

***Tekt1* Cas9-CKO Strategy**

Designer:

Daohua Xu

Reviewer:

Huimin Su

Design Date:

2020-3-10

Project Overview

Project Name

Tekt1

Project type

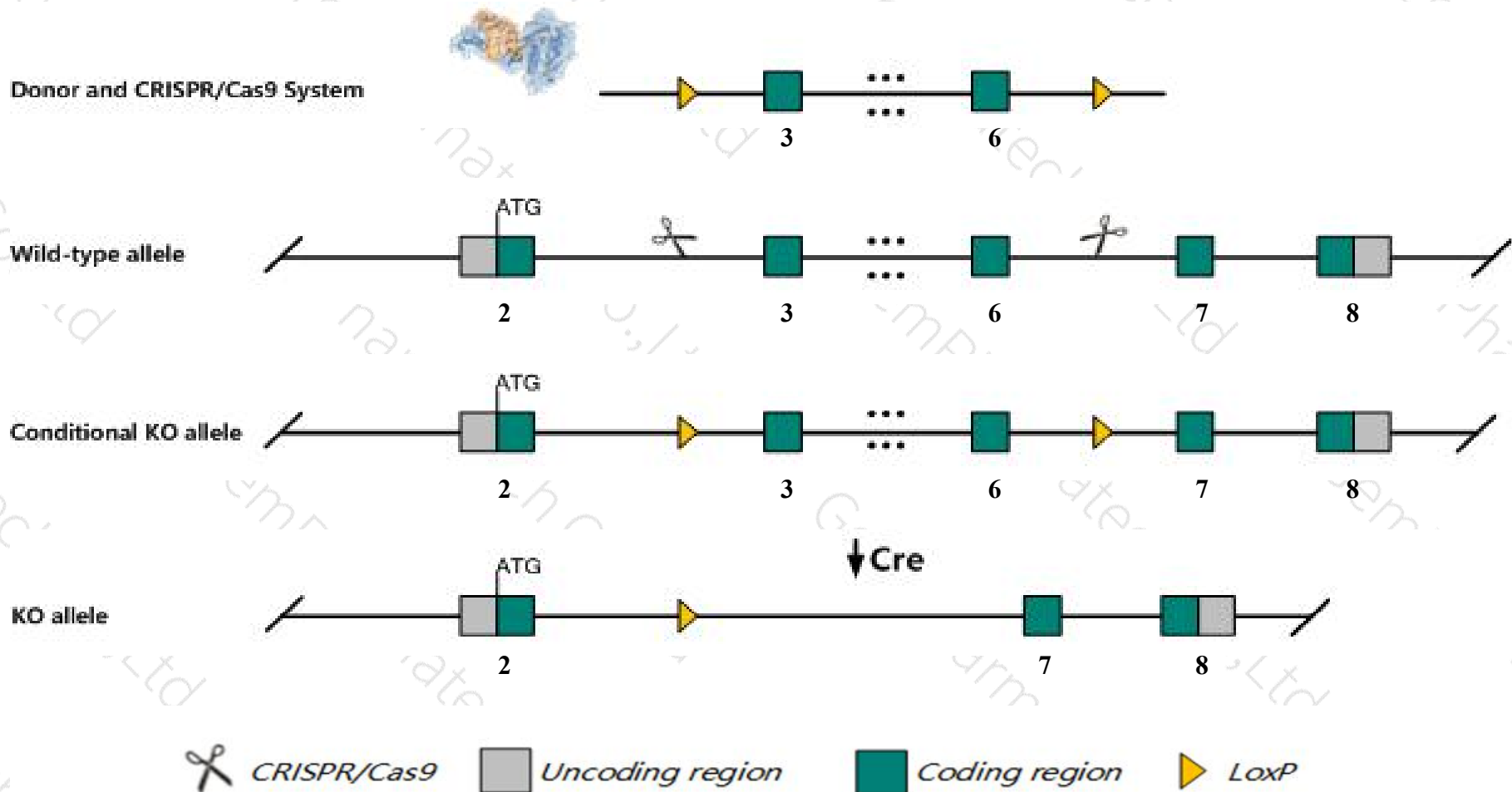
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tekt1* gene. The schematic diagram is as follows:



Technical routes

- The *Tekt1* gene has 3 transcripts. According to the structure of *Tekt1* gene, exon3-exon6 of *Tekt1-201* (ENSMUST00000021155.3) transcript is recommended as the knockout region. The region contains 662bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tekt1* 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 *Tekt1* gene is located on the Chr11. 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)

Tekt1 tektin 1 [Mus musculus (house mouse)]

Gene ID: 21689, updated on 31-Jan-2019

Summary



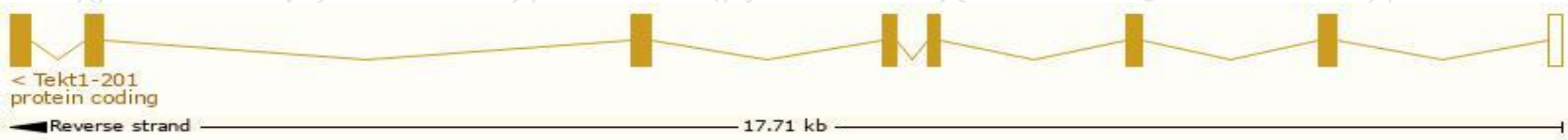
Official Symbol	Tekt1 provided by MGI
Official Full Name	tektin 1 provided by MGI
Primary source	MGI:MGI:1333819
See related	Ensembl:ENSMUSG00000020799
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	MT14
Expression	Biased expression in testis adult (RPKM 66.9) and lung adult (RPKM 2.4) See more
Orthologs	human all

Transcript information (Ensembl)

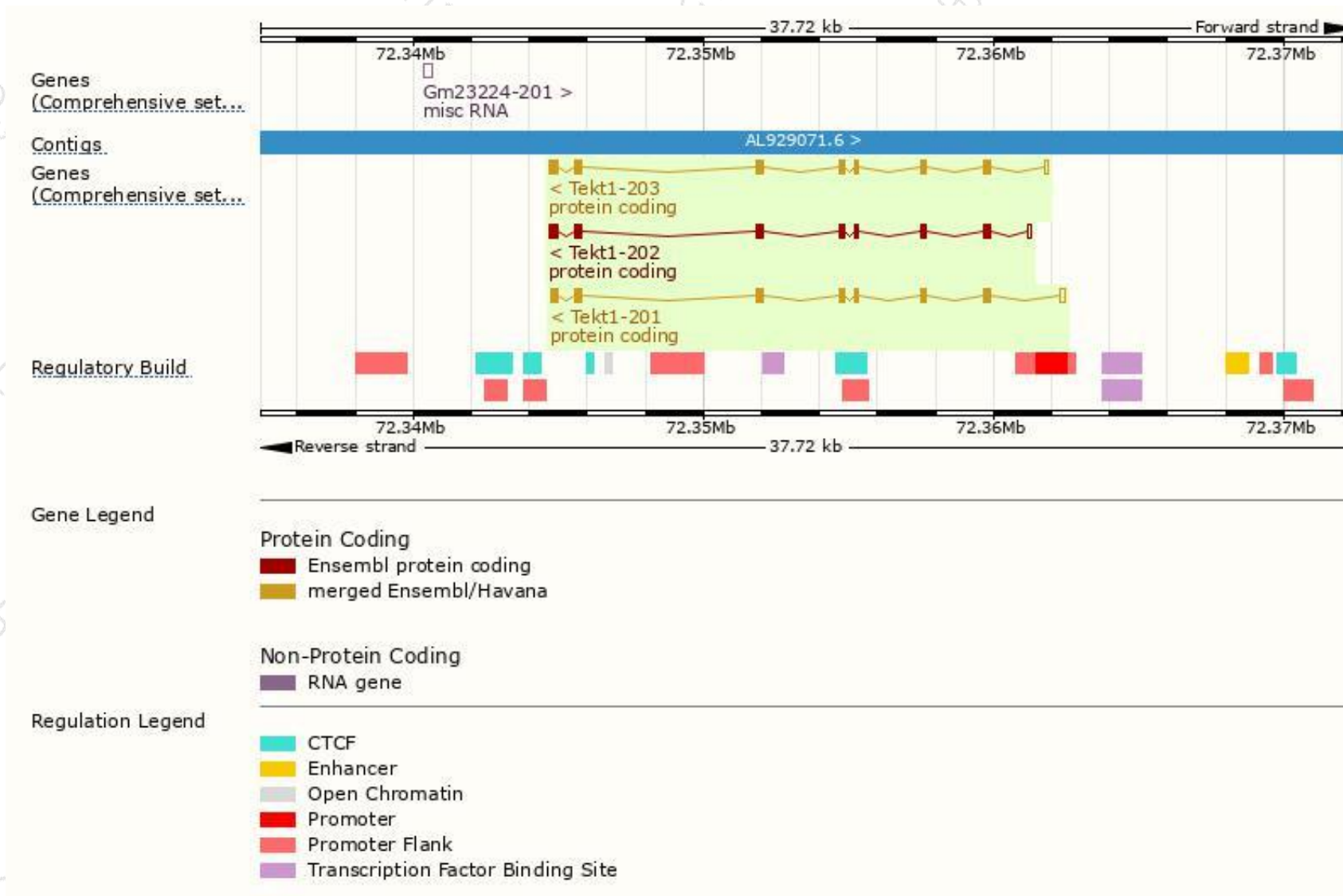
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tekt1-201	ENSMUST00000021155.3	1447	418aa	Protein coding	CCDS36215	Q5NBU4 Q9DAJ2	TSL:1 GENCODE basic APPRIS P1
Tekt1-202	ENSMUST00000108502.7	1403	418aa	Protein coding	CCDS36215	Q5NBU4 Q9DAJ2	TSL:1 GENCODE basic APPRIS P1
Tekt1-203	ENSMUST00000108503.8	1397	418aa	Protein coding	CCDS36215	Q5NBU4 Q9DAJ2	TSL:1 GENCODE basic APPRIS P1

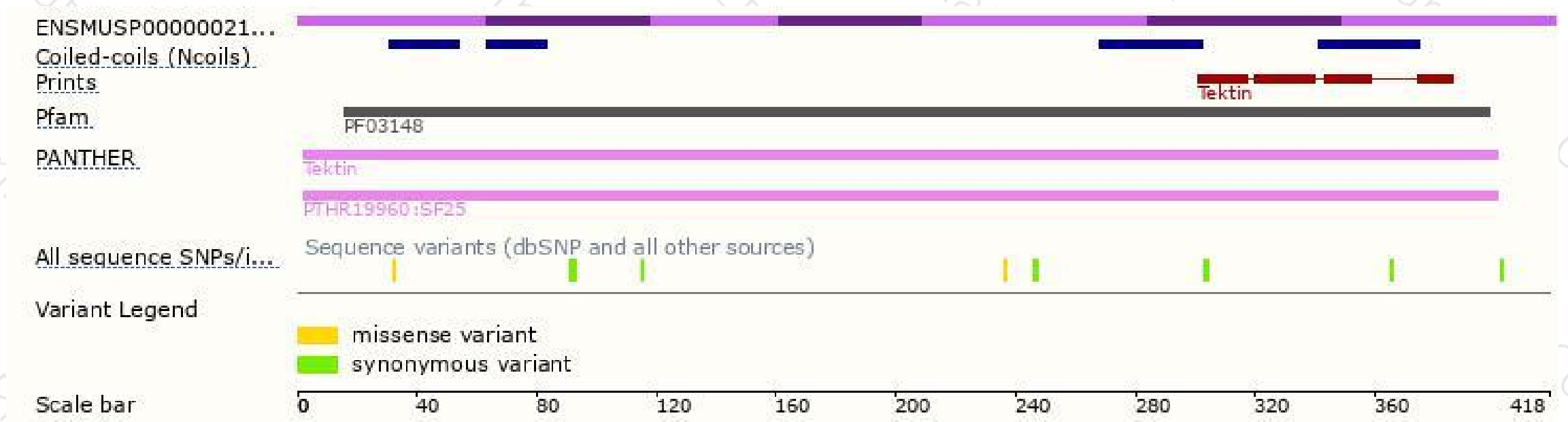
The strategy is based on the design of *Tekt1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

