

Tti2 Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Tti2

Project type

Cas9-CKO

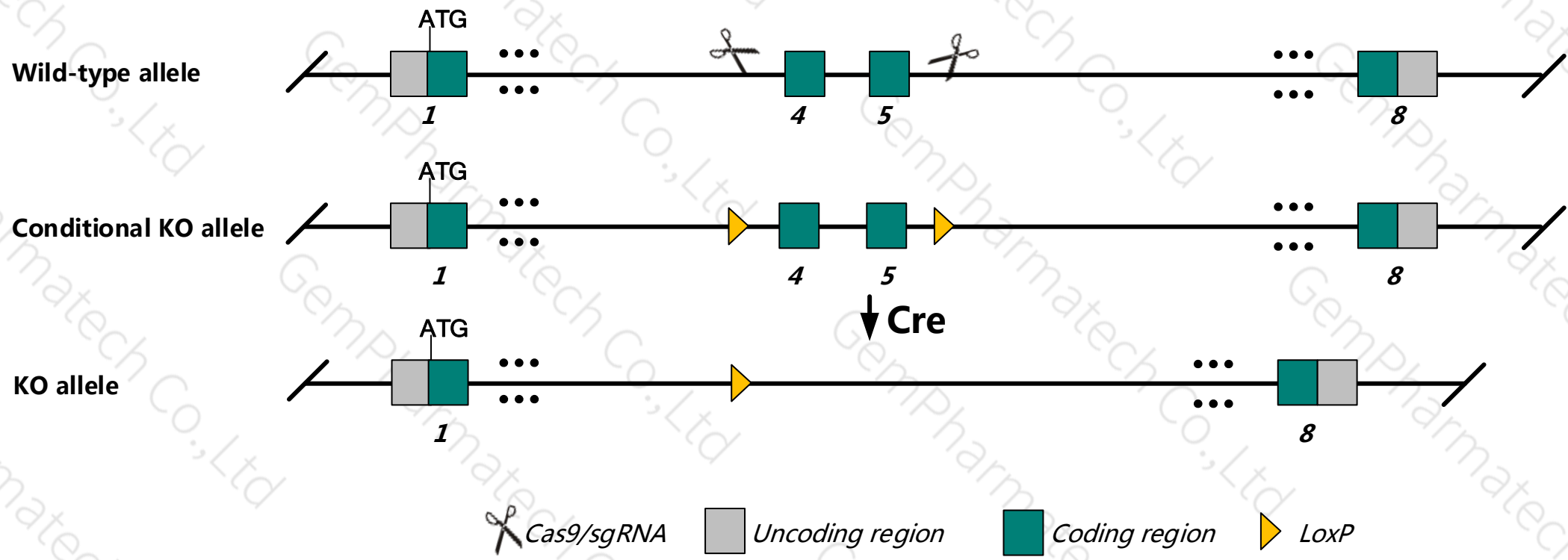
Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tti2* gene. The schematic diagram is as follows:

Donor and CRISPR/Cas9 System



- The *Tti2* gene has 4 transcripts. According to the structure of *Tti2* gene, exon4-exon5 of *Tti2*-204 (ENSMUST00000210129.1) transcript is recommended as the knockout region. The region contains 332bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tti2* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues or cell types.

- The *Tti2* gene is located on the Chr8. 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information (NCBI)

Tti2 TELO2 interacting protein 2 [*Mus musculus* (house mouse)]

Gene ID: 234138, updated on 18-Sep-2018

Summary

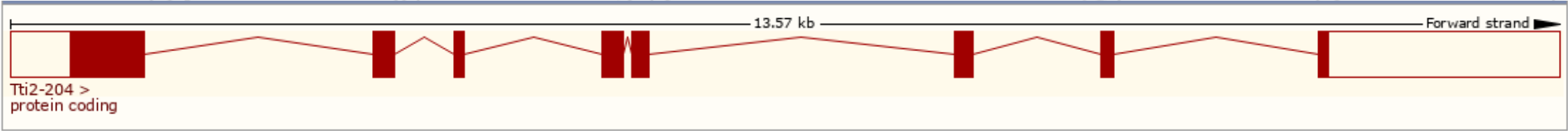
Official Symbol	Tti2 provided by MGI
Official Full Name	TELO2 interacting protein 2 provided by MGI
Primary source	MGI:MGI:2384576
See related	Ensembl:ENSMUSG000000031577 Vega:OTTMUSG000000060915
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Ubiquitous expression in CNS E11.5 (RPKM 5.3), CNS E14 (RPKM 4.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

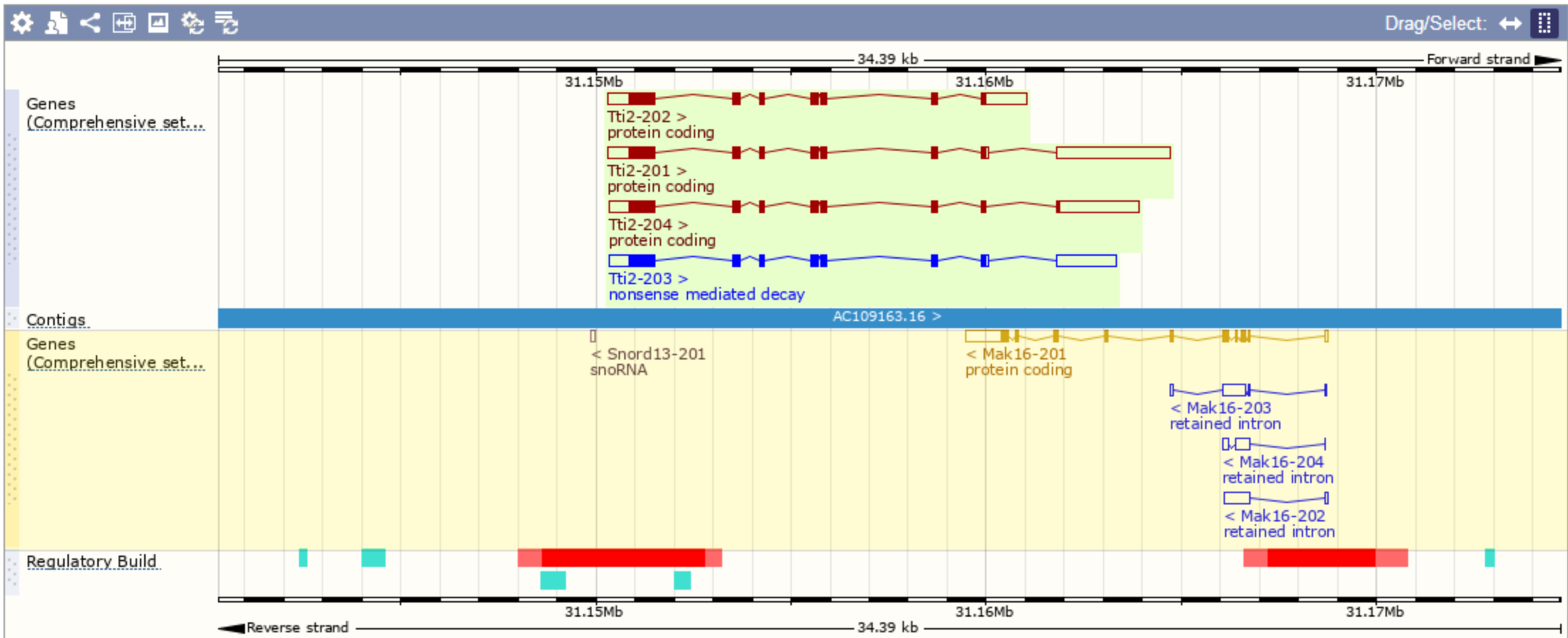
The gene has 4 transcripts, and all transcripts are shown below :

Show/hide columns (1 hidden)								Filter	
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags	
Tti2-201	ENSMUST00000098842.2	5039	512aa	Protein coding	CCDS22221	Q8BGV4	NR_103719	TSL:1	GENCODE basic APPRIS P3
Tti2-204	ENSMUST00000210129.1	4159	537aa	Protein coding	CCDS85525	A0A1B0GSJ1	NM_001199988 NP_001186917	TSL:1	GENCODE basic APPRIS ALT2
Tti2-202	ENSMUST00000209851.1	3133	512aa	Protein coding	CCDS22221	Q8BGV4	NM_144927 NP_659176	TSL:1	GENCODE basic APPRIS P3
Tti2-203	ENSMUST00000209986.1	3652	512aa	Nonsense mediated decay	CCDS22221	Q8BGV4	-	TSL:1	

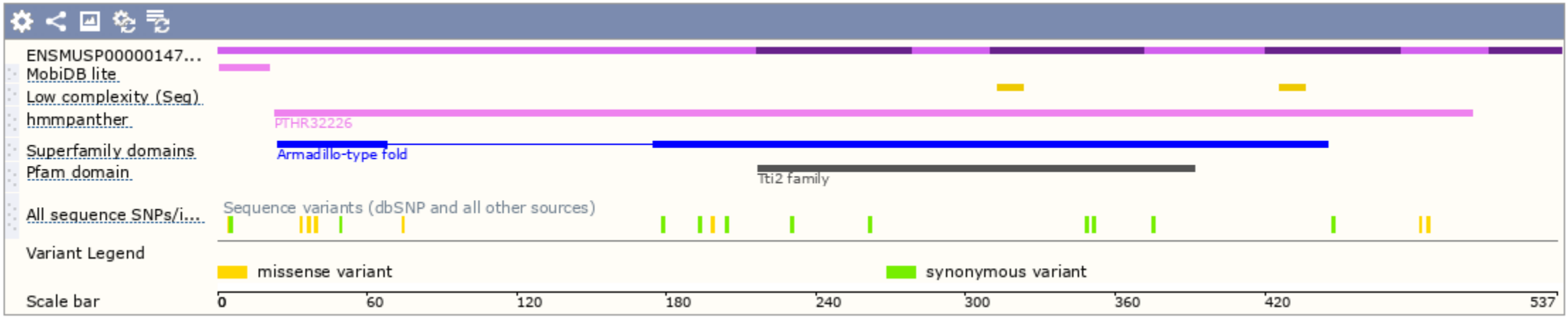
The strategy is based on the design of *Tti2-204* transcript, The transcription is shown below



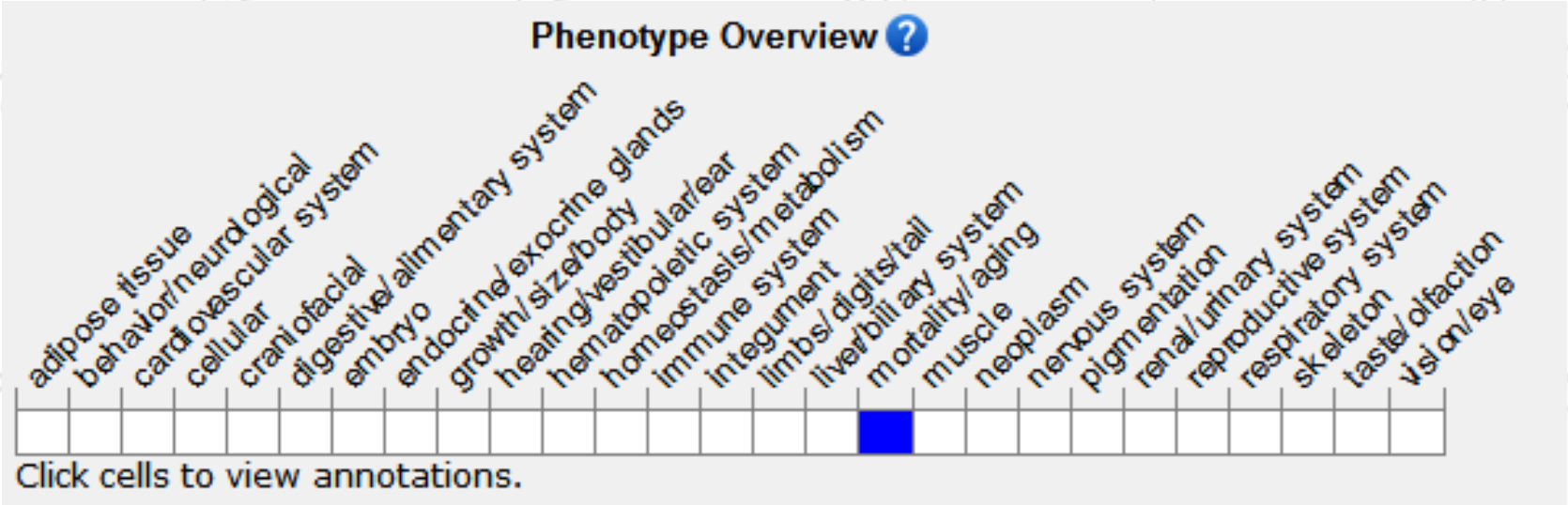
Genomic location distribution



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/>) .

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