

Traip Cas9-CKO Strategy

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Project Overview

Project Name

Traip

Project type

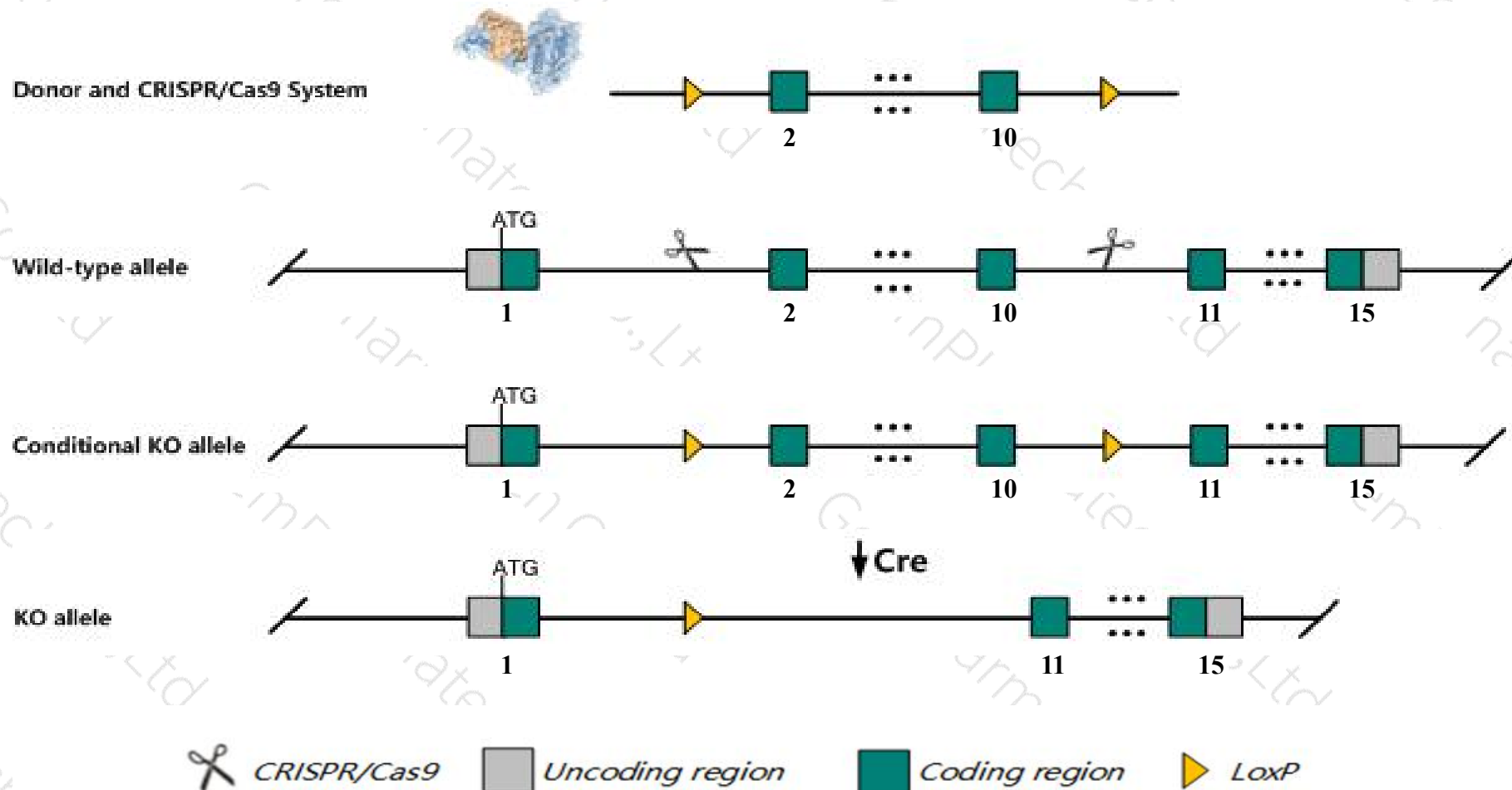
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Traip* gene has 7 transcripts. According to the structure of *Traip* gene, exon2-exon10 of *Traip*-201 (ENSMUST00000049348.8) transcript is recommended as the knockout region. The region contains 786bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Traip* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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.

- According to the existing MGI data, Mice homozygous for a null allele exhibit embryonic lethality at prior to E8.5, embryonic growth retardation, decreased embryonic size, decreased cell proliferation and increased apoptosis.
- The *Traip* gene is located on the Chr9. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Traip TRAF-interacting protein [Mus musculus (house mouse)]

Gene ID: 22036, updated on 5-Feb-2019

Summary



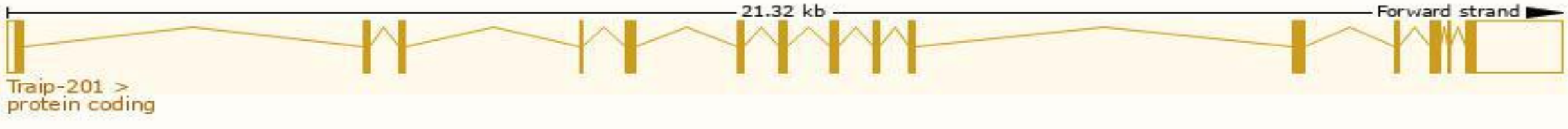
Official Symbol	Traip provided by MGI
Official Full Name	TRAF-interacting protein provided by MGI
Primary source	MGI:MGI:1096377
See related	Ensembl:ENSMUSG00000032586
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Trip
Expression	Broad expression in CNS E11.5 (RPKM 3.7), frontal lobe adult (RPKM 3.7) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

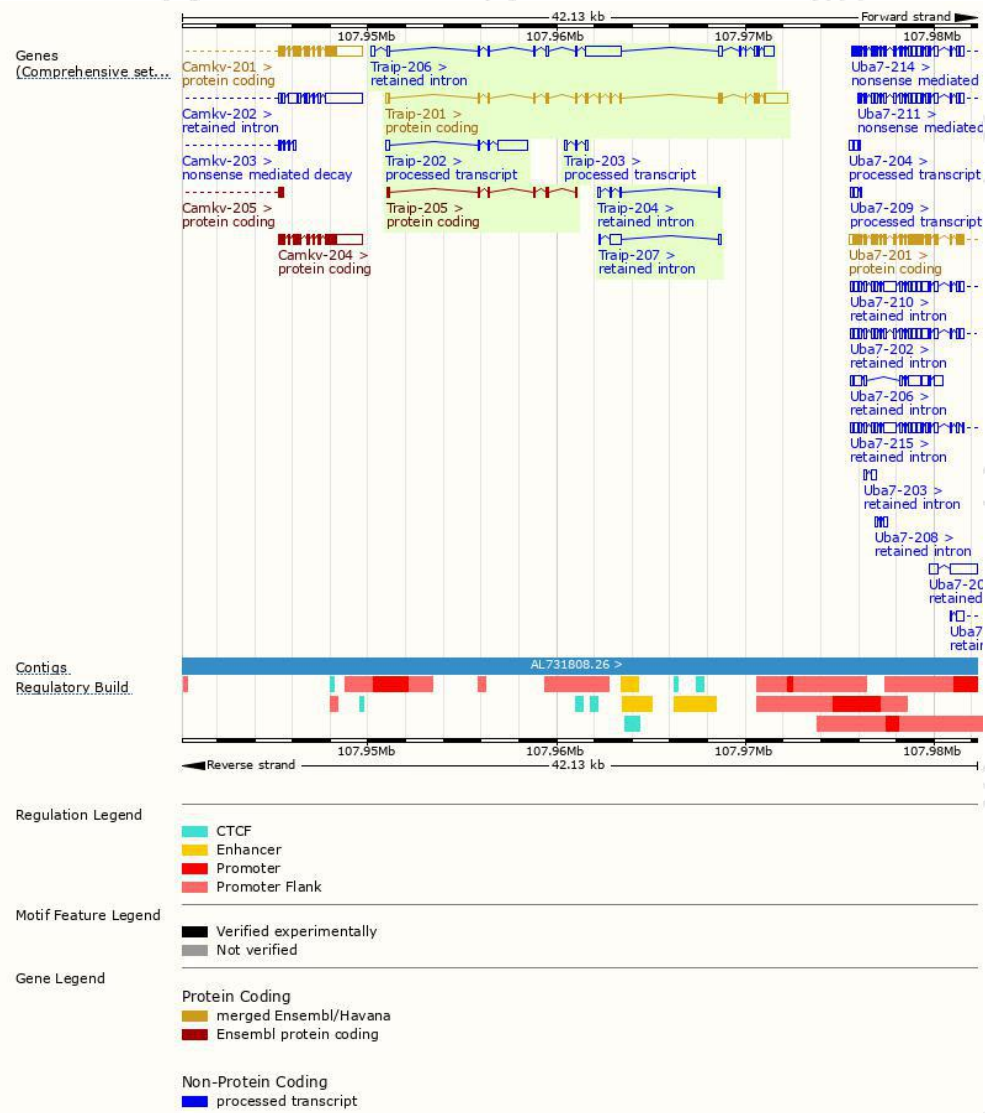
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Traip-201	ENSMUST00000049348.8	2706	470aa	Protein coding	CCDS23511	Q8VIG6	TSL:1 GENCODE basic APPRIS P1
Traip-205	ENSMUST00000194271.1	515	142aa	Protein coding	-	A0A0A6YWT5	CDS 3' incomplete TSL:5
Traip-202	ENSMUST00000192567.1	1949	No protein	Processed transcript	-	-	TSL:1
Traip-203	ENSMUST00000193715.1	383	No protein	Processed transcript	-	-	TSL:3
Traip-206	ENSMUST00000194538.5	3680	No protein	Retained intron	-	-	TSL:2
Traip-207	ENSMUST00000195803.1	844	No protein	Retained intron	-	-	TSL:3
Traip-204	ENSMUST00000194191.1	400	No protein	Retained intron	-	-	TSL:3

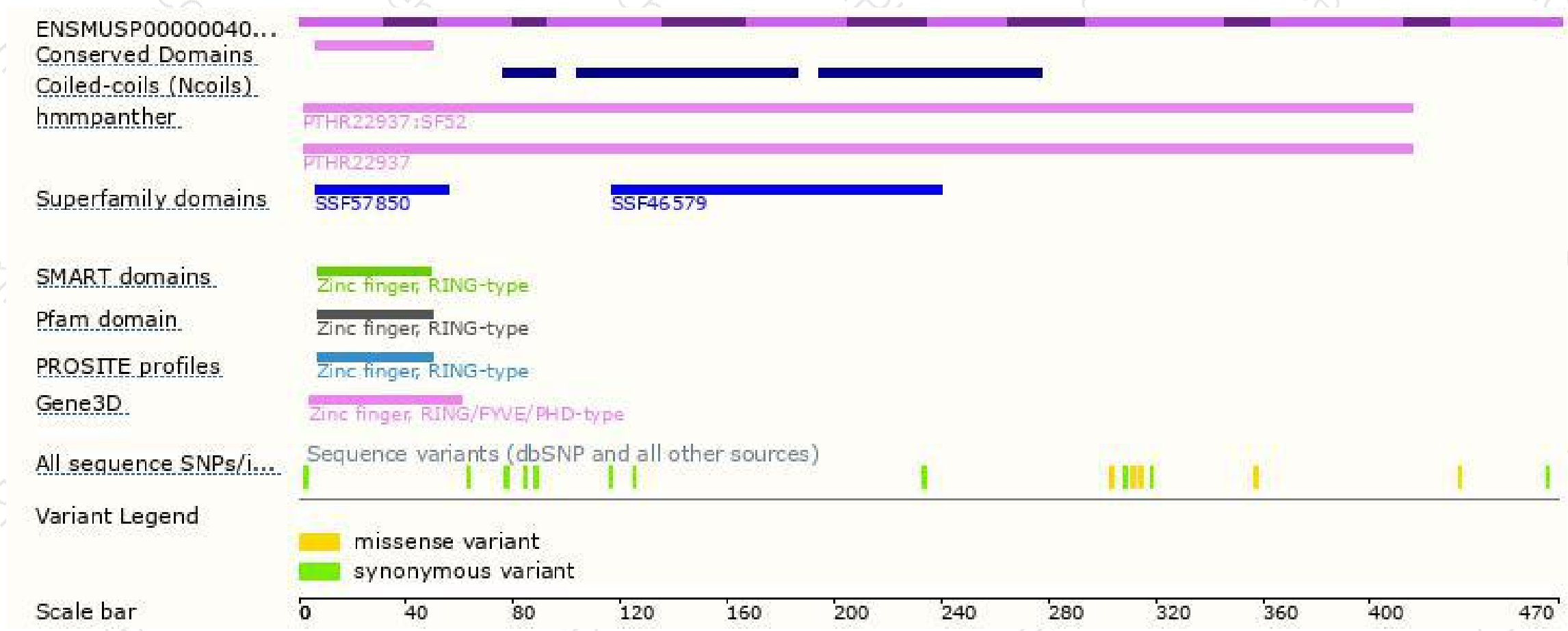
The strategy is based on the design of *Traip-201* transcript,The transcription is shown below



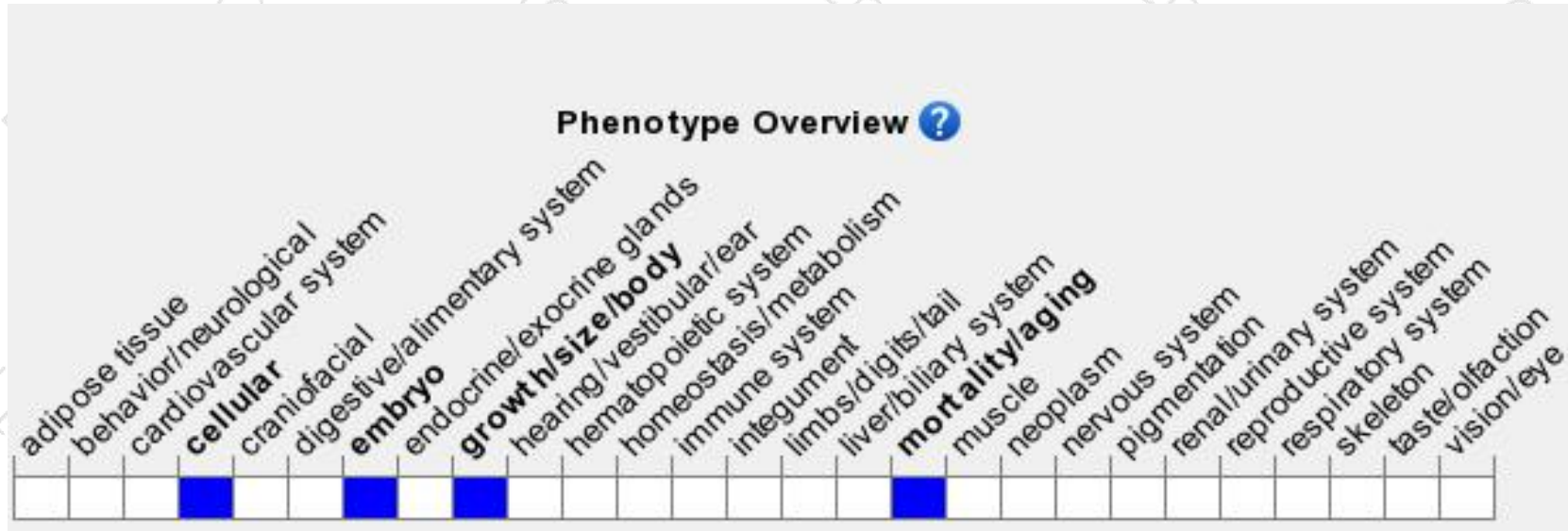
Genomic location distribution



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 null allele exhibit embryonic lethality at prior to E8.5, embryonic growth retardation, decreased embryonic size, decreased cell proliferation and increased apoptosis.

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

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