

Tec Cas9-KO Strategy

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Project Overview

Project Name

Tec

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Tec* gene has 9 transcripts. According to the structure of *Tec* gene, exon4-exon9 of *Tec-201* (ENSMUST00000071944.12) transcript is recommended as the knockout region. The region contains 596bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tec* gene. The brief process is as follows: CRISPR/Cas9 system were

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit a minor reduction in platelet aggregation in response to threshold concentrations of collagen-related peptide or collagen.
- Transcript *Tec*-209 CDS 3' is incompletely affected, whether it will be affected is unknown.
- The *Tec* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

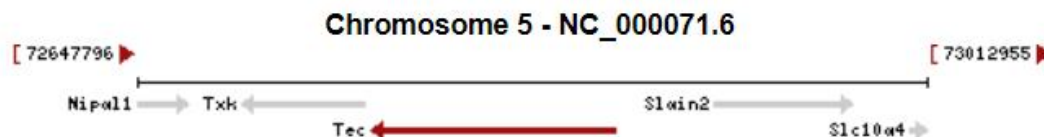
Gene information (NCBI)

Tec tec protein tyrosine kinase [*Mus musculus* (house mouse)]

Gene ID: 21682, updated on 12-Aug-2019

Summary

Official Symbol	Tec provided by MGI
Official Full Name	tec protein tyrosine kinase provided by MGI
Primary source	MGI:MGI:98662
See related	Ensembl:ENSMUSG00000029217
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
Expression	Ubiquitous expression in placenta adult (RPKM 4.6), spleen adult (RPKM 4.0) and 27 other tissues See more
Orthologs	human all

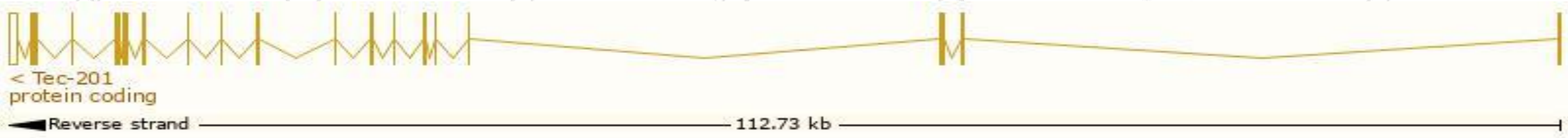


Transcript information (Ensembl)

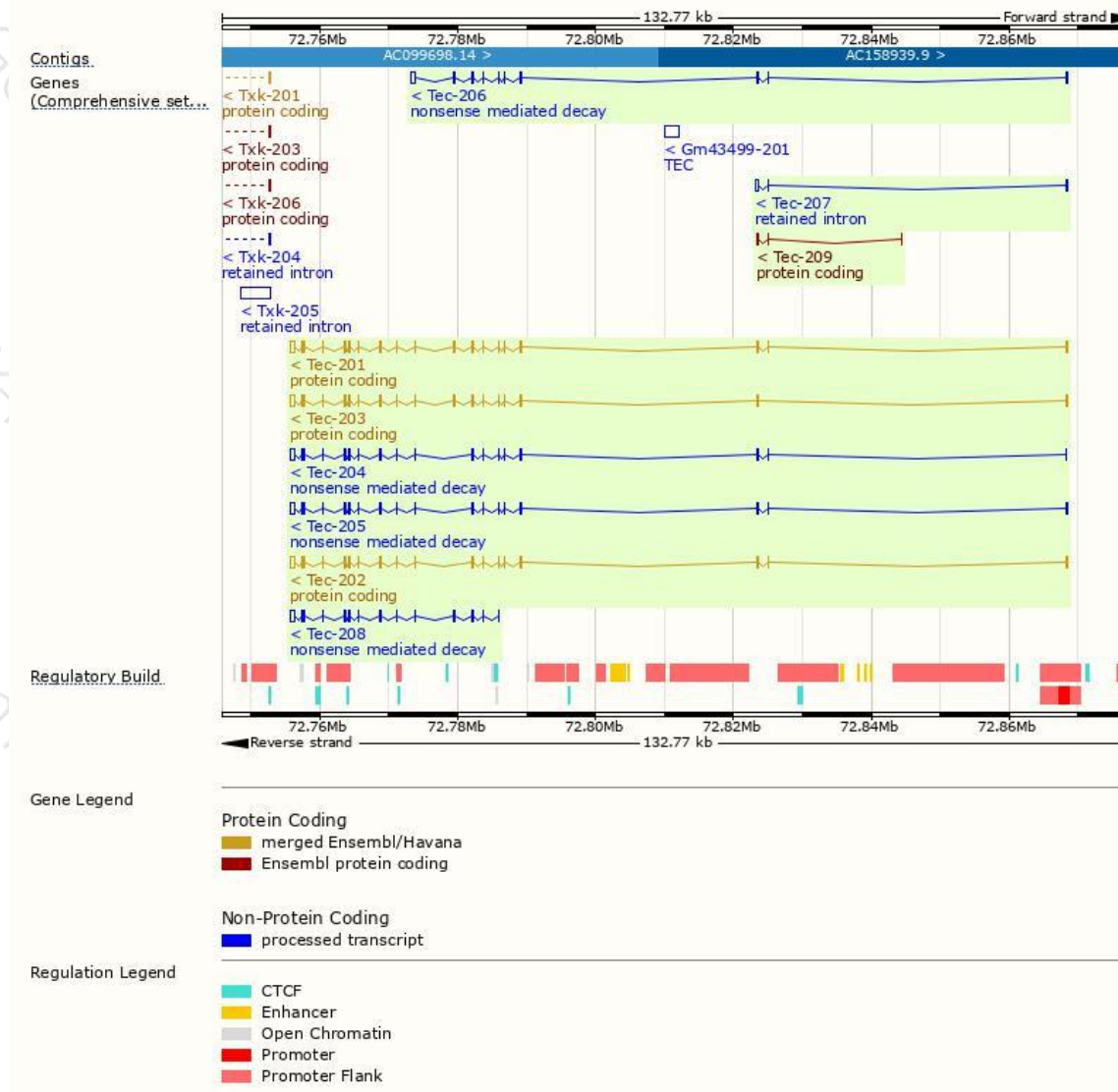
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tec-201	ENSMUST00000071944.12	2659	630aa	Protein coding	CCDS51516	Q3U436	TSL:1 GENCODE basic APPRIS P1
Tec-203	ENSMUST00000113594.7	2580	630aa	Protein coding	CCDS51516	Q3U436	TSL:1 GENCODE basic APPRIS P1
Tec-202	ENSMUST00000073843.12	2573	608aa	Protein coding	CCDS51515	Q8CFK4	TSL:1 GENCODE basic
Tec-209	ENSMUST00000202547.1	377	44aa	Protein coding	-	A0A0J9YV29	CDS 3' incomplete TSL:3
Tec-205	ENSMUST00000138842.7	2569	100aa	Nonsense mediated decay	-	A0A0R4J1V5	TSL:1
Tec-204	ENSMUST00000126481.7	2543	184aa	Nonsense mediated decay	-	D6RJM5	TSL:5
Tec-208	ENSMUST00000155342.7	2117	68aa	Nonsense mediated decay	-	F6W1T9	CDS 5' incomplete TSL:2
Tec-206	ENSMUST00000149533.7	1561	100aa	Nonsense mediated decay	-	A0A0R4J1V5	TSL:1
Tec-207	ENSMUST00000150193.1	621	No protein	Retained intron	-	-	TSL:2

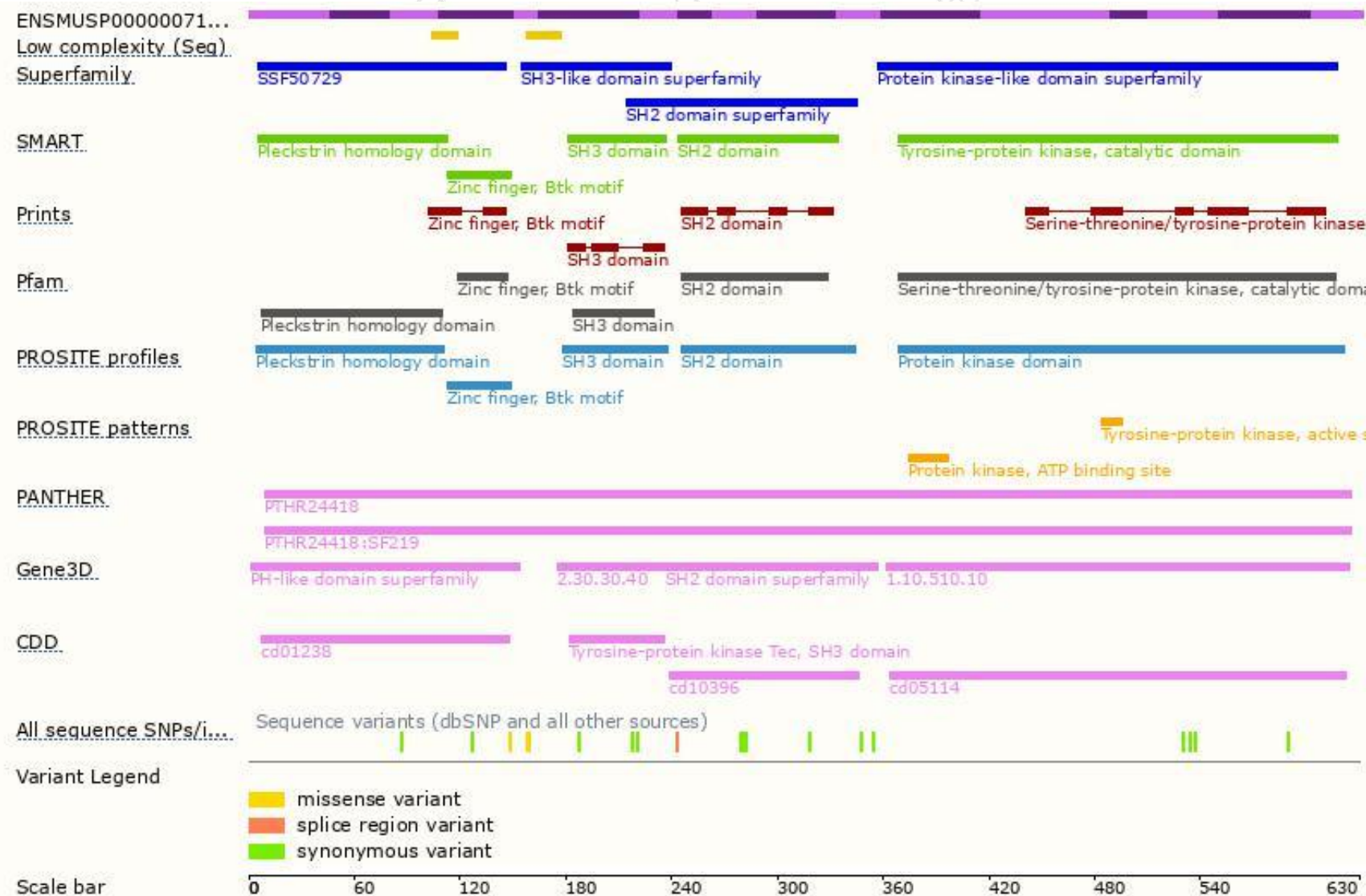
The strategy is based on the design of *Tec-201* transcript,The transcription is shown below



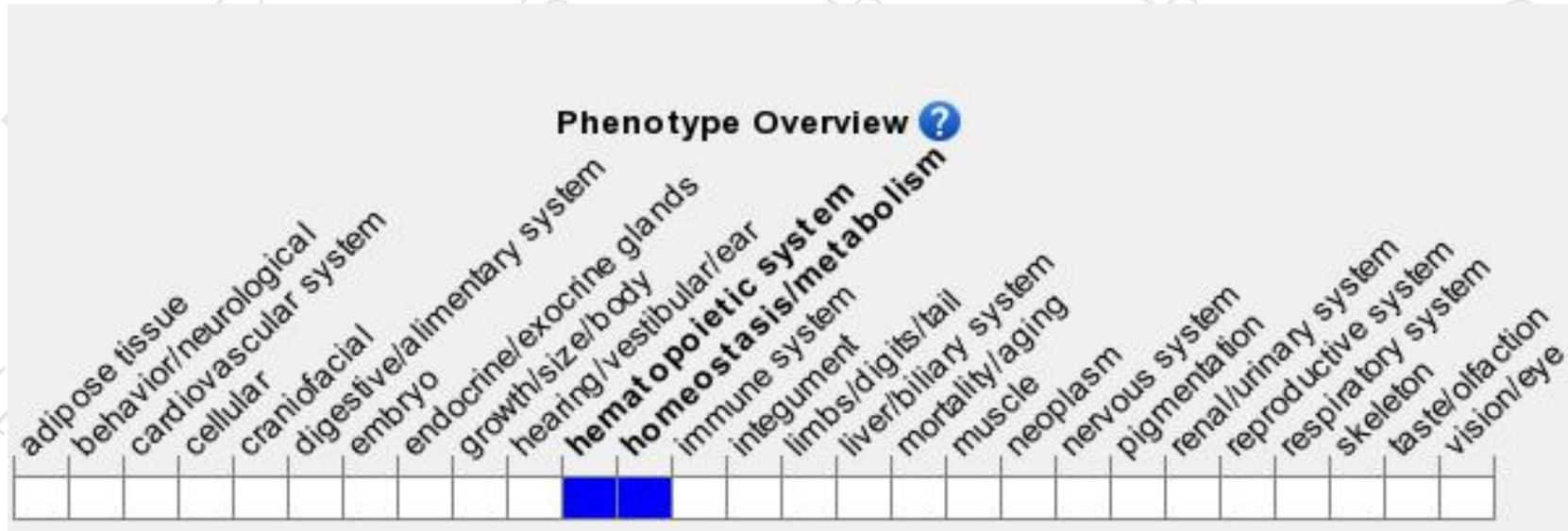
Genomic location distribution



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 knock-out allele exhibit a minor reduction in platelet aggregation in response to threshold concentrations of collagen-related peptide or collagen.

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

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