

# ***Trmt10b* Cas9-KO Strategy**

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# Project Overview

**Project Name**

***Trmt10b***

**Project type**

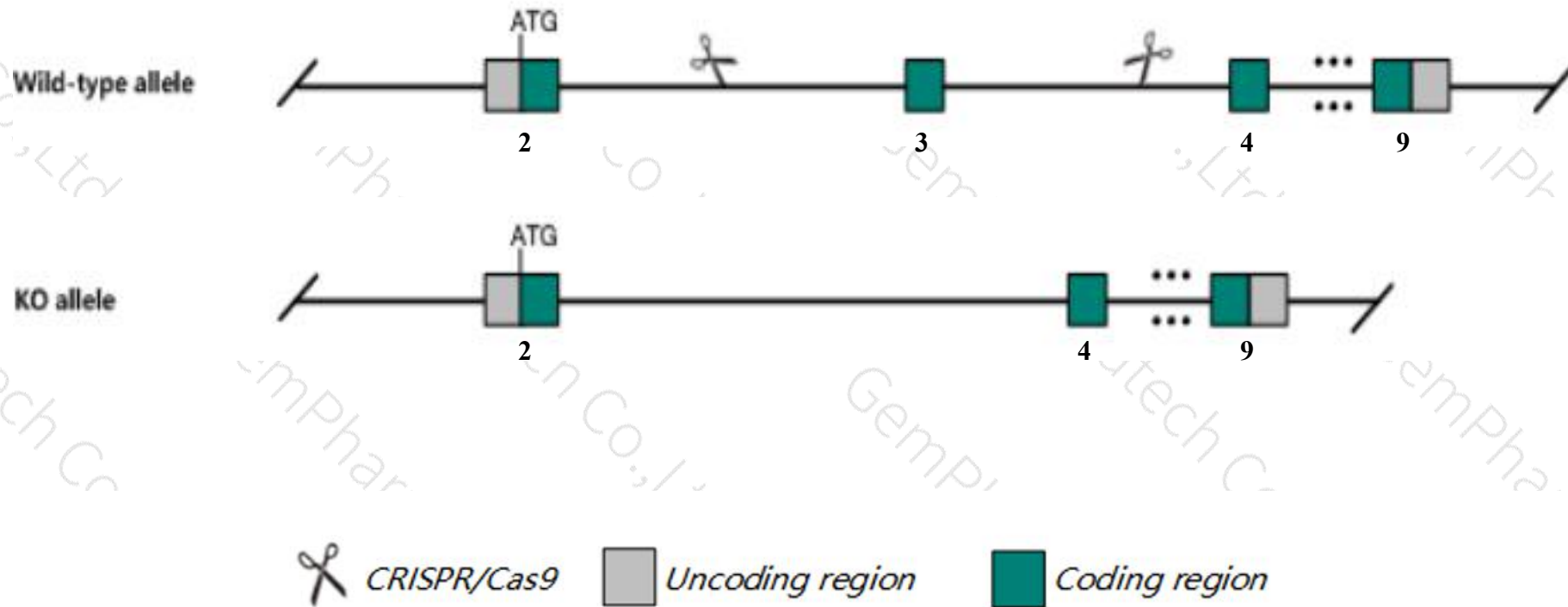
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trmt10b* gene. The schematic diagram is as follows:



- The *Trmt10b* gene has 7 transcripts. According to the structure of *Trmt10b* gene, exon3 of *Trmt10b-201* (ENSMUST00000044673.8) transcript is recommended as the knockout region. The region contains 115bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Trmt10b* gene. The brief process is as follows: CRISPR/Cas9 system

- The effect on transcript *Trmt10b*-203 is unknown.
- Transcript *Trmt10b*-207 may not be affected.
- The *Trmt10b* gene is located on the Chr4. 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)

## Trmt10b tRNA methyltransferase 10B [Mus musculus (house mouse)]

Gene ID: 69934, updated on 13-Mar-2020

### Summary



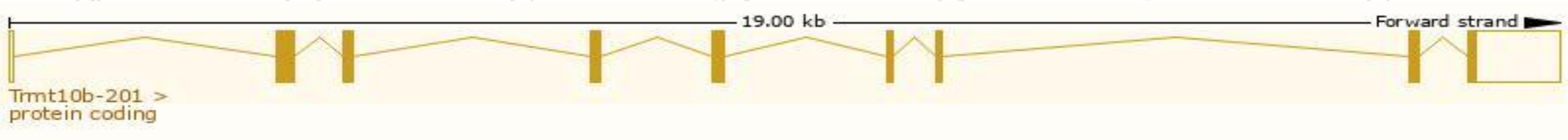
<b>Official Symbol</b>	Trmt10b provided by <a href="#">MGI</a>
<b>Official Full Name</b>	tRNA methyltransferase 10B provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1917184</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG000000035601</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	PROVISIONAL
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	2610042J10Rik, Rg9mtd3, Rnmtd3
<b>Expression</b>	Ubiquitous expression in CNS E18 (RPKM 4.1), CNS E11.5 (RPKM 4.0) and 25 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information（Ensembl）

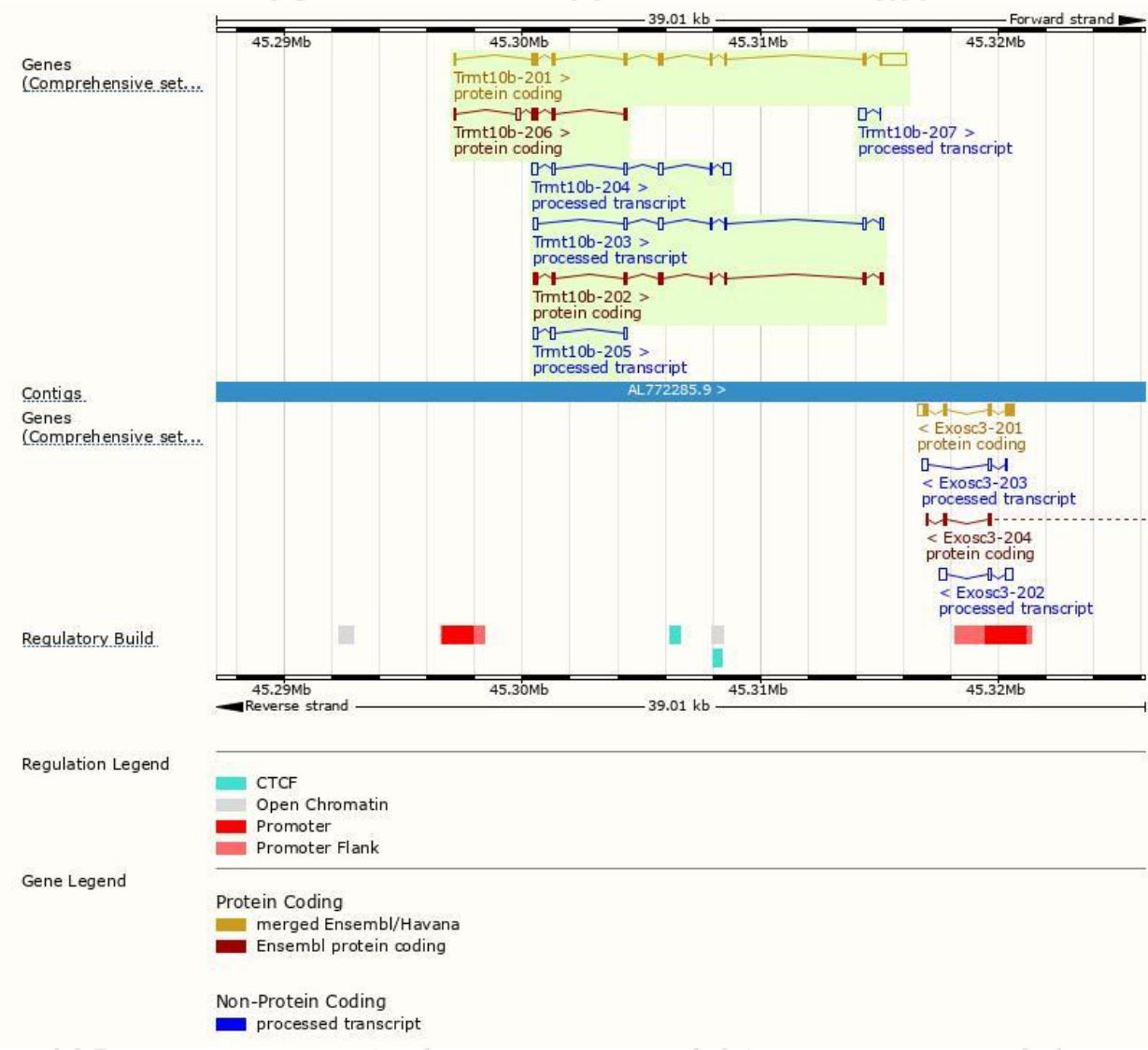
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trmt10b-201	<a href="#">ENSMUST00000044673.8</a>	2064	<a href="#">318aa</a>	Protein coding	<a href="#">CCDS18135</a>	<a href="#">Q9D075</a>	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P2
Trmt10b-202	<a href="#">ENSMUST00000107800.2</a>	983	<a href="#">316aa</a>	Protein coding	-	<a href="#">Z4YKN9</a>	TSL:5 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS ALT2
Trmt10b-206	<a href="#">ENSMUST00000144781.2</a>	643	<a href="#">141aa</a>	Protein coding	-	<a href="#">Z4YLM5</a>	CDS 3' incomplete TSL:3
Trmt10b-204	<a href="#">ENSMUST00000141659.7</a>	963	No protein	Processed transcript	-	-	TSL:5
Trmt10b-203	<a href="#">ENSMUST00000126972.1</a>	874	No protein	Processed transcript	-	-	TSL:5
Trmt10b-205	<a href="#">ENSMUST00000142785.7</a>	459	No protein	Processed transcript	-	-	TSL:5
Trmt10b-207	<a href="#">ENSMUST00000145756.1</a>	346	No protein	Processed transcript	-	-	TSL:2

The strategy is based on the design of *Trmt10b-201* transcript,the transcription is shown below:

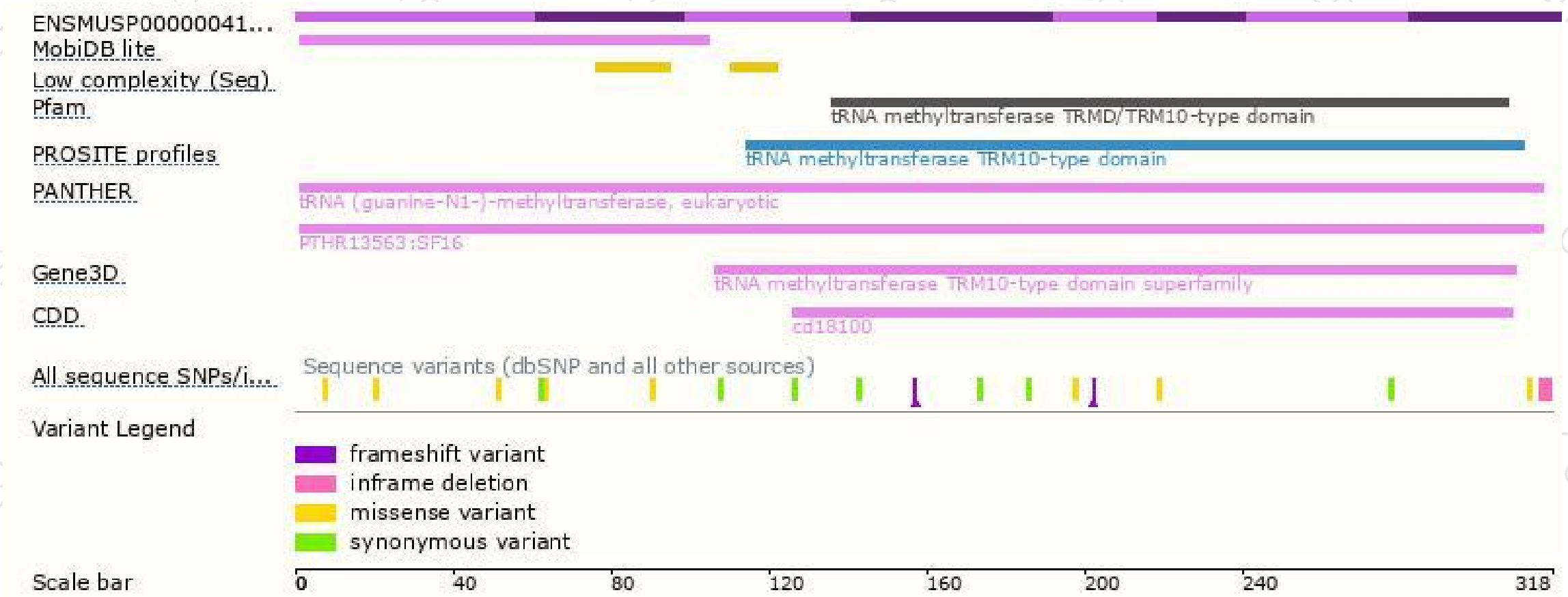


# Genomic location distribution





# Protein domain



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

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