

# *Prmt7* Cas9-KO Strategy

Designer: Xiaojing Li

Reviewer: Jia Yu

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# Project Overview

**Project Name**

*Prmt7*

**Project type**

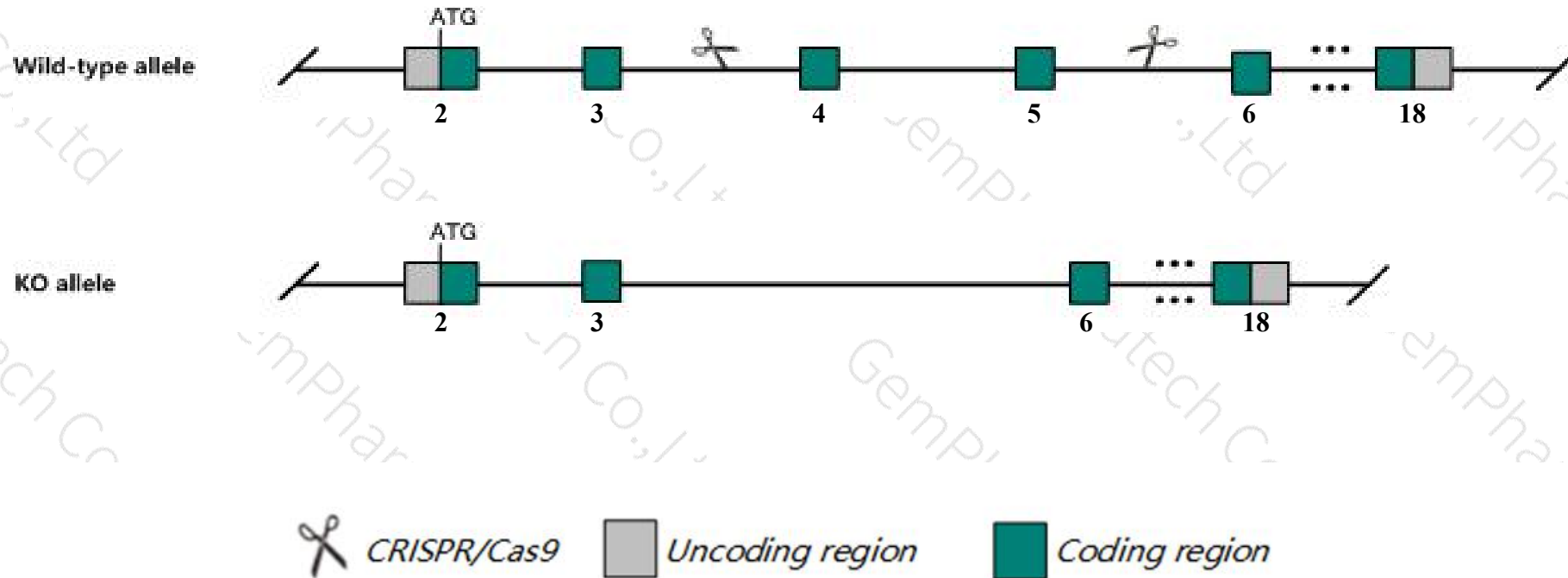
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prmt7* gene. The schematic diagram is as follows:



- The *Prmt7* gene has 7 transcripts. According to the structure of *Prmt7* gene, exon4-exon5 of *Prmt7-201* (ENSMUST00000071592.11) transcript is recommended as the knockout region. The region contains 259bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Prmt7* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Prmt7* 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 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)

## Prmt7 protein arginine N-methyltransferase 7 [ *Mus musculus* (house mouse) ]

Gene ID: 214572, updated on 10-Oct-2019

### Summary

Official Symbol	Prmt7 provided by <a href="#">MGI</a>
Official Full Name	protein arginine N-methyltransferase 7 provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:2384879</a>
See related	<a href="#">Ensembl:ENSMUSG00000060098</a>
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC006705; 4933402B05Rik
Expression	Ubiquitous expression in testis adult (RPKM 37.9), ovary adult (RPKM 19.4) and 28 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

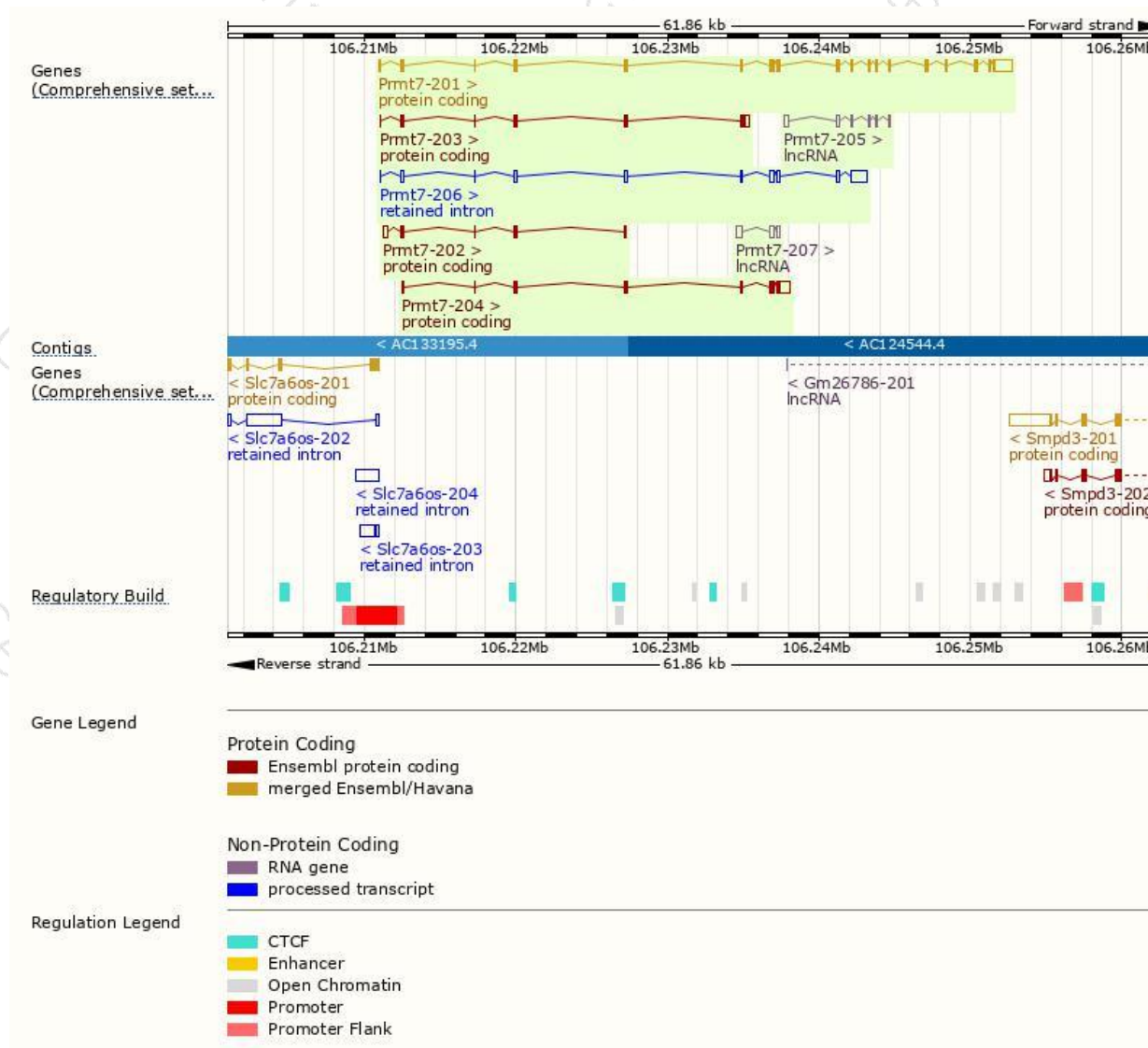
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Prmt7-201	<a href="#">ENSMUST00000071592.11</a>	3472	<a href="#">692aa</a>	Protein coding	<a href="#">CCDS22633</a>	<a href="#">Q922X9</a>	TSL:1 GENCODE basic APPRIS P1
Prmt7-204	<a href="#">ENSMUST00000128201.1</a>	1535	<a href="#">298aa</a>	Protein coding	-	<a href="#">F6RXJ8</a>	CDS 5' incomplete TSL:1
Prmt7-203	<a href="#">ENSMUST00000109297.7</a>	1094	<a href="#">217aa</a>	Protein coding	-	<a href="#">D3Z1C9</a>	TSL:1 GENCODE basic
Prmt7-202	<a href="#">ENSMUST00000109296.7</a>	747	<a href="#">113aa</a>	Protein coding	-	<a href="#">D3Z1D0</a>	CDS 3' incomplete TSL:3
Prmt7-206	<a href="#">ENSMUST00000147063.7</a>	2277	No protein	Retained intron	-	-	TSL:1
Prmt7-207	<a href="#">ENSMUST00000153272.1</a>	851	No protein	lncRNA	-	-	TSL:2
Prmt7-205	<a href="#">ENSMUST00000134151.1</a>	660	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of *Prmt7-201* transcript,The transcription is shown below

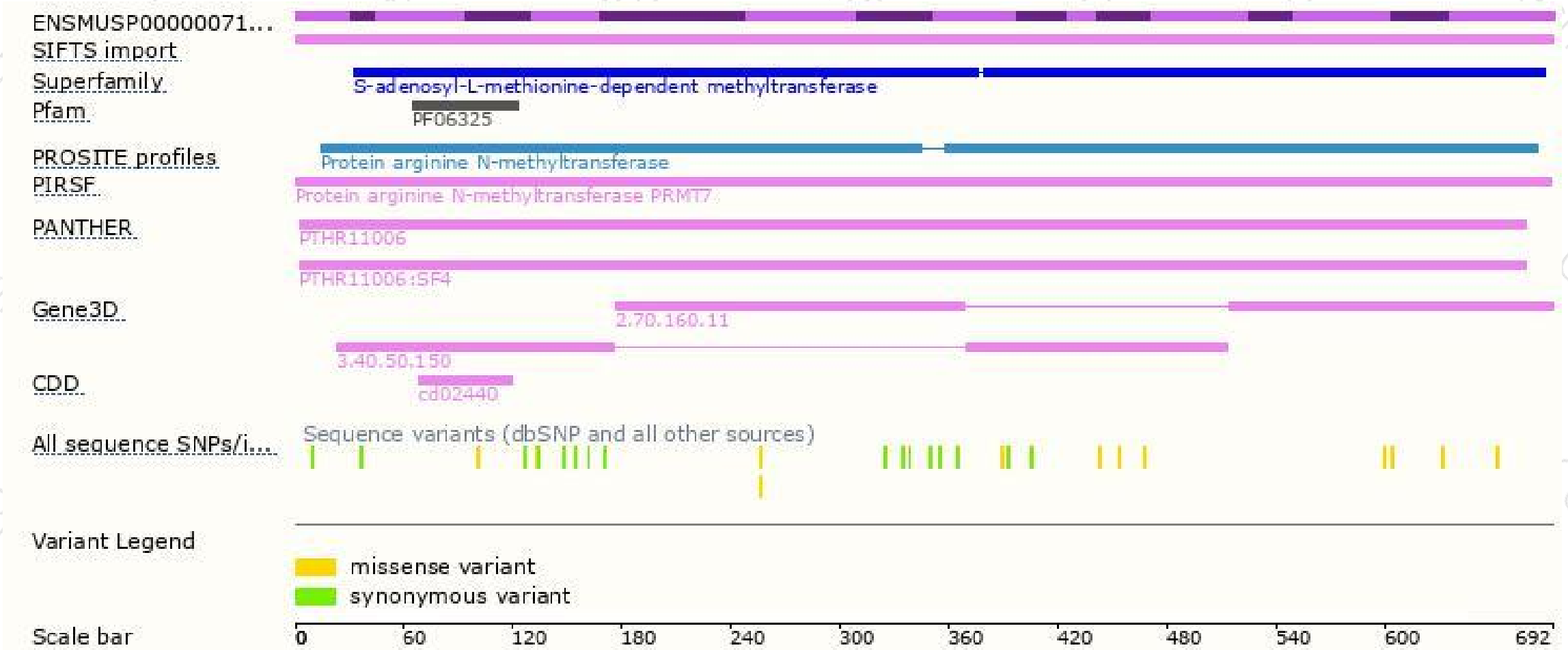


# Genomic location distribution

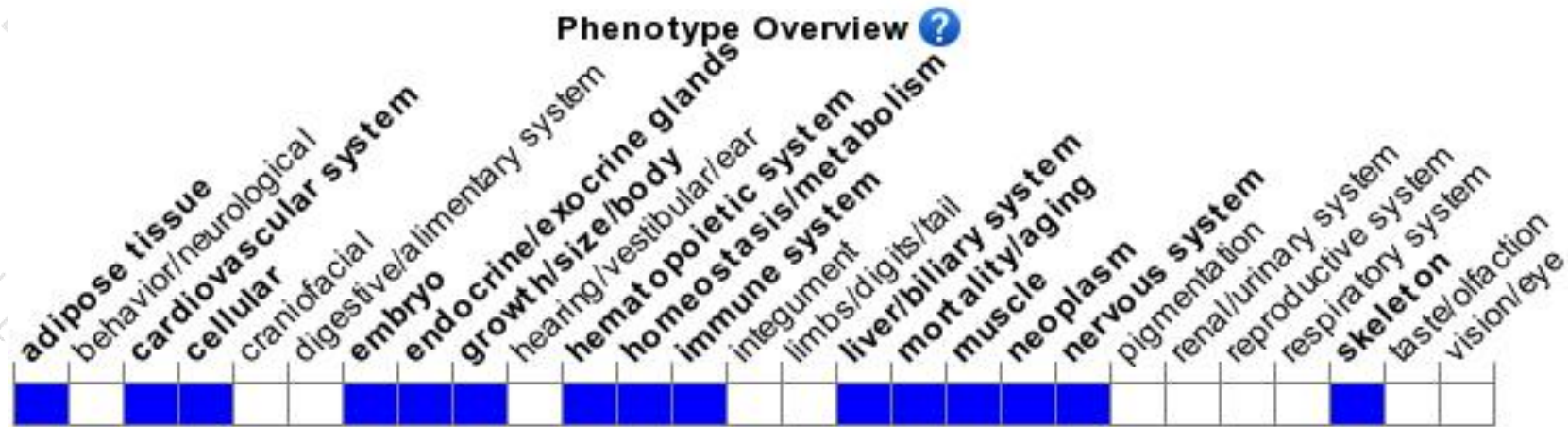




# Protein domain



# 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.

Tel: 400-9660890

