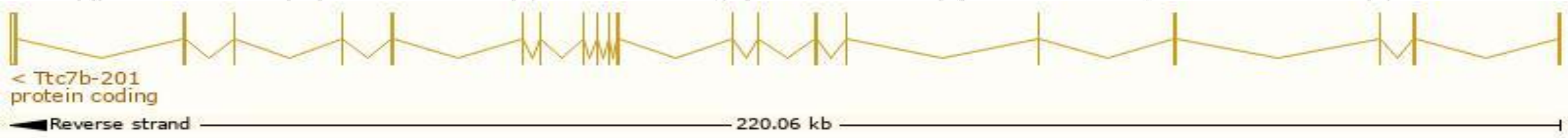
Official Symbol	Ttc7b provided by MGI
Official Full Name	tetratricopeptide repeat domain 7B provided by MGI
Primary source	MGI:MGI:2144724
See related	Ensembl:ENSMUSG00000033530
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AA408451, Ttc7l1
Expression	Broad expression in cortex adult (RPKM 38.4), frontal lobe adult (RPKM 33.6) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

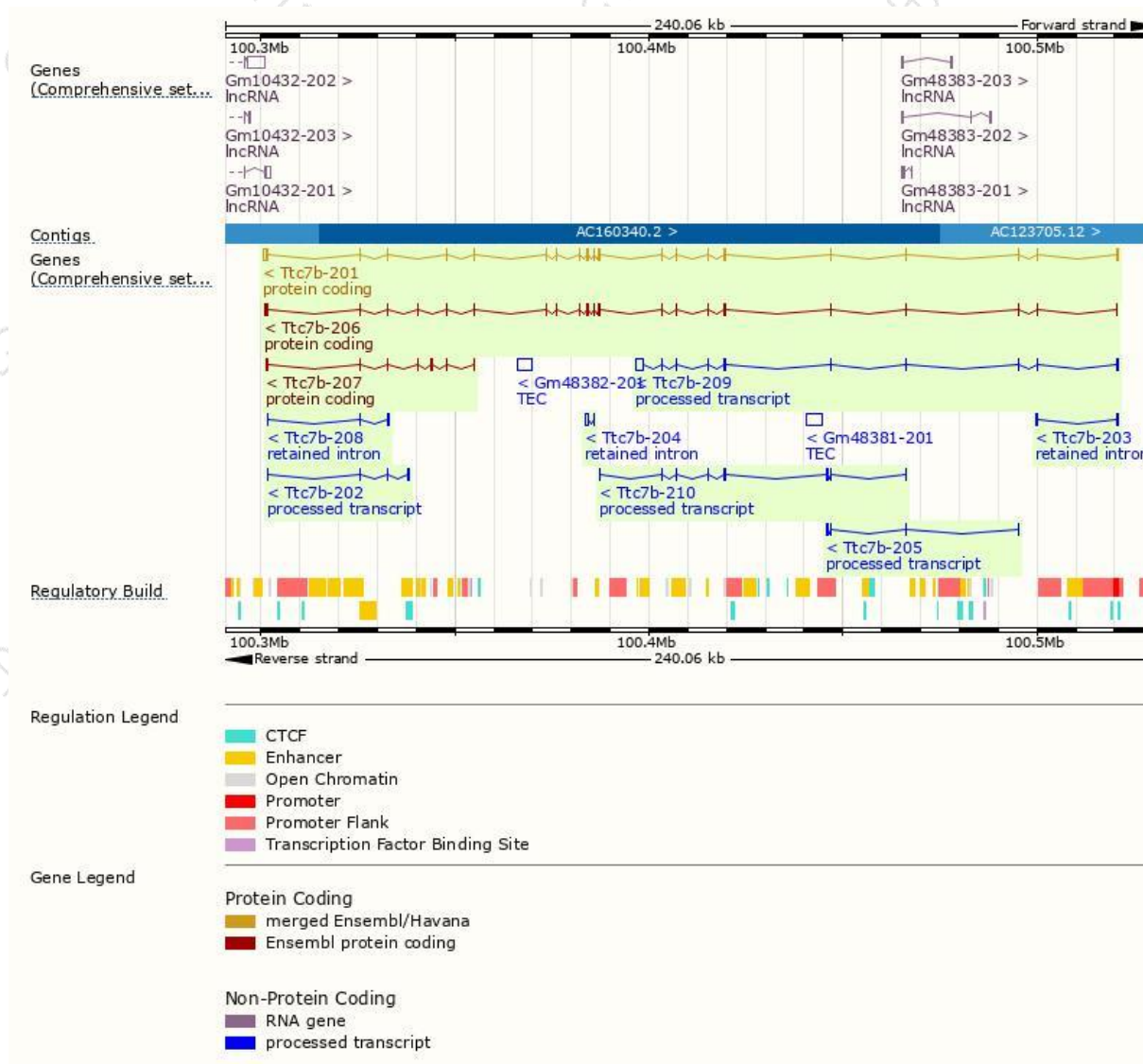
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ttc7b-201	ENSMUST00000062957.7	3446	843aa	Protein coding	CCDS49141	E9Q6P5	TSL:1 GENCODE basic APPRIS P2
Ttc7b-206	ENSMUST00000223020.1	3307	860aa	Protein coding	-	A0A1Y7VL44	TSL:5 GENCODE basic APPRIS ALT2
Ttc7b-207	ENSMUST00000223110.1	1296	329aa	Protein coding	-	A0A1Y7VLT4	CDS 5' incomplete TSL:5
Ttc7b-209	ENSMUST00000223444.1	3348	No protein	Processed transcript	-	-	TSL:1
Ttc7b-202	ENSMUST00000220480.1	808	No protein	Processed transcript	-	-	TSL:5
Ttc7b-210	ENSMUST00000223514.1	730	No protein	Processed transcript	-	-	TSL:5
Ttc7b-205	ENSMUST00000222036.1	613	No protein	Processed transcript	-	-	TSL:3
Ttc7b-208	ENSMUST00000223255.1	695	No protein	Retained intron	-	-	TSL:2
Ttc7b-203	ENSMUST00000220614.1	689	No protein	Retained intron	-	-	TSL:2
Ttc7b-204	ENSMUST00000221975.1	677	No protein	Retained intron	-	-	TSL:5

The strategy is based on the design of *Ttc7b-201* transcript,the transcription is shown below:



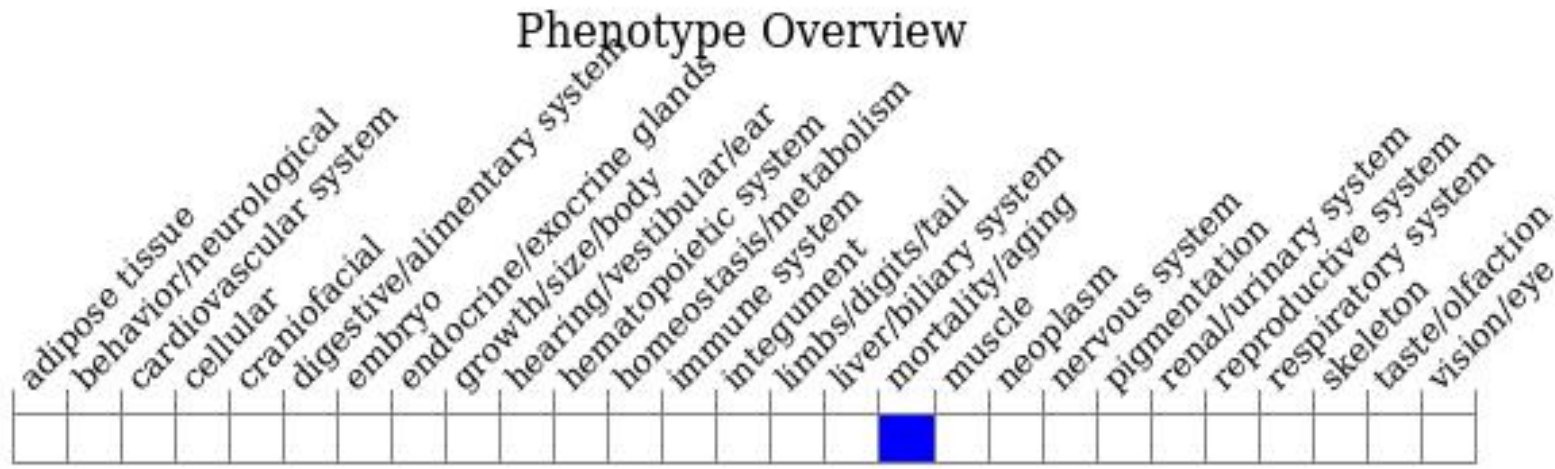
Genomic location distribution



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/>).

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

Tel: 400-9660890

