

***Traf7* Cas9-CKO Strategy**

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Project Overview

Project Name

Traf7

Project type

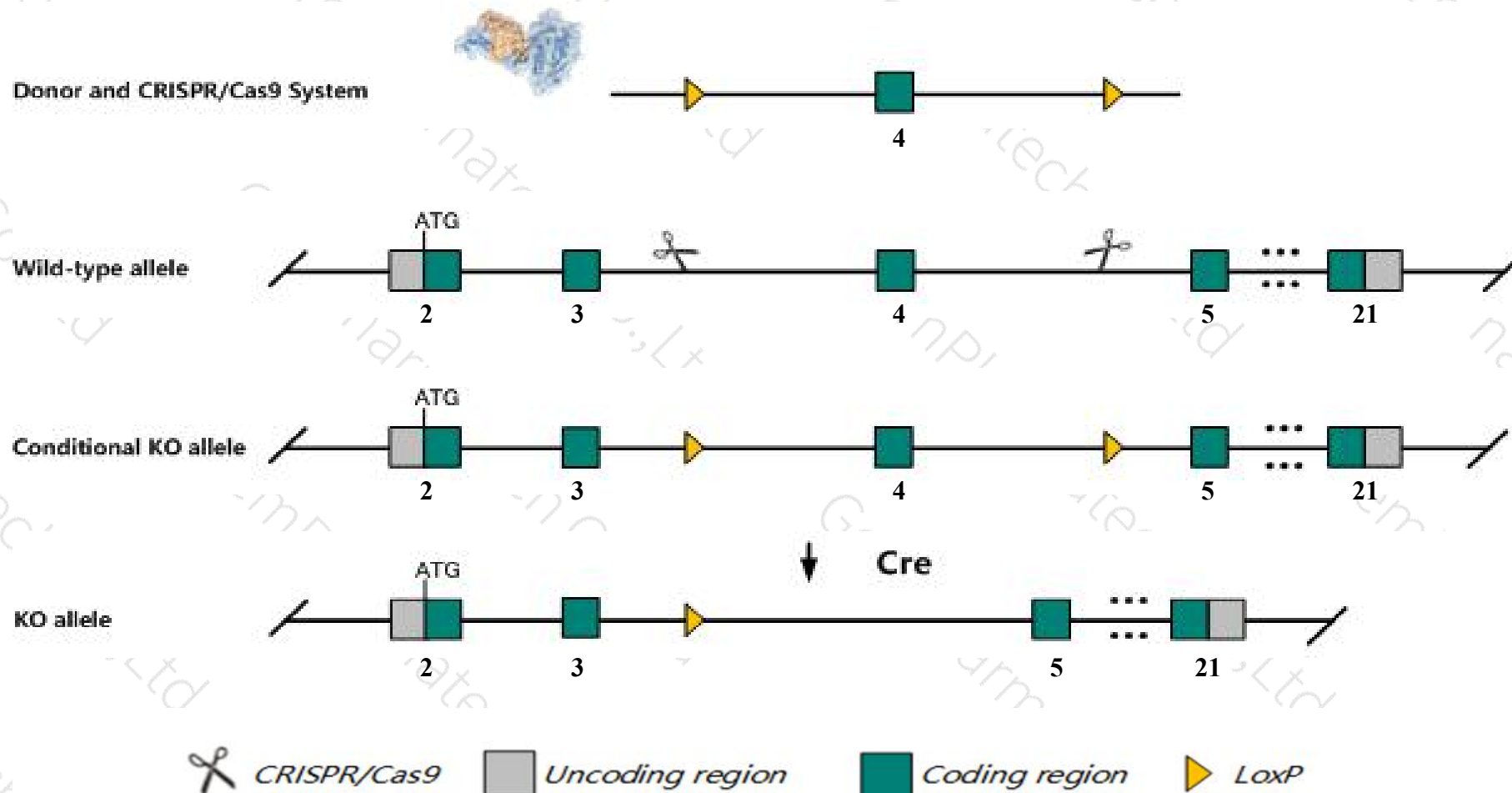
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Traf7* gene. The schematic diagram is as follows:



- The *Traf7* gene has 26 transcripts. According to the structure of *Traf7* gene, exon4 of *Traf7*-215 (ENSMUST00000176652.7) transcript is recommended as the knockout region. The region contains 92bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Traf7* 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.

Notice

- The *Traf7* gene is located on the Chr17. 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)

Traf7 TNF receptor-associated factor 7 [Mus musculus (house mouse)]

Gene ID: 224619, updated on 31-Jan-2019

Summary



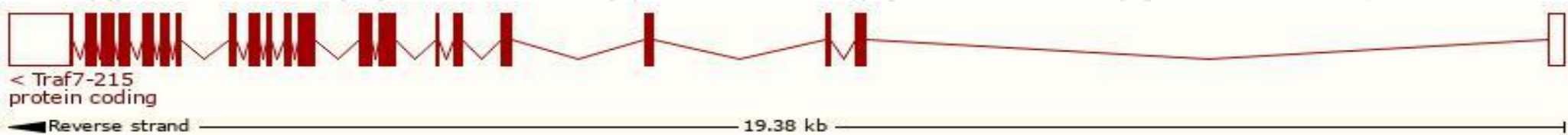
Official Symbol	Traf7 provided by MGI
Official Full Name	TNF receptor-associated factor 7 provided by MGI
Primary source	MGI:MGI:3042141
See related	Ensembl:ENSMUSG00000052752
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	RFWD1
Expression	Ubiquitous expression in ovary adult (RPKM 69.0), lung adult (RPKM 60.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

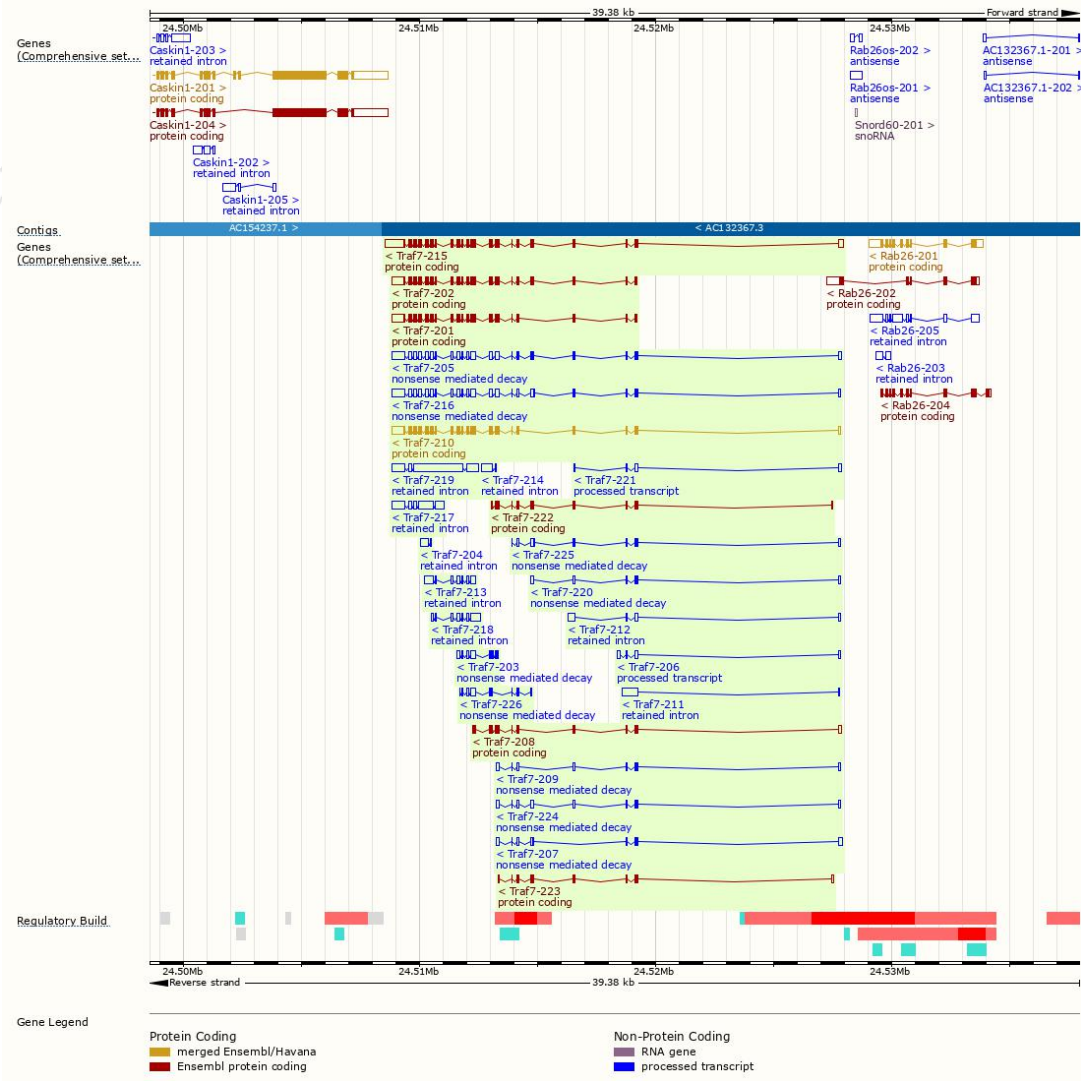
The gene has 26 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Traf7-215	ENSMUST00000176652.7	3003	669aa	Protein coding	CCDS50014	FRWJF7	TSL5 GENCODE basic APPRIS P1
Traf7-202	ENSMUST00000088464.1.1	2504	669aa	Protein coding	CCDS50014	FRWJF7	TSL5 GENCODE basic APPRIS P1
Traf7-210	ENSMUST00000176353.7	2503	629aa	Protein coding	CCDS50015	Q8C2K8	TSL1 GENCODE basic
Traf7-201	ENSMUST00000070777.12	2384	629aa	Protein coding	CCDS50015	Q8C2K8	TSL5 GENCODE basic
Traf7-208	ENSMUST00000176237.7	950	271aa	Protein coding	-	H3BJD9	CDS 3' incomplete TSL5
Traf7-222	ENSMUST00000177154.7	758	228aa	Protein coding	-	H3BLQ3	CDS 3' incomplete TSL5
Traf7-223	ENSMUST00000177193.7	644	170aa	Protein coding	-	H3BK82	CDS 3' incomplete TSL3
Traf7-205	ENSMUST00000176086.7	2687	132aa	Nonsense mediated decay	-	H3BLM8	TSL1
Traf7-216	ENSMUST00000176668.7	2667	81aa	Nonsense mediated decay	-	H3BKZ1	TSL1
Traf7-203	ENSMUST00000175698.7	755	84aa	Nonsense mediated decay	-	H3BKN1	CDS 5' incomplete TSL3
Traf7-224	ENSMUST00000177401.7	699	45aa	Nonsense mediated decay	-	H3BKC9	TSL2
Traf7-207	ENSMUST00000176178.7	680	54aa	Nonsense mediated decay	-	H3BJ15	TSL3
Traf7-226	ENSMUST00000177502.7	641	76aa	Nonsense mediated decay	-	H3BJF9	CDS 5' incomplete TSL3
Traf7-225	ENSMUST00000177405.7	606	80aa	Nonsense mediated decay	-	H3BJU4	TSL3
Traf7-209	ENSMUST00000176324.7	604	44aa	Nonsense mediated decay	-	H3BKC7	TSL3
Traf7-220	ENSMUST00000177025.1	428	44aa	Nonsense mediated decay	-	H3BKC7	TSL3
Traf7-206	ENSMUST00000176092.1	382	No protein	Processed transcript	-	-	TSL3
Traf7-221	ENSMUST00000177139.7	332	No protein	Processed transcript	-	-	TSL3
Traf7-219	ENSMUST00000177024.7	3194	No protein	Retained intron	-	-	TSL1
Traf7-217	ENSMUST00000176805.1	1749	No protein	Retained intron	-	-	TSL5
Traf7-213	ENSMUST00000176530.7	938	No protein	Retained intron	-	-	TSL3
Traf7-218	ENSMUST00000176900.7	861	No protein	Retained intron	-	-	TSL3
Traf7-211	ENSMUST00000176361.1	693	No protein	Retained intron	-	-	TSL3
Traf7-212	ENSMUST00000176434.7	559	No protein	Retained intron	-	-	TSL2
Traf7-214	ENSMUST00000176633.1	500	No protein	Retained intron	-	-	TSL2
Traf7-204	ENSMUST00000175732.1	366	No protein	Retained intron	-	-	TSL1

The strategy is based on the design of *Traf7-215* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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