

# ***Tti2 Cas9-KO Strategy***

**Designer:**

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# Project Overview



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**Project Name**

***Tti2***

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**Project type**

**Cas9-KO**

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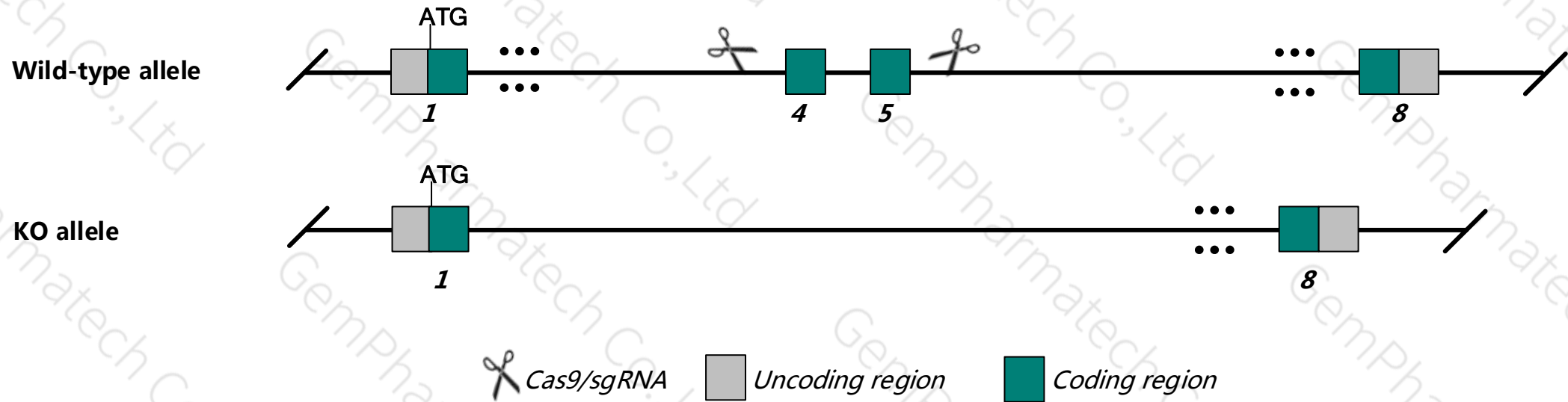
**Strain background**

**C57BL/6JGpt**

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# Knockout strategy

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



# Technical routes

- 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. Cas9 and sgRNA 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 *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

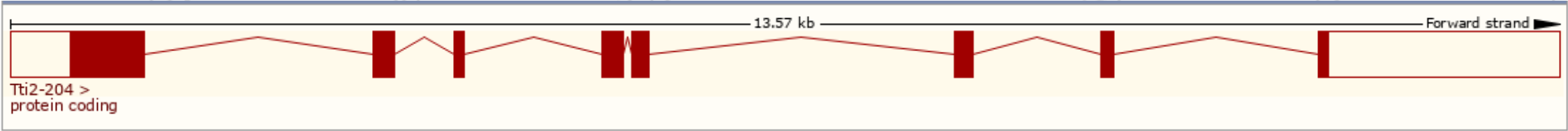


# Transcript information ( Ensembl )

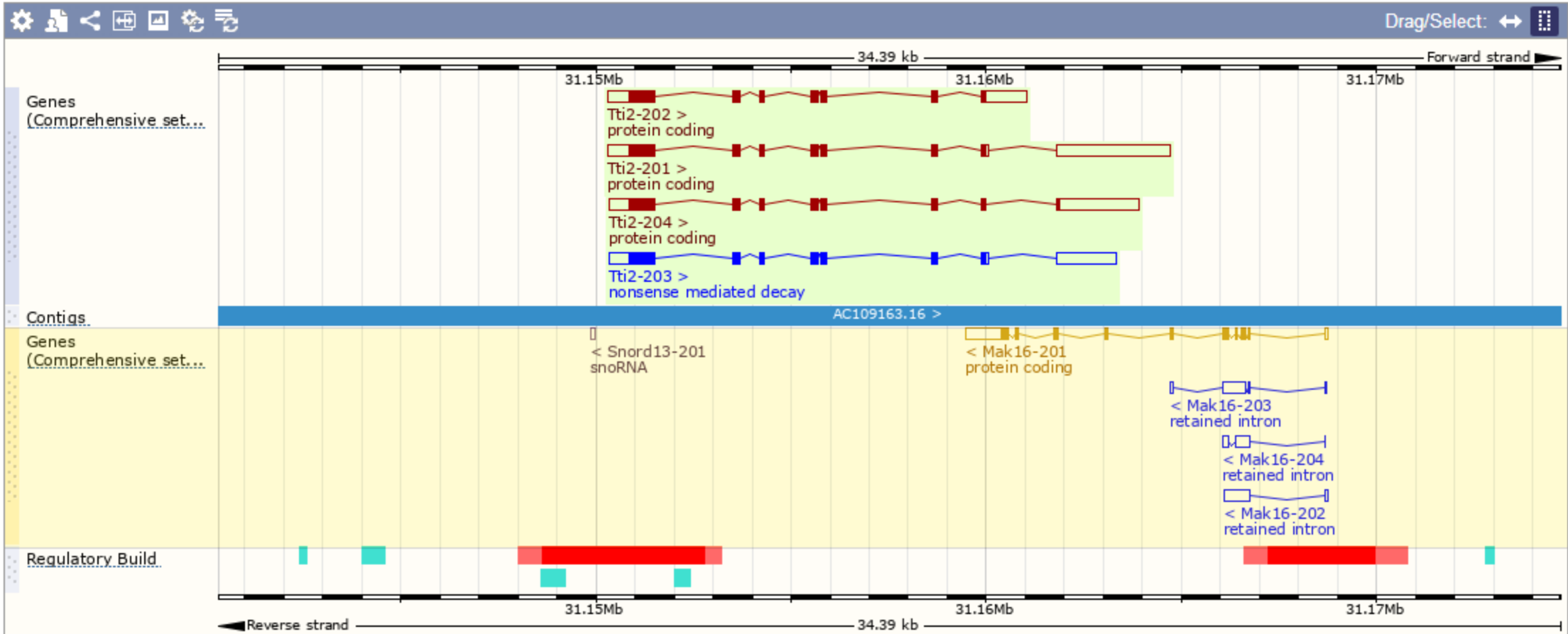
The gene has 4 transcripts, and all transcripts are shown below :

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

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

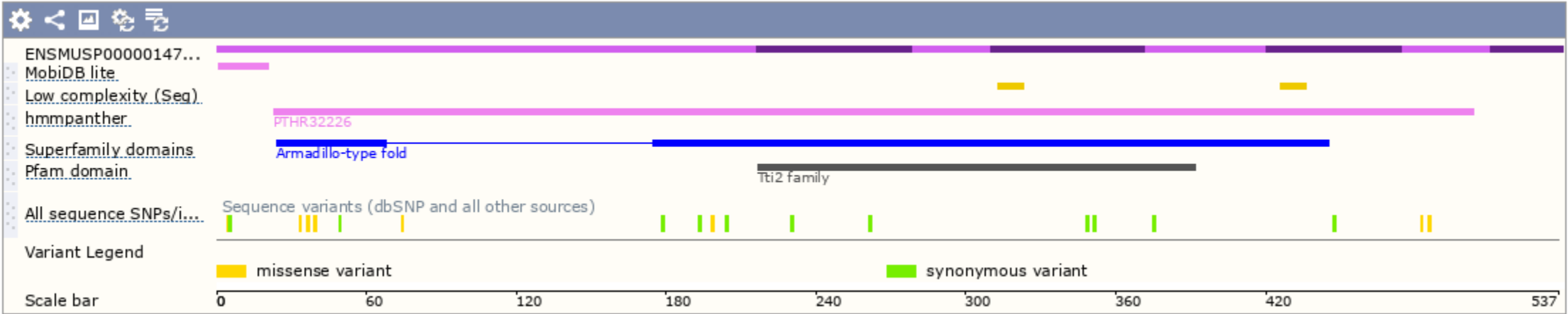


# Genomic location distribution

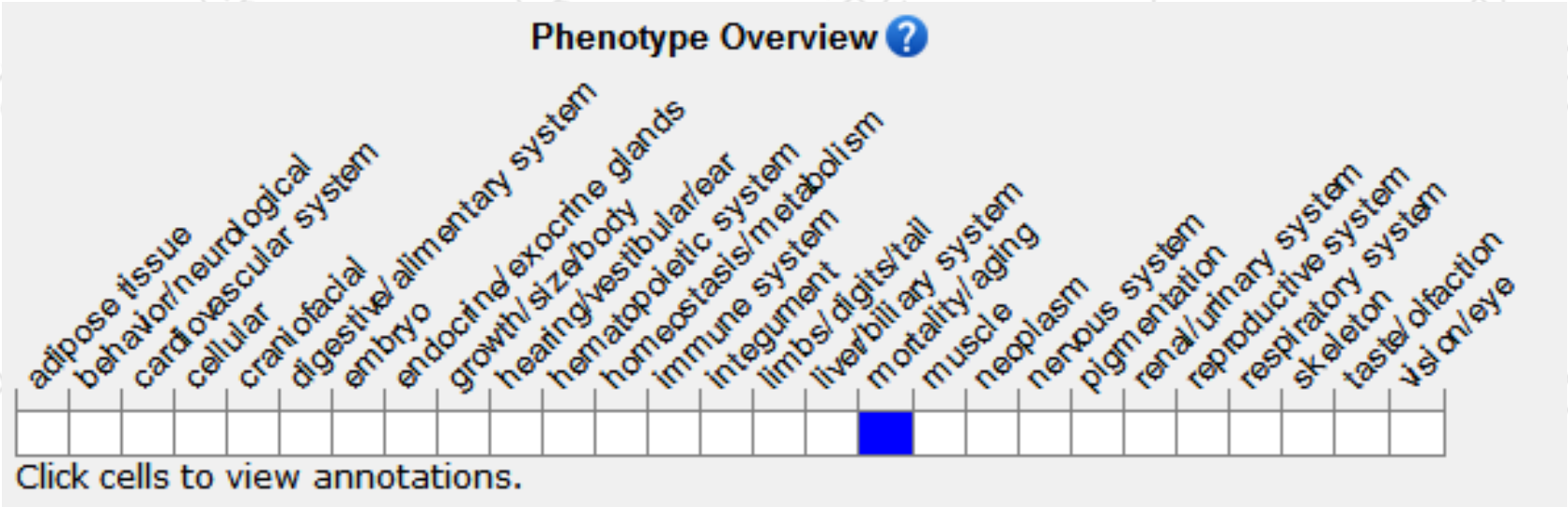




# Protein domain



# 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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