# *Tent5d* Cas9-KO Strategy

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# Project Overview

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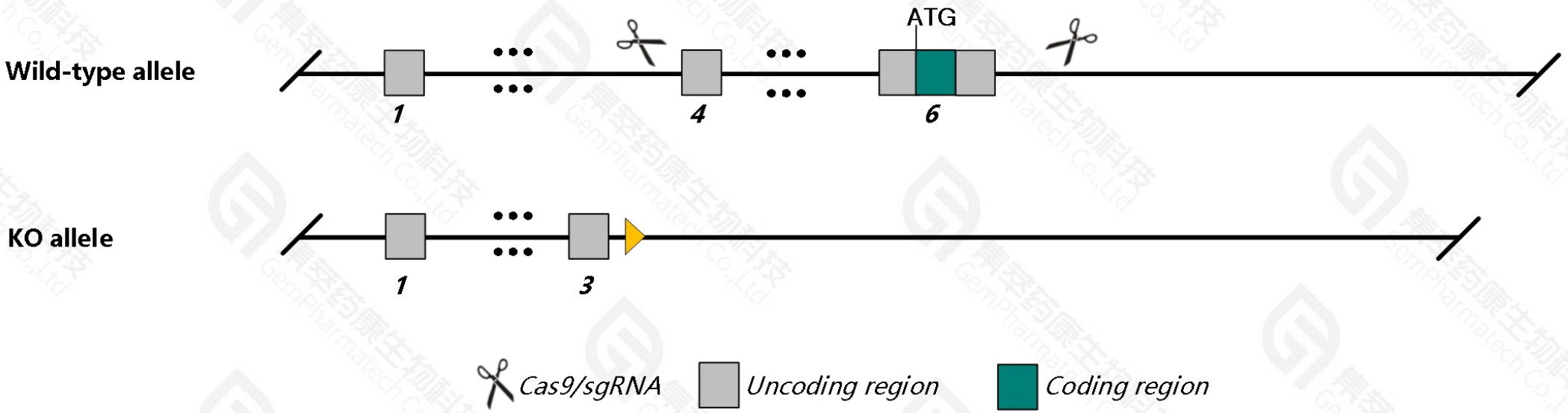
|---|---|
| **Project Name** | ***Tent5d*** |
| **Project type** | **Cas9-KO** |
| **Strain background** | **C57BL/6JGpt** |

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tent5d* gene. The schematic diagram is as follows:



# Technical routes

➢ The *Tent5d* gene has 4 transcripts. According to the structure of *Tent5d* gene, exon4-exon6 of *Tent5d-204*(ENSMUST00000167154.1) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Tent5d* 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.

# Notice

➢ The *Tent5d* gene is located on the ChrX. 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）

集萃药康 GemPharmatech

## Tent5d terminal nucleotidyltransferase 5D [Mus musculus (house mouse)]

Gene ID: 213449, updated on 13-Mar-2020

### Summary

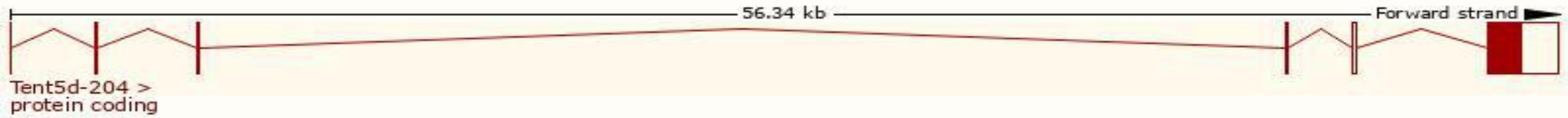
| | |
|---|---|
| **Official Symbol** | Tent5d provided by MGI |
| **Official Full Name** | terminal nucleotidyltransferase 5D provided byMGI |
| **Primary source** | MGI:MGI:2685223 |
| **See related** | Ensembl:ENSMUSG00000073007 |
| **Gene type** | protein coding |
| **RefSeq status** | VALIDATED |
| **Organism** | Mus musculus |
| **Lineage** | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus |
| **Also known as** | Fam46d, Gm377 |
| **Expression** | Restricted expression toward testis adult (RPKM 2.0)See more |
| **Orthologs** | human all |

# Transcript information（Ensembl）

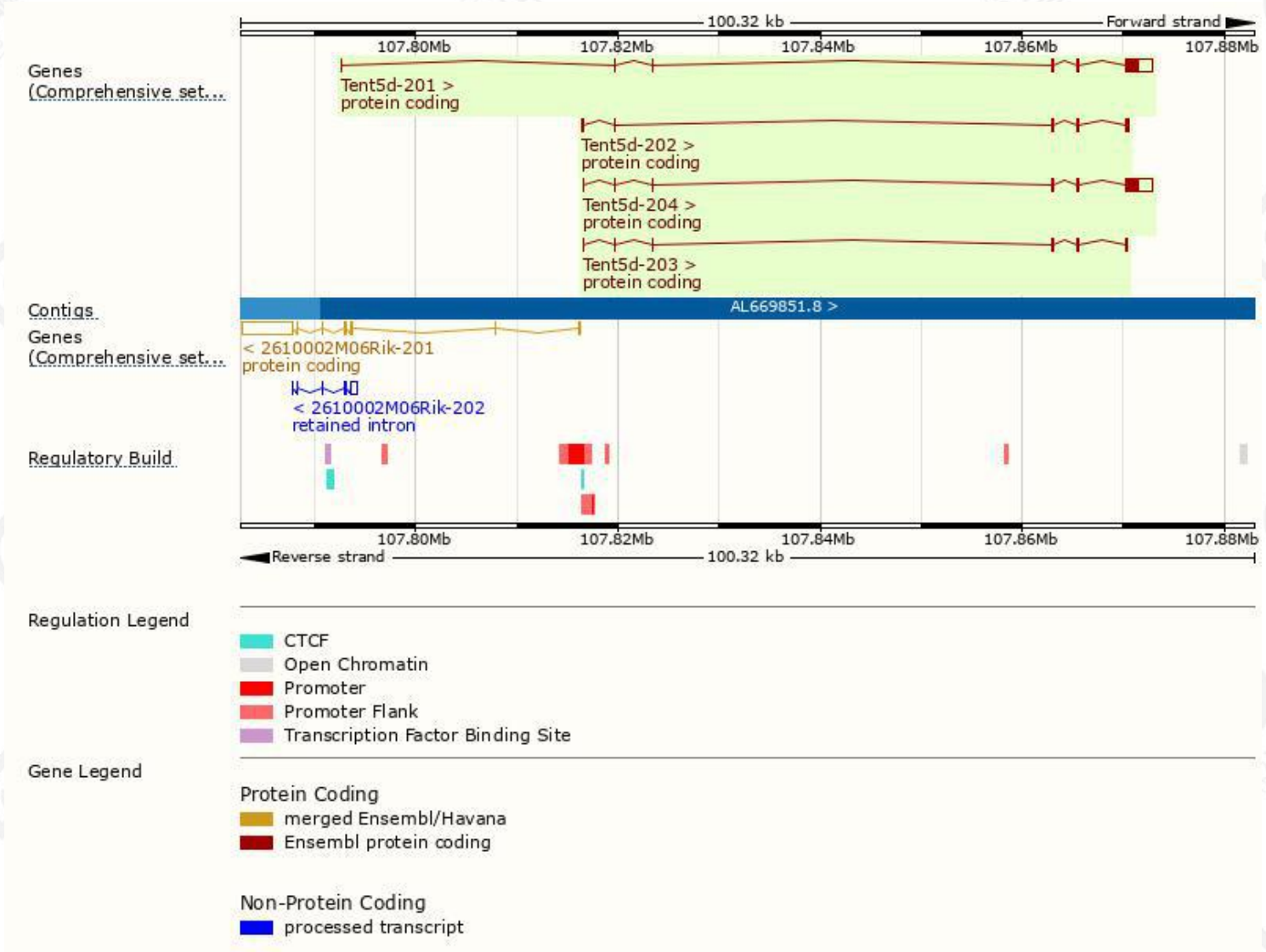
The gene has 4 transcripts,all transcripts are shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|---|---|---|---|---|---|---|---|
| **Tent5d-204** | ENSMUST00000167154.1 | 3004 | 390aa | Protein coding | CCDS53172 | B1ATX6 | TSL:3 GENCODE basic APPRIS P1 |
| **Tent5d-201** | ENSMUST00000101292.8 | 2995 | 390aa | Protein coding | CCDS53172 | B1ATX6 | TSL:1 GENCODE basic APPRIS P1 |
| **Tent5d-202** | ENSMUST00000143975.7 | 678 | 82aa | Protein coding | - | B1ATX5 | CDS 3' incomplete TSL:3 |
| **Tent5d-203** | ENSMUST00000144695.7 | 495 | 29aa | Protein coding | - | B1ATX4 | CDS 3' incomplete TSL:3 |

The strategy is based on the design of *Tent5d-204* transcript,the transcription is shown below:



# Genomic location distribution



# Protein domain

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

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