

***Taok3* Cas9-CKO Strategy**

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Project Overview

Project Name

Taok3

Project type

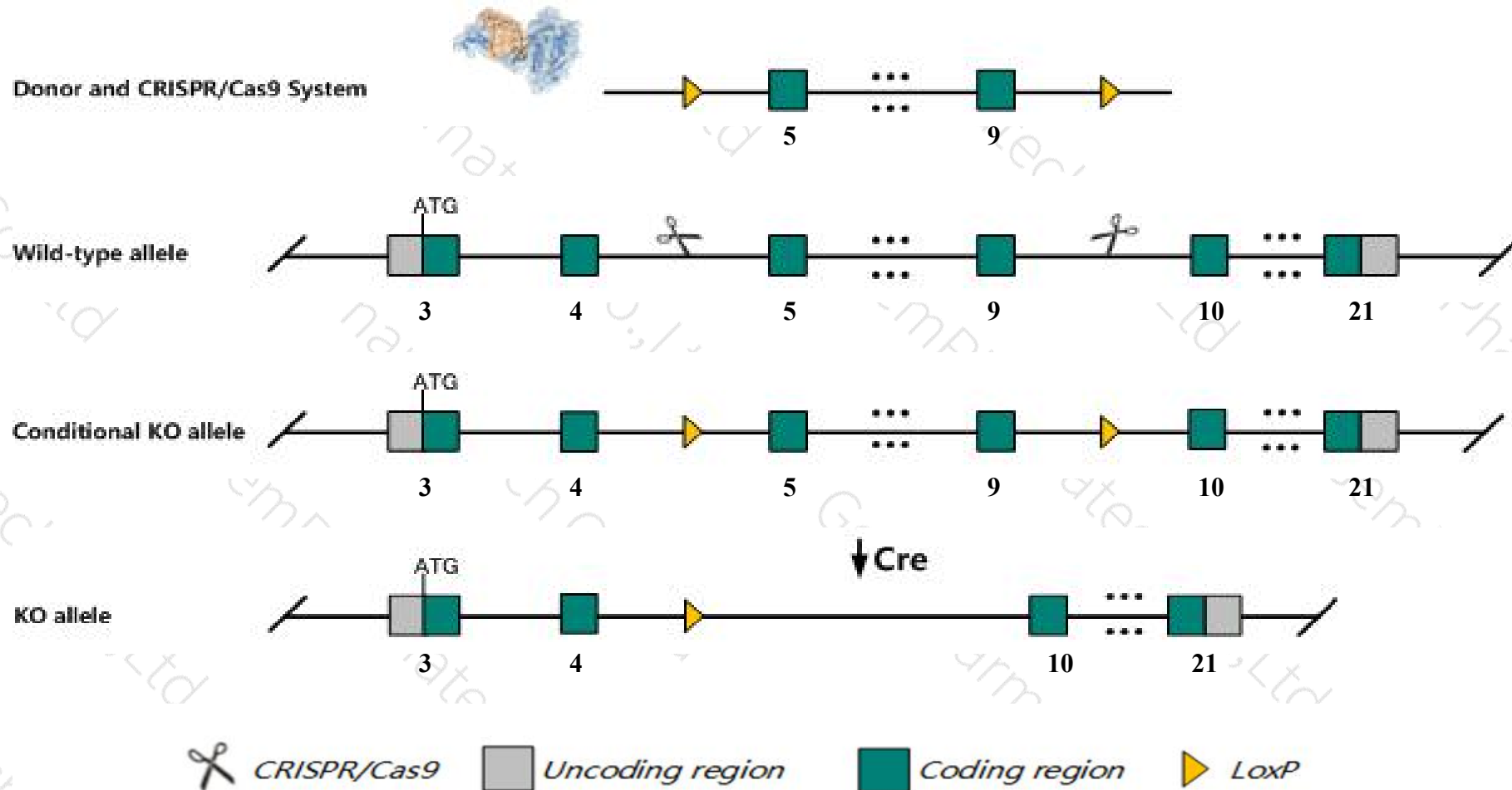
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Taok3* gene. The schematic diagram is as follows:



Technical routes

- The *Taok3* gene has 10 transcripts. According to the structure of *Taok3* gene, exon5-exon9 of *Taok3*-203(ENSMUST00000111978.7) transcript is recommended as the knockout region. The region contains 451bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Taok3* 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.

- The *Taok3* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Taok3 TAO kinase 3 [Mus musculus (house mouse)]

Gene ID: 330177, updated on 13-Mar-2020

Summary



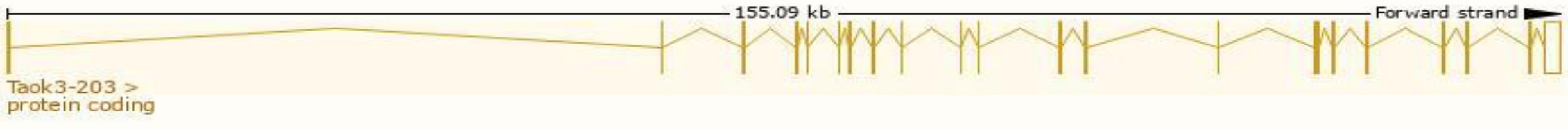
Official Symbol	Taok3 provided by MGI
Official Full Name	TAO kinase 3 provided by MGI
Primary source	MGI:MGI:3041177
See related	Ensembl:ENSMUSG00000061288
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2900006A08Rik, A130052D22, A430105I05Rik
Expression	Ubiquitous expression in liver E14 (RPKM 7.8), liver E14.5 (RPKM 6.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

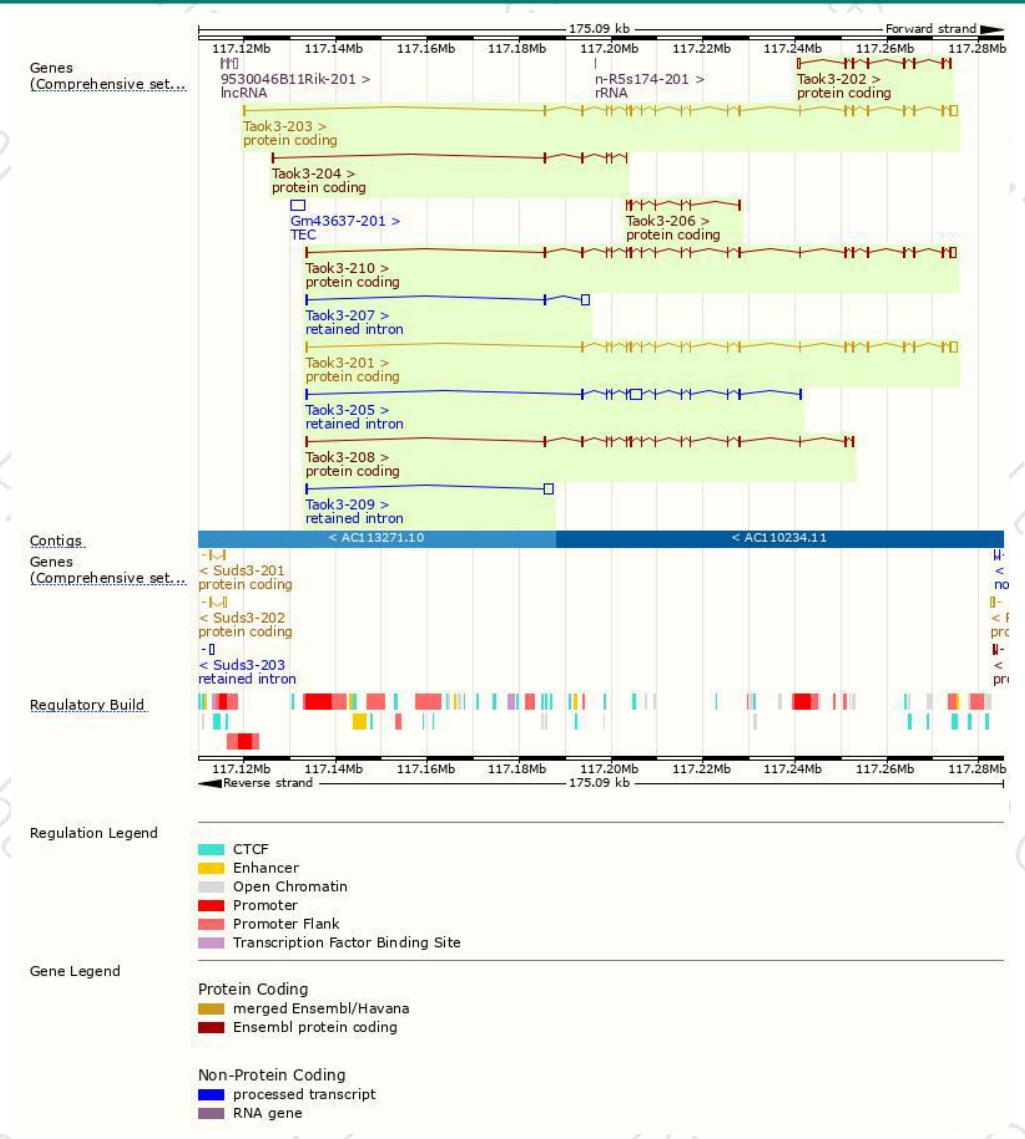
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Taok3-203	ENSMUST00000111978.7	4467	898aa	Protein coding	CCDS39233	Q8BYC6	TSL:1 GENCODE basic APPRIS P1
Taok3-201	ENSMUST00000092889.11	4354	898aa	Protein coding	CCDS39233	Q8BYC6	TSL:5 GENCODE basic APPRIS P1
Taok3-210	ENSMUST00000179276.7	4302	898aa	Protein coding	CCDS39233	Q8BYC6	TSL:5 GENCODE basic APPRIS P1
Taok3-202	ENSMUST00000111975.2	2172	438aa	Protein coding	-	Q3V3K3	TSL:1 GENCODE basic
Taok3-208	ENSMUST00000145640.7	2017	561aa	Protein coding	-	A0A0R4J1T3	CDS 3' incomplete TSL:1
Taok3-206	ENSMUST00000127814.2	717	239aa	Protein coding	-	F6RXB5	CDS 5' and 3' incomplete TSL:3
Taok3-204	ENSMUST00000125738.7	707	109aa	Protein coding	-	E9Q364	CDS 3' incomplete TSL:3
Taok3-205	ENSMUST00000126813.1	3930	No protein	Retained intron	-	-	TSL:1
Taok3-209	ENSMUST00000153709.1	2057	No protein	Retained intron	-	-	TSL:1
Taok3-207	ENSMUST00000128720.7	1961	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Taok3-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain

ENSMUSP00000107...

MobiDB lite

Low complexity (Seq)

Coiled-coils (Ncoils)

Superfamily

SMART

Pfam

PROSITE profiles

PROSITE patterns

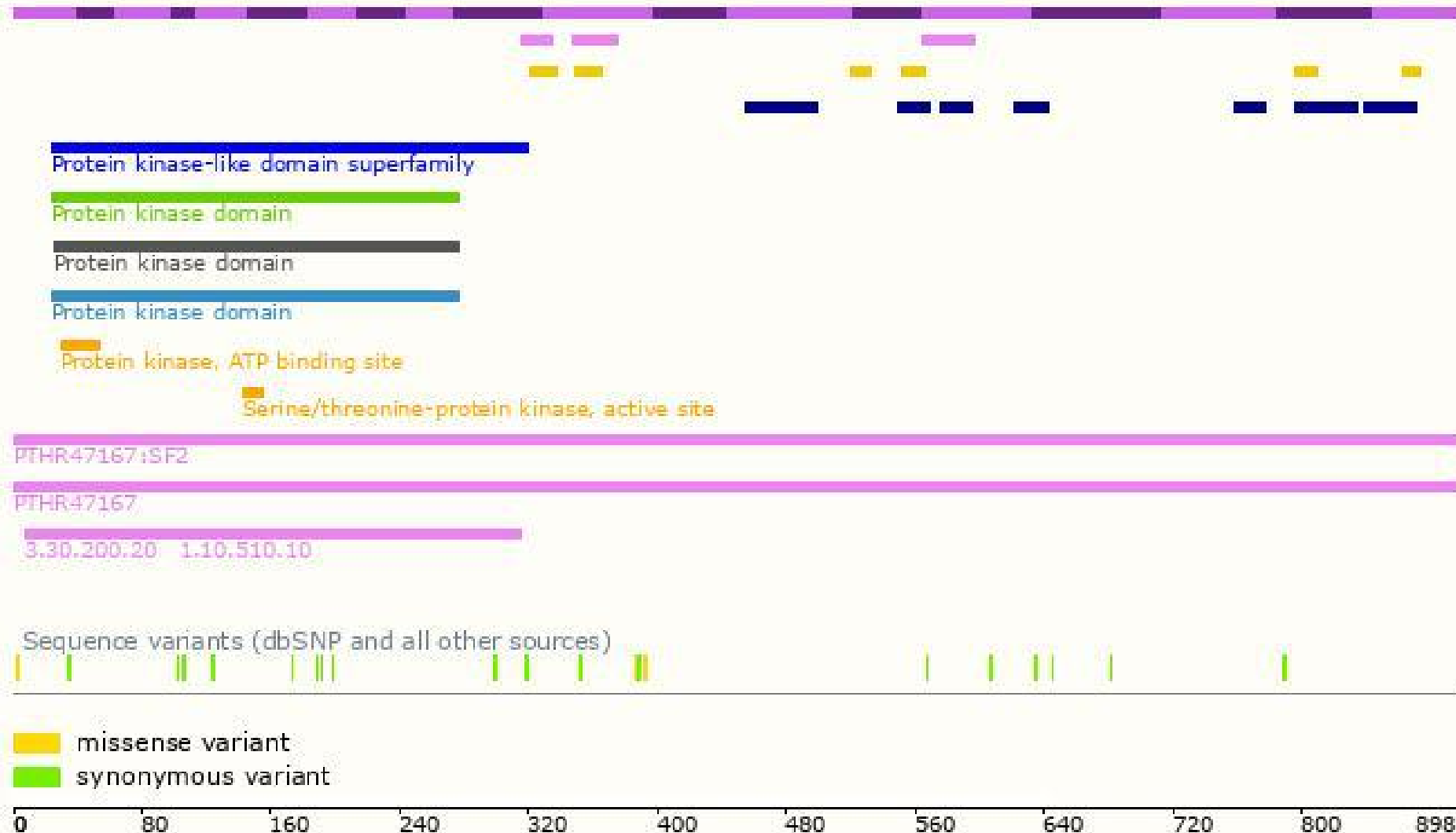
PANTHER

Gene3D

All sequence SNPs/i...

Variant Legend

Scale bar



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

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