

Ttc28 Cas9-KO Strategy

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Project Overview



Project Name

Ttc28

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ttc28* gene. The schematic diagram is as follows:



➤ The *Ttc28* gene has 6 transcripts. According to the structure of *Ttc28* gene, exon3 of *Ttc28-206*(ENSMUST00000156290.8) transcript is recommended as the knockout region. The region contains 148bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Ttc28* 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 *Ttc28* gene is located on the Chr5. 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)

Ttc28 tetratricopeptide repeat domain 28 [Mus musculus (house mouse)]

Gene ID: 209683, updated on 13-Mar-2020

Summary



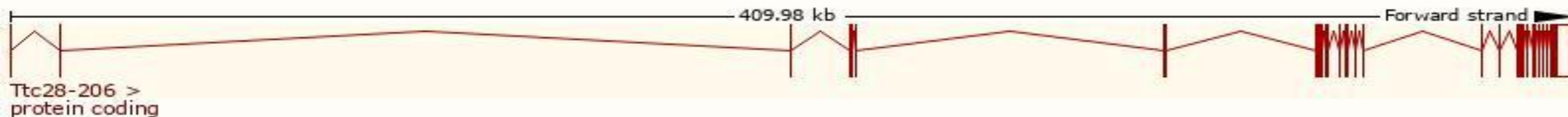
Official Symbol	Ttc28 provided by MGI
Official Full Name	tetratricopeptide repeat domain 28 provided by MGI
Primary source	MGI:MGI:2140873
See related	Ensembl:ENSMUSG00000033209
Gene type	protein coding
RefSeq status	INFERRED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310015L07Rik, 6030435N04, AI428795, AI851761, BC002262, TPRBK
Expression	Broad expression in whole brain E14.5 (RPKM 8.8), CNS E14 (RPKM 8.2) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

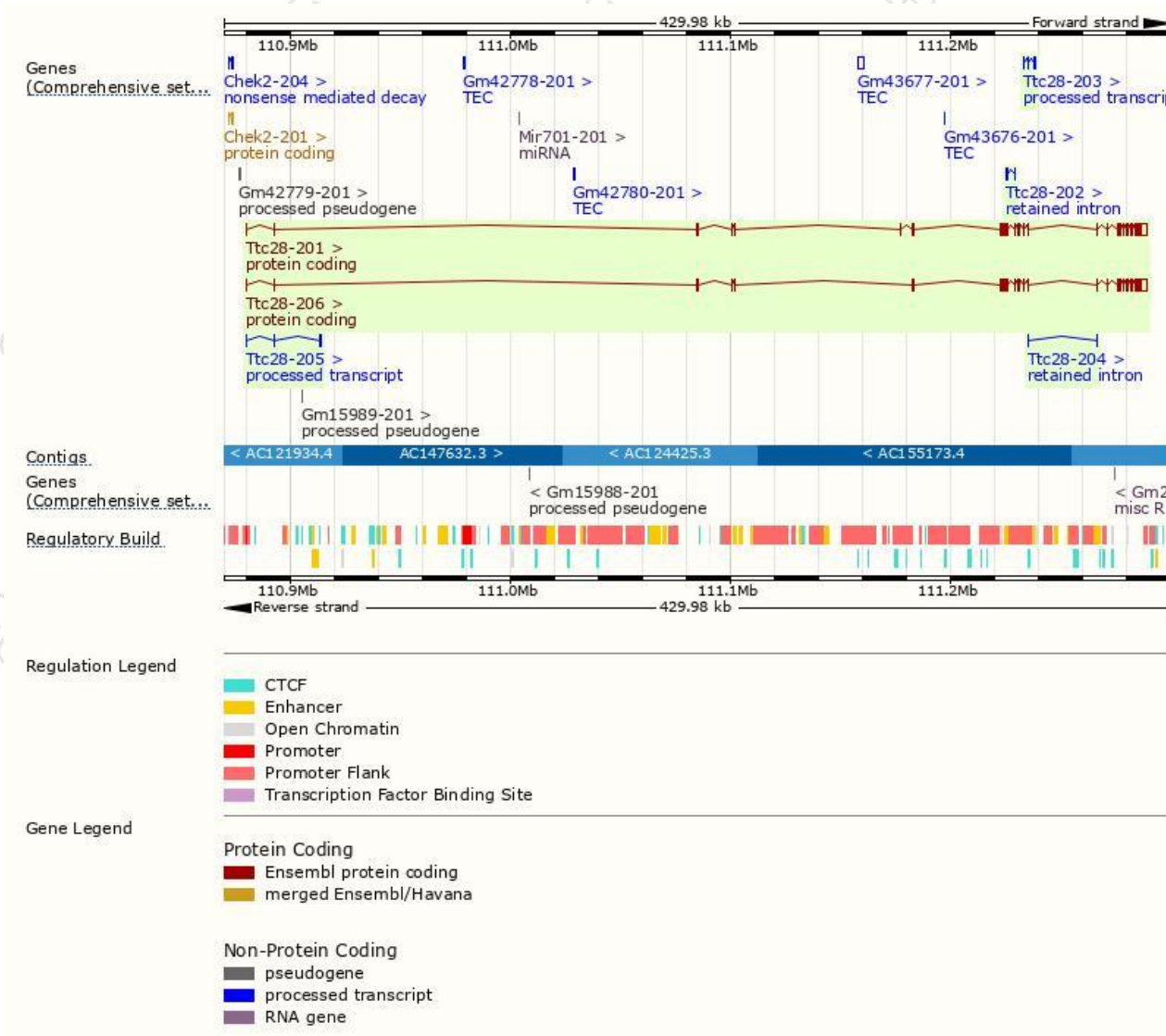
The gene has 6 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ttc28-206	ENSMUST00000156290.8	10688	2450aa	Protein coding	CCDS59682	Q80XJ3	TSL:5 GENCODE basic APPRIS P2
Ttc28-201	ENSMUST00000040111.9	10780	2481aa	Protein coding	-	A0A0A0MQN9	TSL:5 GENCODE basic APPRIS ALT2
Ttc28-205	ENSMUST00000143505.1	1557	No protein	Processed transcript	-	-	TSL:1
Ttc28-203	ENSMUST00000128584.1	405	No protein	Processed transcript	-	-	TSL:5
Ttc28-202	ENSMUST00000125470.1	692	No protein	Retained intron	-	-	TSL:3
Ttc28-204	ENSMUST00000129017.1	392	No protein	Retained intron	-	-	TSL:2

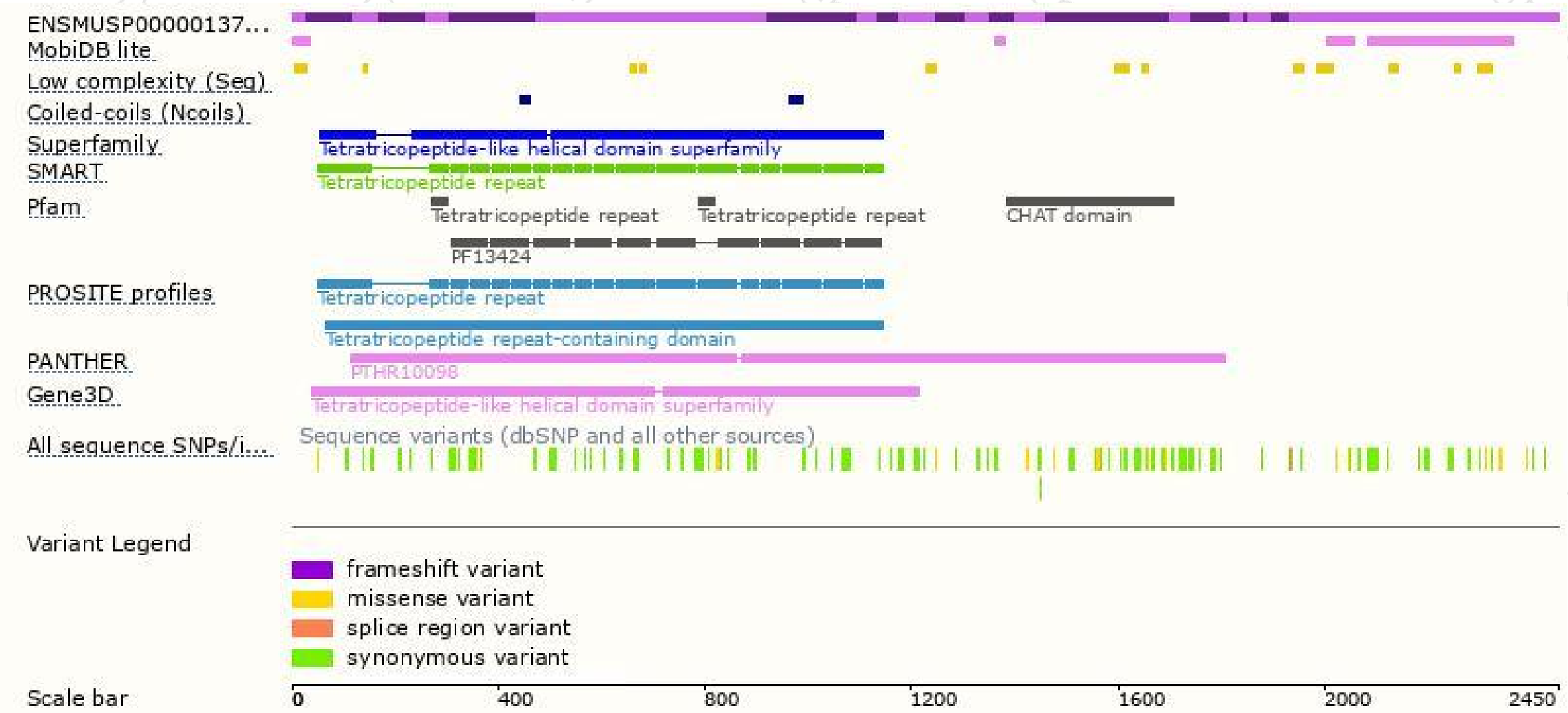
The strategy is based on the design of *Ttc28-206* transcript, the transcription is shown below:



Genomic location distribution

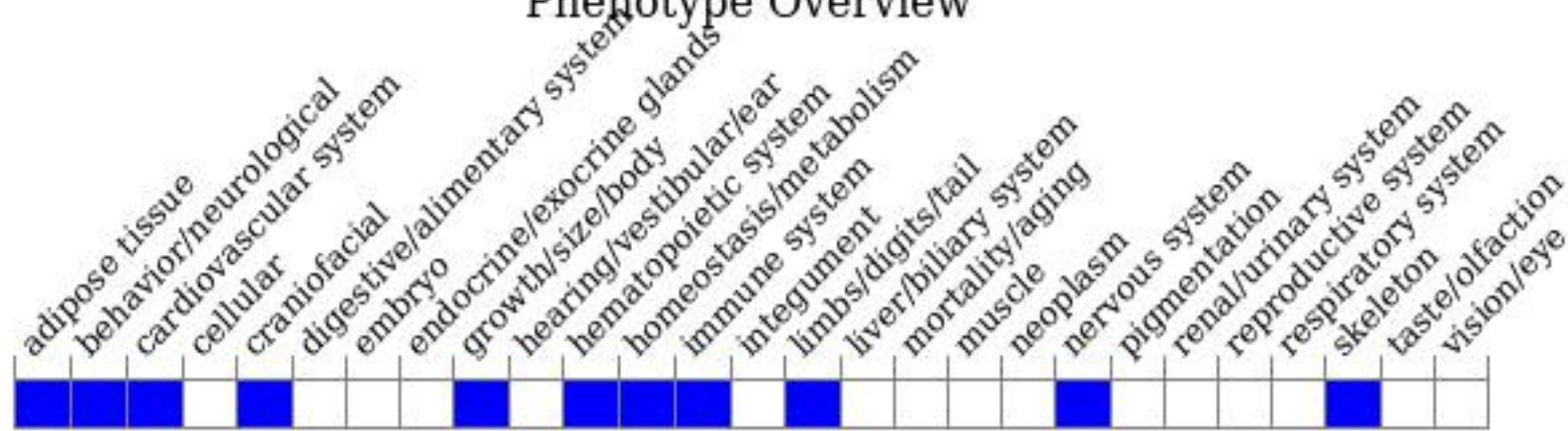


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview



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.

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