

***Trappc12* Cas9-CKO Strategy**

Designer: Jia Yu

Reviewer: Xiaojing Li

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Project Overview

Project Name

Trappc12

Project type

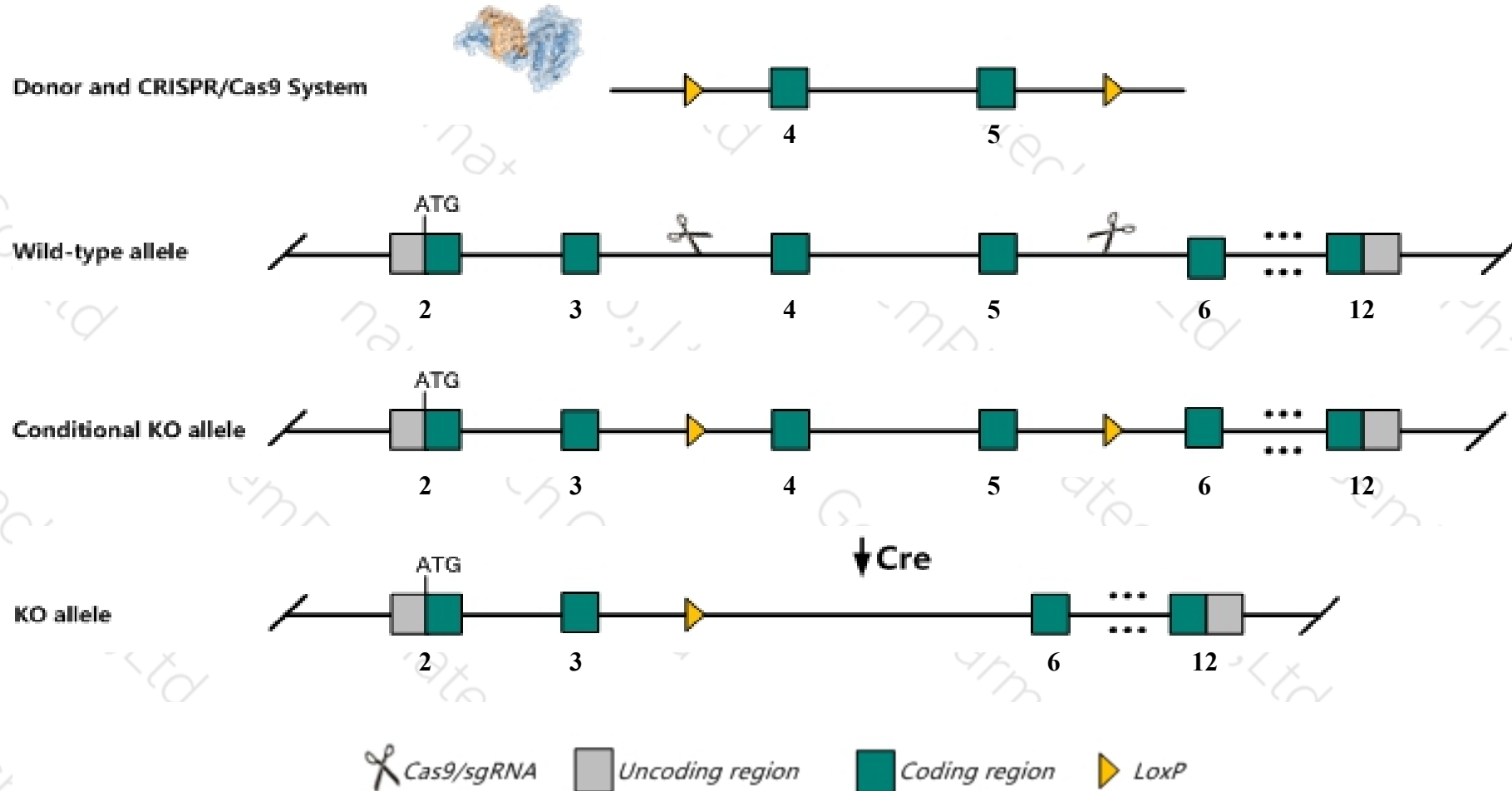
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trappc12* gene. The schematic diagram is as follows:



- The *Trappc12* gene has 7 transcripts. According to the structure of *Trappc12* gene, exon4-exon5 of *Trappc12-201*(ENSMUST00000020954.14) transcript is recommended as the knockout region. The region contains 253bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Trappc12* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor 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 flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Trappc12* 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.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Trappc12 trafficking protein particle complex 12 [Mus musculus (house mouse)]

Gene ID: 217449, updated on 13-Mar-2020

Summary



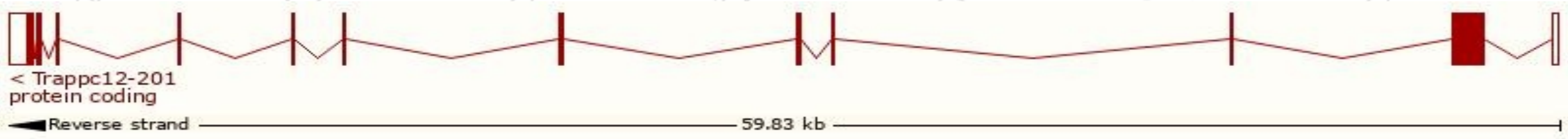
Official Symbol	Trappc12 provided by MGI
Official Full Name	trafficking protein particle complex 12 provided by MGI
Primary source	MGI:MGI:2445089
See related	Ensembl:ENSMUSG00000020628
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CGI-87, D930014A20Rik, Ttc15
Expression	Ubiquitous expression in frontal lobe adult (RPKM 7.2), bladder adult (RPKM 7.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

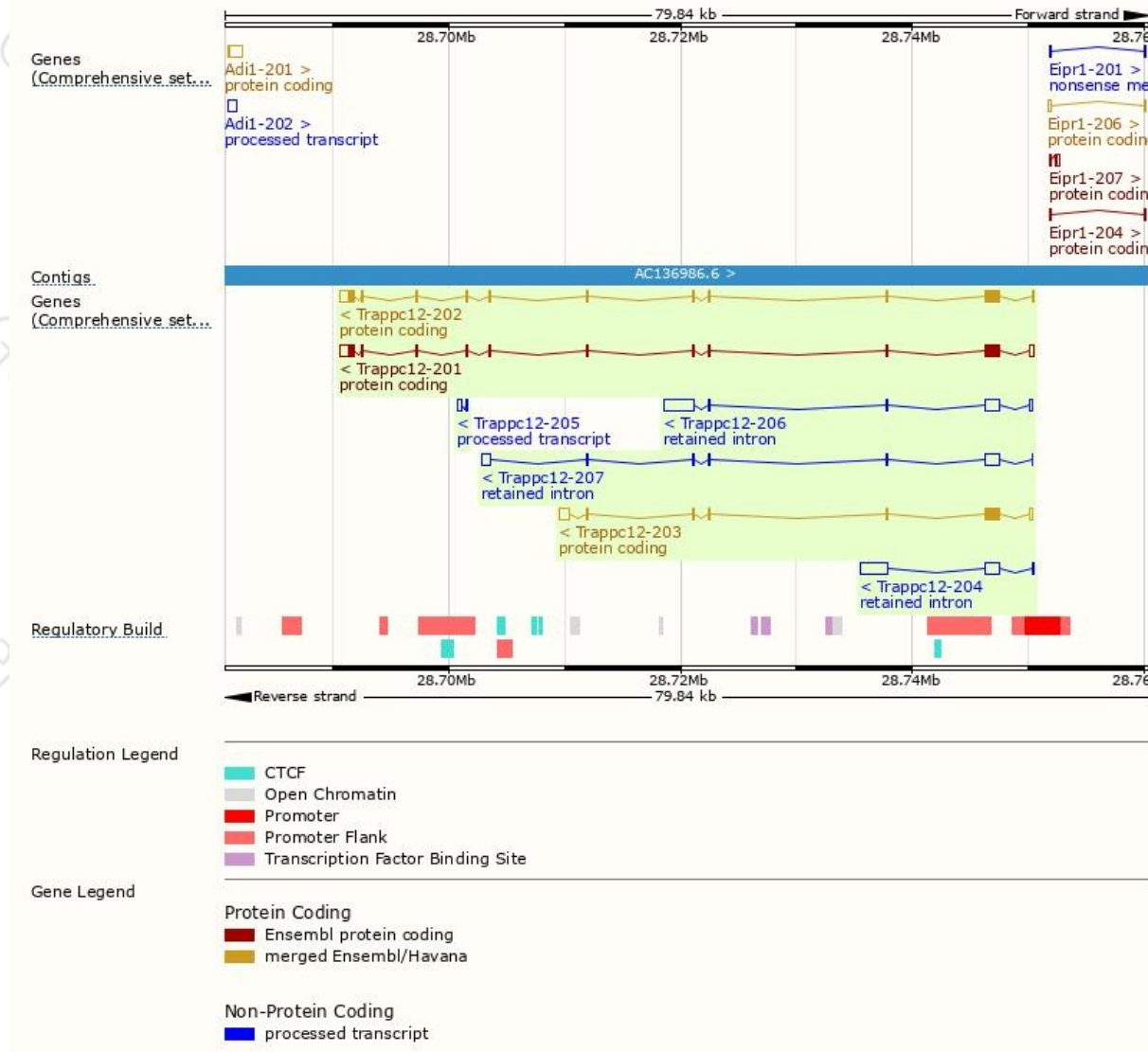
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trappc12-201	ENSMUST00000020954.14	3377	797aa	Protein coding	CCDS25854	Q8K2L8	TSL:1 GENCODE basic APPRIS P1
Trappc12-202	ENSMUST00000168129.9	3230	797aa	Protein coding	CCDS25854	Q8K2L8	TSL:1 GENCODE basic APPRIS P1
Trappc12-203	ENSMUST00000170994.2	2818	580aa	Protein coding	CCDS49040	Q8C0C3	TSL:1 GENCODE basic
Trappc12-205	ENSMUST00000221783.1	437	No protein	Processed transcript	-	-	TSL:2
Trappc12-206	ENSMUST00000223447.1	4264	No protein	Retained intron	-	-	TSL:1
Trappc12-204	ENSMUST00000221335.1	3718	No protein	Retained intron	-	-	TSL:1
Trappc12-207	ENSMUST00000223552.1	2614	No protein	Retained intron	-	-	TSL:1

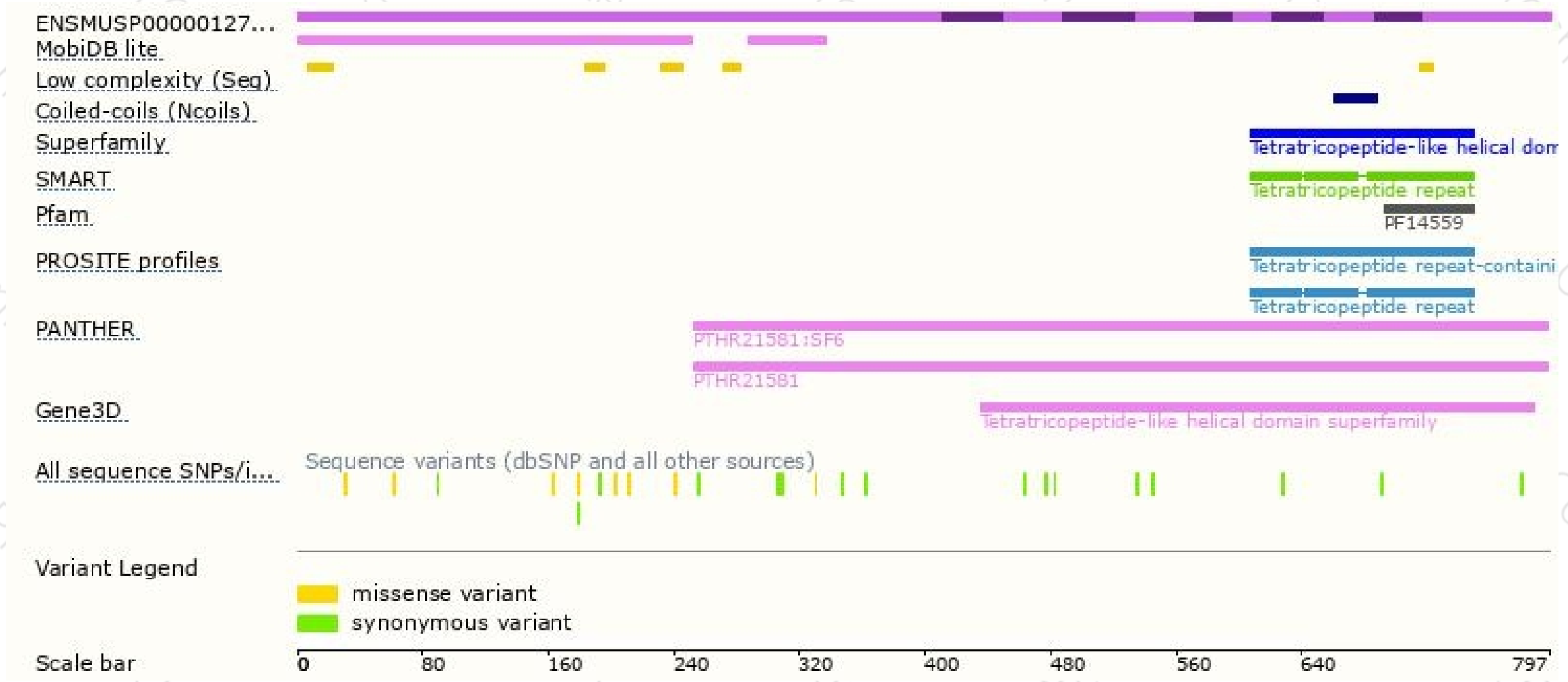
The strategy is based on the design of *Trappc12-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

