

Thrap3 Cas9-CKO Strategy

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Design Date:

2020-1-15

Project Overview

Project Name

Thrap3

Project type

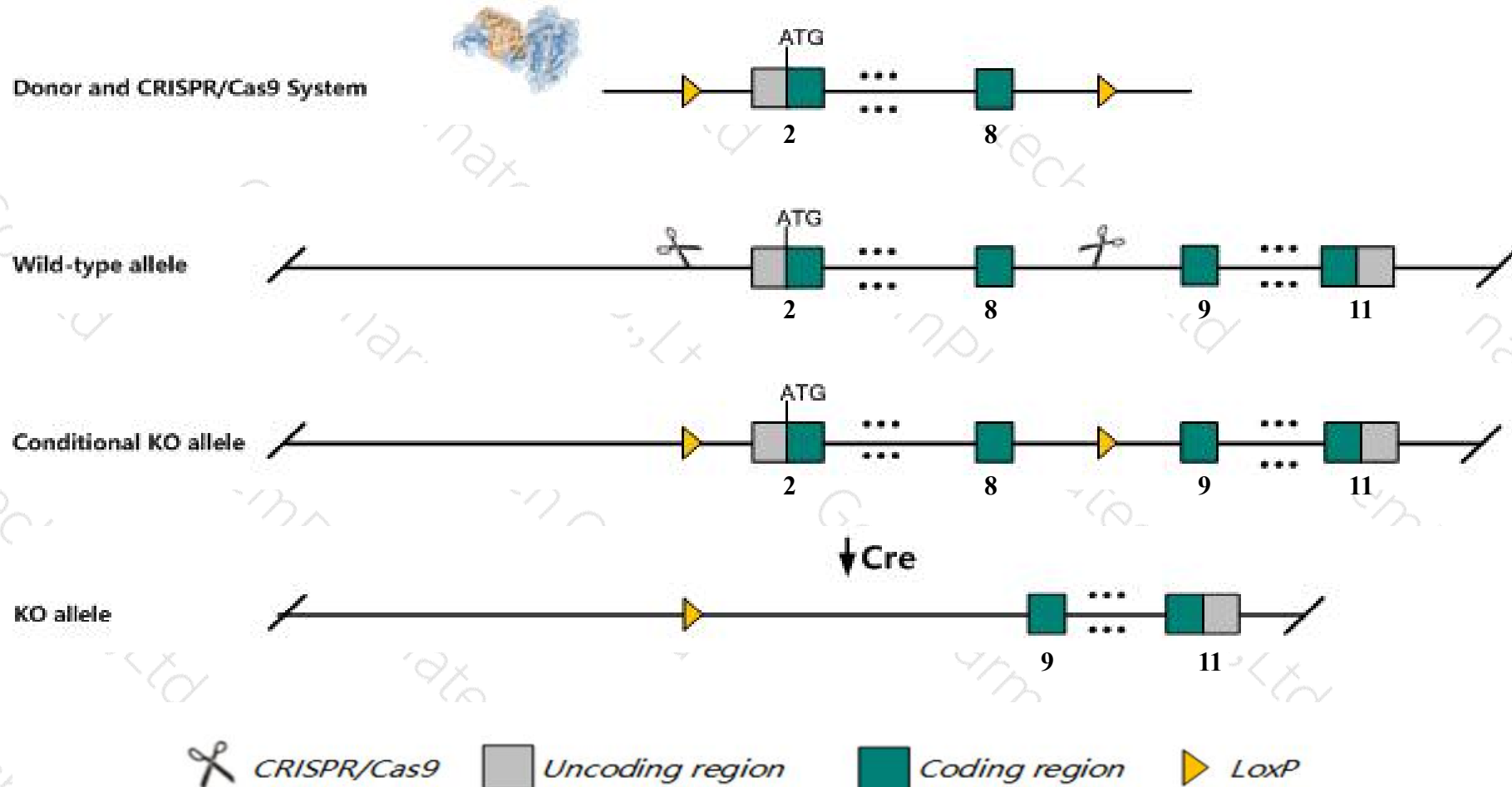
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Thrap3* gene. The schematic diagram is as follows:



Technical routes

- The *Thrap3* gene has 18 transcripts. According to the structure of *Thrap3* gene, exon2-exon8 of *Thrap3-201* (ENSMUST00000080919.11) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Thrap3* 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 *Thrap3* gene is located on the Chr4. 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)

Thrap3 thyroid hormone receptor associated protein 3 [Mus musculus (house mouse)]

Gene ID: 230753, updated on 3-Feb-2019

Summary



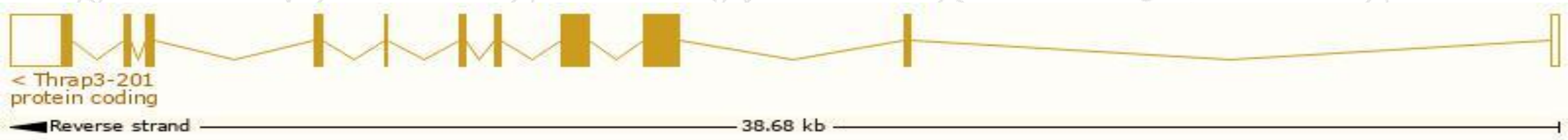
Official Symbol	Thrap3 provided by MGI
Official Full Name	thyroid hormone receptor associated protein 3 provided by MGI
Primary source	MGI:MGI:2442637
See related	Ensembl:ENSMUSG00000043962
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9330151F09Rik, B230333E16Rik, Trap150
Expression	Ubiquitous expression in CNS E11.5 (RPKM 45.1), limb E14.5 (RPKM 31.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

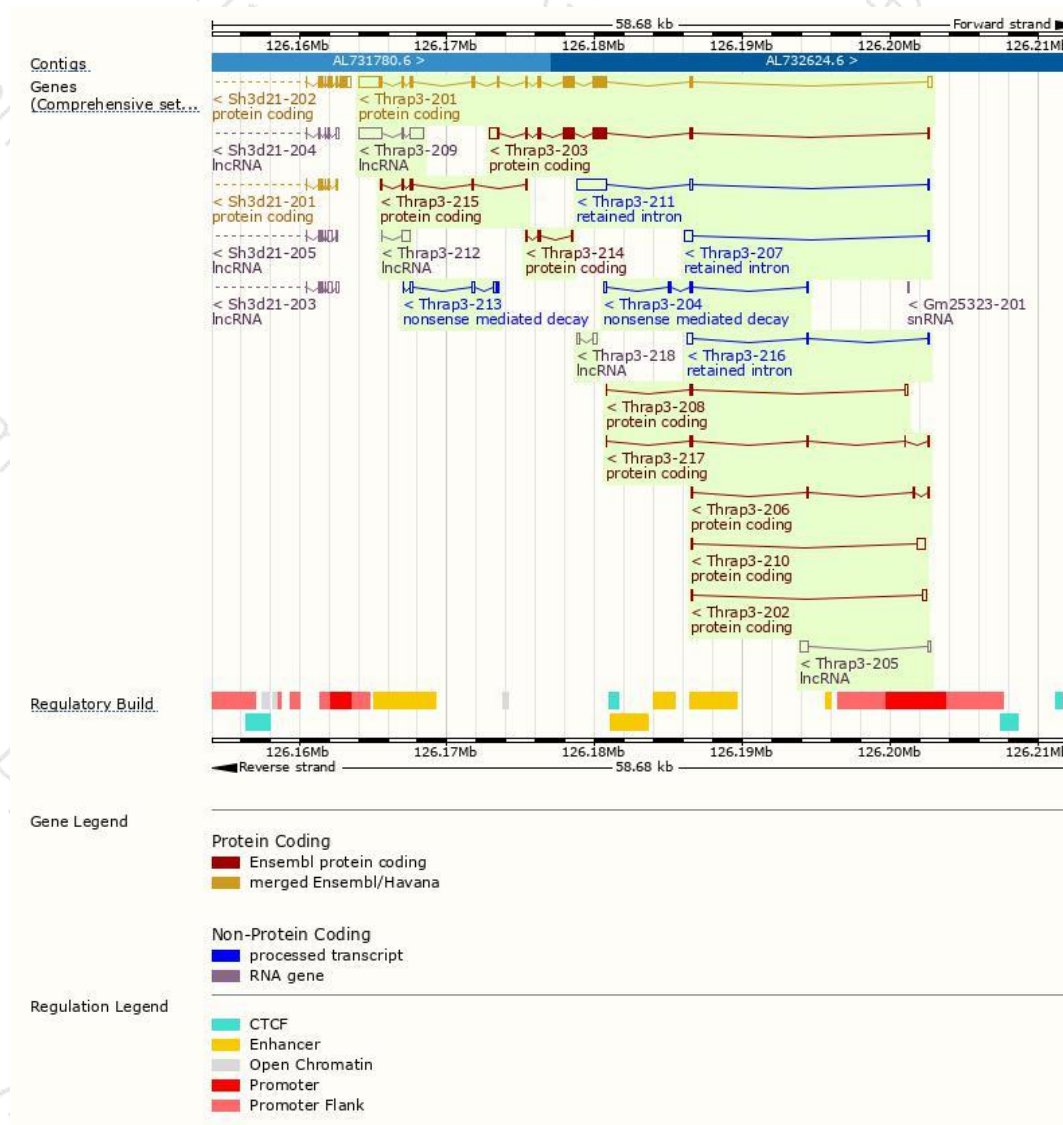
The gene has 18 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Thrap3-201	ENSMUST00000080919.11	4378	951aa	Protein coding	CCDS18645	Q569Z6	TSL:1 GENCODE basic APPRIS P1
Thrap3-203	ENSMUST00000106142.7	2744	709aa	Protein coding	-	Q8BZN7	TSL:1 GENCODE basic
Thrap3-210	ENSMUST00000142125.1	673	27aa	Protein coding	-	A2AJI7	CDS 3' incomplete TSL:3
Thrap3-215	ENSMUST00000163459.7	583	194aa	Protein coding	-	F6YH92	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:5
Thrap3-214	ENSMUST00000163306.1	407	135aa	Protein coding	-	F6YSQ2	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:3
Thrap3-206	ENSMUST00000130334.1	378	29aa	Protein coding	-	A2AJI6	CDS 3' incomplete TSL:3
Thrap3-202	ENSMUST00000106141.2	361	25aa	Protein coding	-	E9Q6C5	CDS 3' incomplete TSL:3
Thrap3-208	ENSMUST00000136157.7	350	53aa	Protein coding	-	A2AJI3	CDS 3' incomplete TSL:5
Thrap3-217	ENSMUST00000169403.7	339	50aa	Protein coding	-	E9Q5X3	CDS 3' incomplete TSL:3
Thrap3-204	ENSMUST00000123008.7	693	59aa	Nonsense mediated decay	-	E9Q494	TSL:3
Thrap3-213	ENSMUST00000163176.1	688	43aa	Nonsense mediated decay	-	F7AB07	CDS 5' incomplete TSL:3
Thrap3-211	ENSMUST00000151728.1	2238	No protein	Retained intron	-	-	TSL:1
Thrap3-207	ENSMUST00000130477.1	578	No protein	Retained intron	-	-	TSL:2
Thrap3-216	ENSMUST00000168568.7	521	No protein	Retained intron	-	-	TSL:2
Thrap3-209	ENSMUST00000140390.1	2656	No protein	lncRNA	-	-	TSL:1
Thrap3-212	ENSMUST00000154702.1	609	No protein	lncRNA	-	-	TSL:2
Thrap3-205	ENSMUST00000124327.1	590	No protein	lncRNA	-	-	TSL:2
Thrap3-218	ENSMUST00000169855.1	450	No protein	lncRNA	-	-	TSL:3

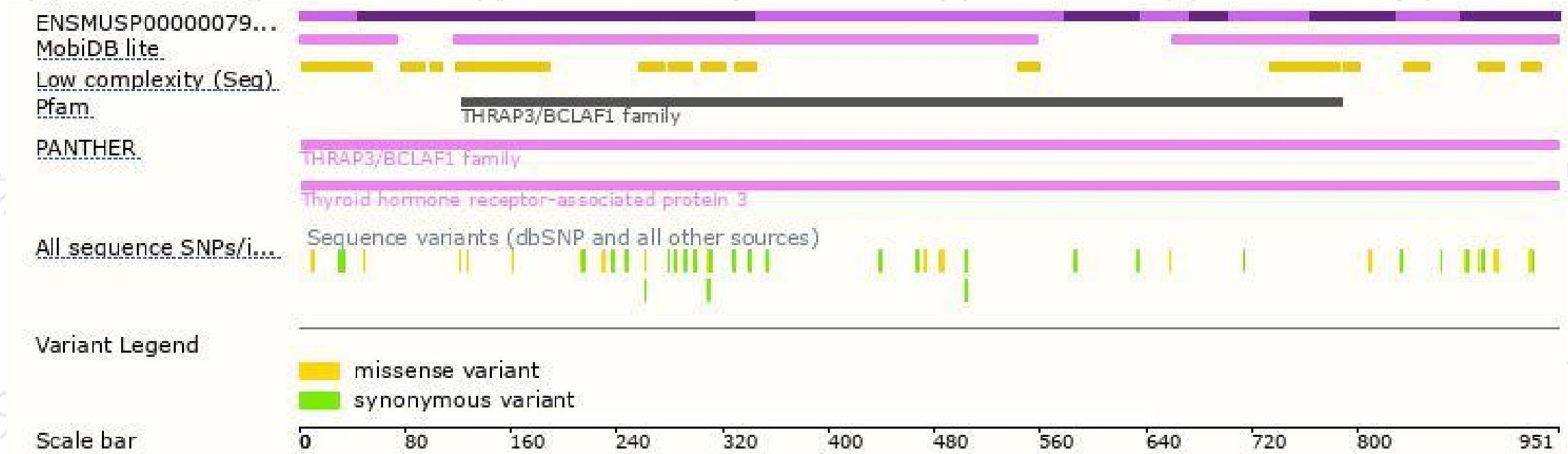
The strategy is based on the design of *Thrap3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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