Tc2n Cas9-KO Strategy

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Project Overview

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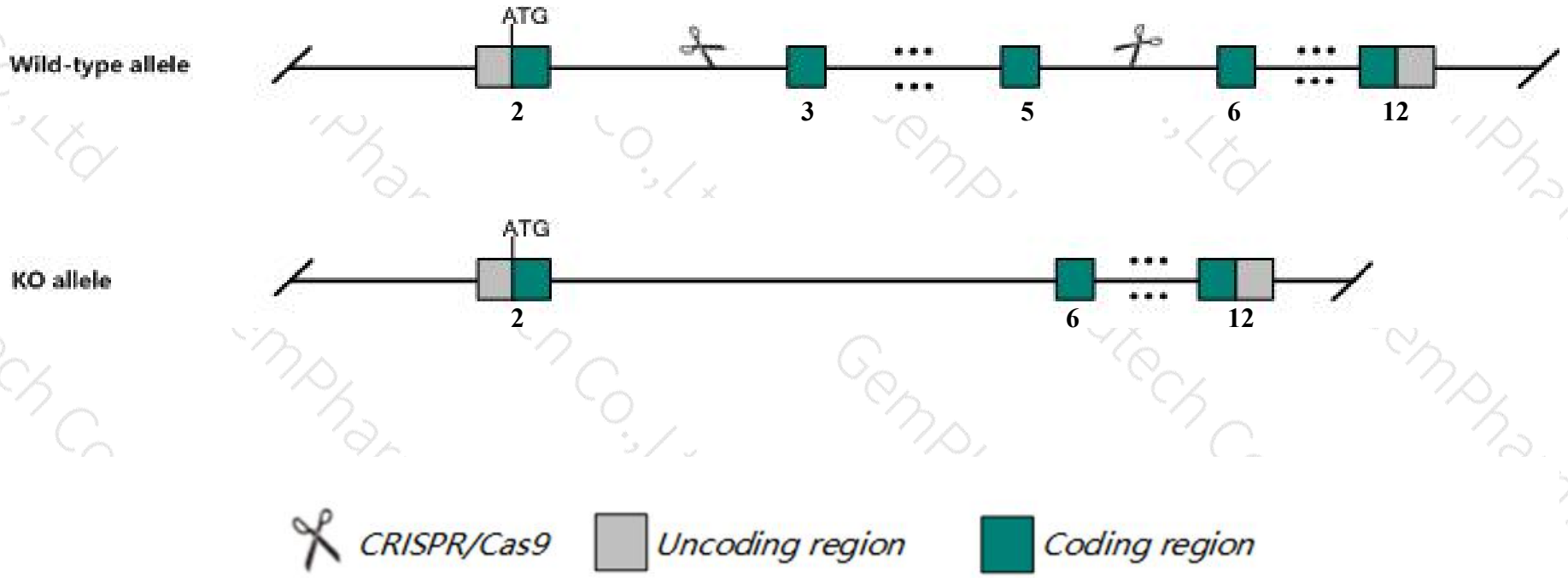
Project Name	***Tc2n***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tc2n* gene. The schematic diagram is as follows:



Technical routes

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- The *Tc2n* gene has 4 transcripts. According to the structure of *Tc2n* gene, exon3-exon5 of *Tc2n-204* (ENSMUST00000162735.7) transcript is recommended as the knockout region.The region contains 491bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Tc2n* gene. The brief process is as follows: CRISPR/Cas9 system v

Notice

- The *Tc2n* gene is located on the Chr12. 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）

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Tc2n tandem C2 domains, nuclear [Mus musculus (house mouse)]

Gene ID: 74413, updated on 31-Jan-2019

Summary

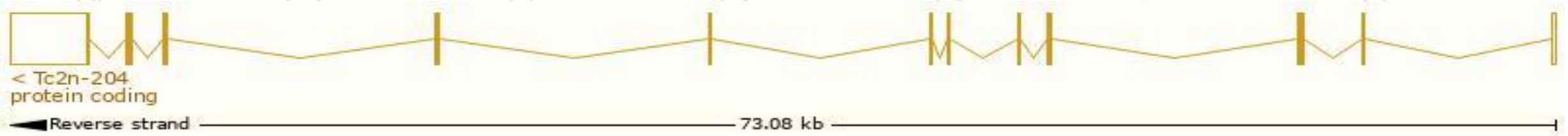
Official Symbol	Tc2n provided by MGI
Official Full Name	tandem C2 domains, nuclear provided byMGI
Primary source	MGI:MGI:1921663
See related	Ensembl:ENSMUSG00000021187
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4933406D09Rik, Mtac2d1, Tac2-N
Expression	Biased expression in bladder adult (RPKM 2.4), testis adult (RPKM 0.5) and 6 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

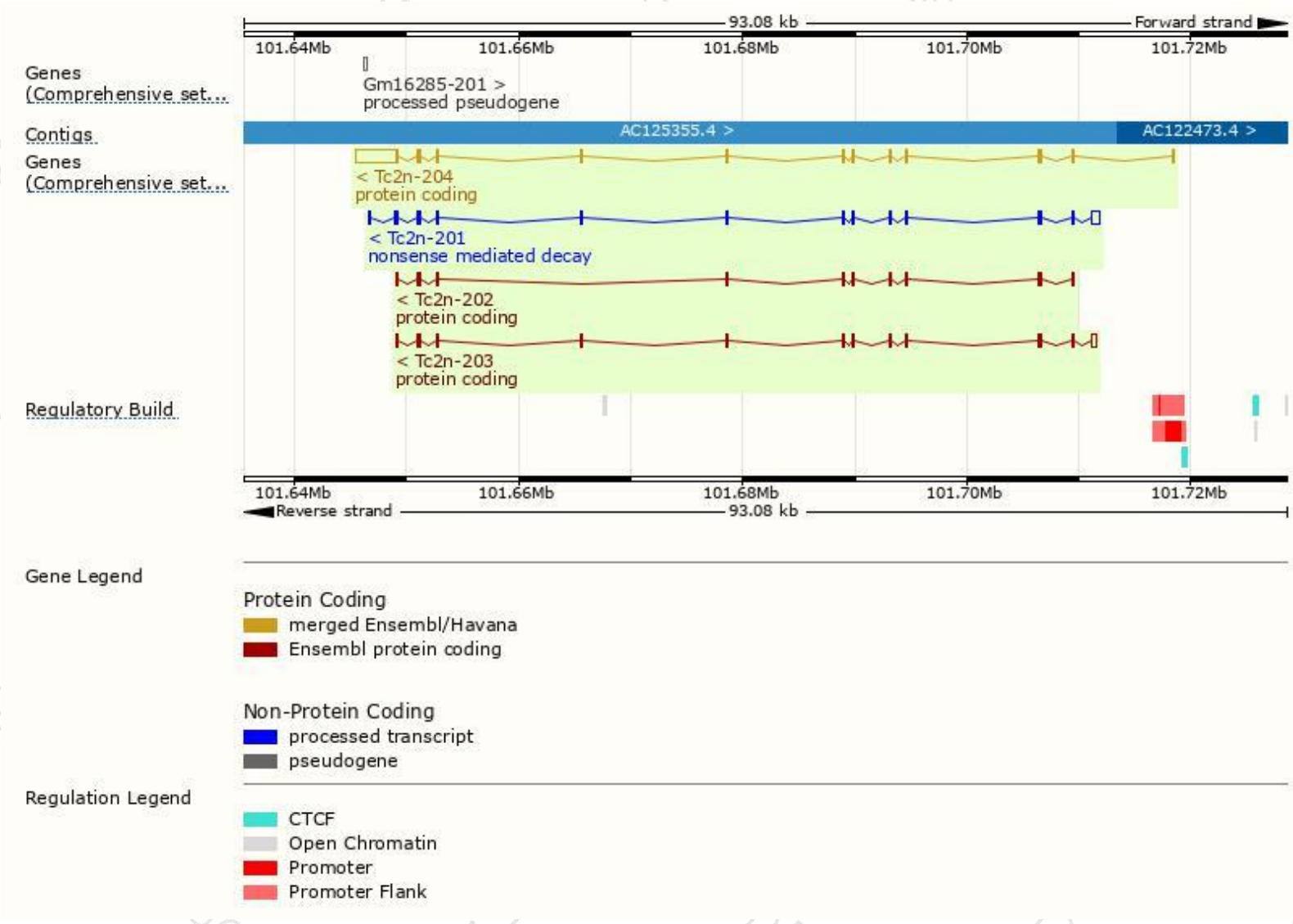
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tc2n-204	ENSMUST00000162735.7	5290	489aa	Protein coding	CCDS36524	Q91XT6	TSL:1 GENCODE basic APPRIS P1
Tc2n-203	ENSMUST00000160830.1	2005	489aa	Protein coding	CCDS36524	Q91XT6	TSL:1 GENCODE basic APPRIS P1
Tc2n-202	ENSMUST00000160715.7	1386	425aa	Protein coding	-	E0CXQ6	TSL:5 GENCODE basic
Tc2n-201	ENSMUST00000110047.8	2587	489aa	Nonsense mediated decay	CCDS36524	Q91XT6	TSL:2

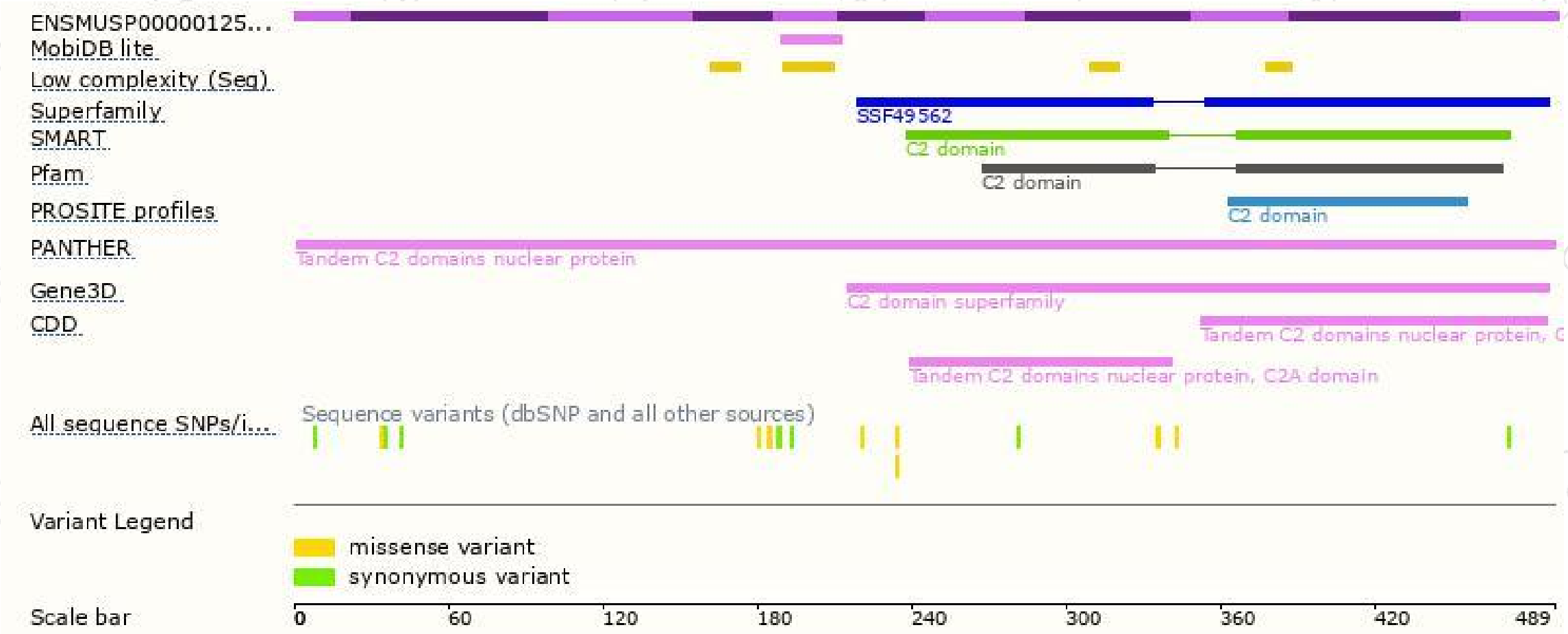
The strategy is based on the design of *Tc2n-204* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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