

# *Syt3* Cas9-KO Strategy

**Designer:**

**JiaYu**

**Reviewer:**

**Xiaojing Li**

**Design Date:**

**2020-2-12**

# Project Overview

**Project Name**

*Syt3*

**Project type**

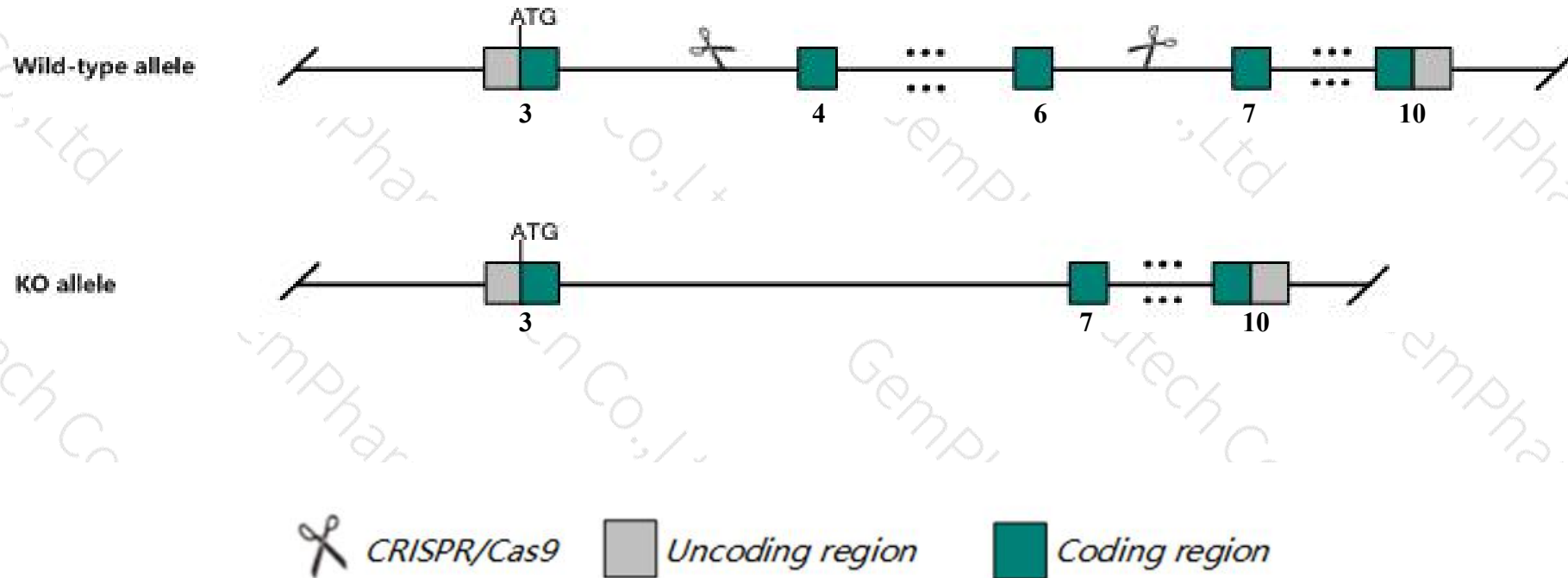
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Syt3* gene. The schematic diagram is as follows:



- The *Syt3* gene has 6 transcripts. According to the structure of *Syt3* gene, exon4-exon6 of *Syt3-201* (ENSMUST00000118831.7) transcript is recommended as the knockout region. The region contains 1121bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Syt3* gene. The brief process is as follows: CRISPR/Cas9 system w

- The *Syt3* gene is located on the Chr7. 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.
- Transcript 204,205 CDS 3' incomplete the influences is unknown.
- 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)

## Syt3 synaptotagmin III [Mus musculus (house mouse)]

Gene ID: 20981, updated on 31-Jan-2019

### Summary



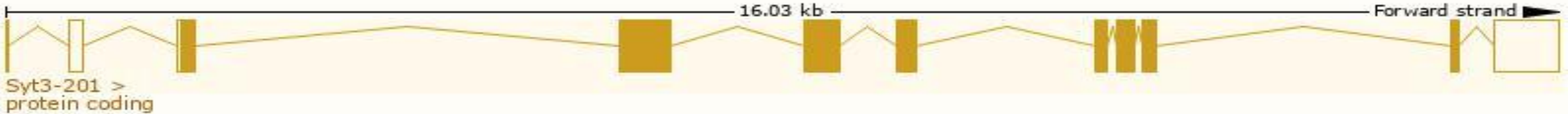
<b>Official Symbol</b>	Syt3 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	synaptotagmin III provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:99665</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000030731</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<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>	AI385753, sytIII
<b>Expression</b>	Biased expression in cerebellum adult (RPKM 17.0), cortex adult (RPKM 9.0) and 14 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

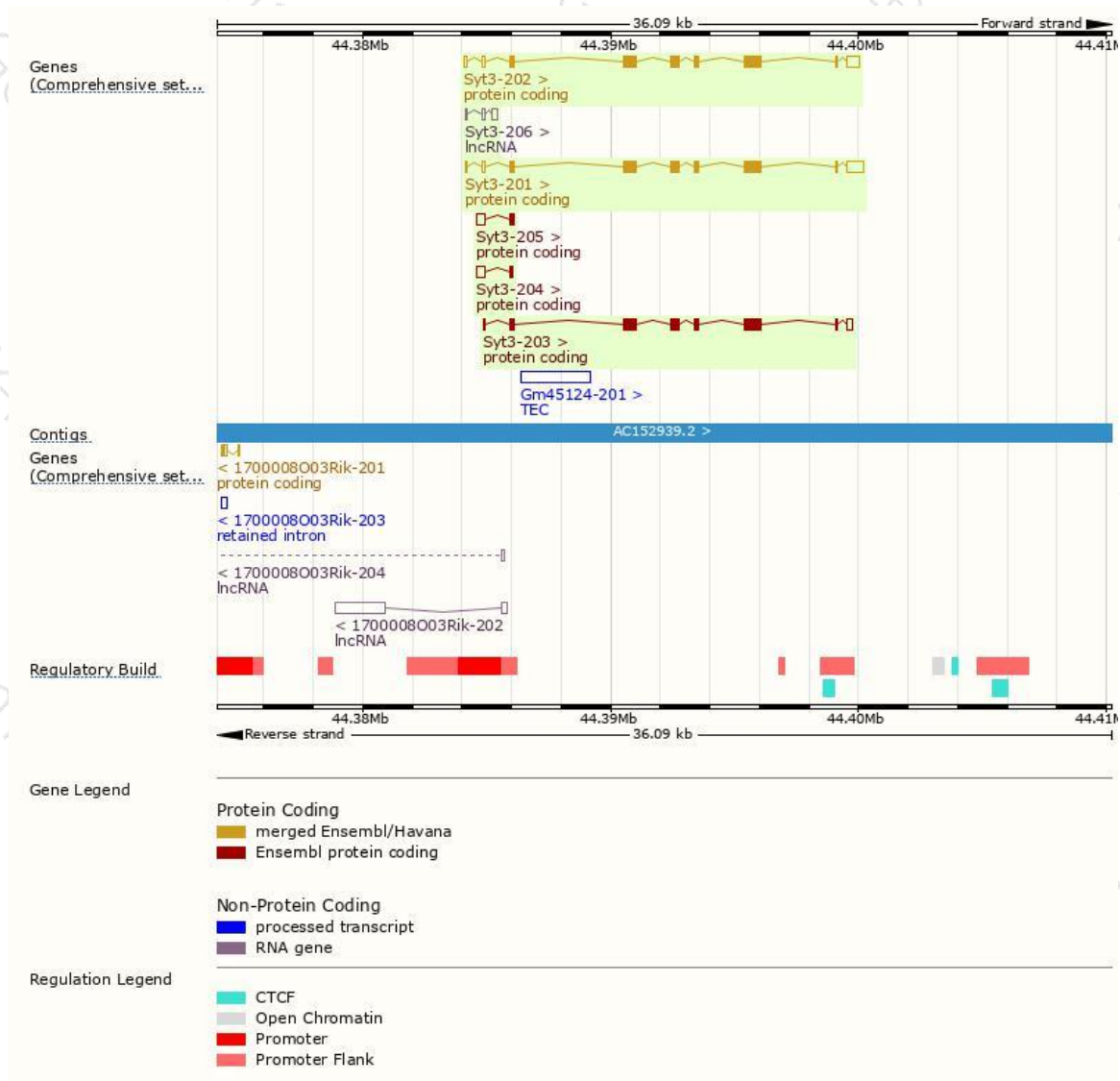
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Syt3-201	<a href="#">ENSMUST00000118831.7</a>	2627	<a href="#">587aa</a>	Protein coding	<a href="#">CCDS21205</a>	<a href="#">G3X9Y1</a>	TSL:5 GENCODE basic APPRIS P1
Syt3-202	<a href="#">ENSMUST00000118962.7</a>	2494	<a href="#">587aa</a>	Protein coding	<a href="#">CCDS21205</a>	<a href="#">G3X9Y1</a>	TSL:5 GENCODE basic APPRIS P1
Syt3-203	<a href="#">ENSMUST00000120262.1</a>	2096	<a href="#">587aa</a>	Protein coding	<a href="#">CCDS21205</a>	<a href="#">G3X9Y1</a>	TSL:5 GENCODE basic APPRIS P1
Syt3-205	<a href="#">ENSMUST00000130844.2</a>	539	<a href="#">50aa</a>	Protein coding	-	<a href="#">D3YYS0</a>	CDS 3' incomplete TSL:2
Syt3-204	<a href="#">ENSMUST00000130707.7</a>	442	<a href="#">27aa</a>	Protein coding	-	<a href="#">D3Z1B8</a>	CDS 3' incomplete TSL:2
Syt3-206	<a href="#">ENSMUST00000132399.7</a>	431	No protein	lncRNA	-	-	TSL:2

The strategy is based on the design of *Syt3-201* transcript,The transcription is shown below

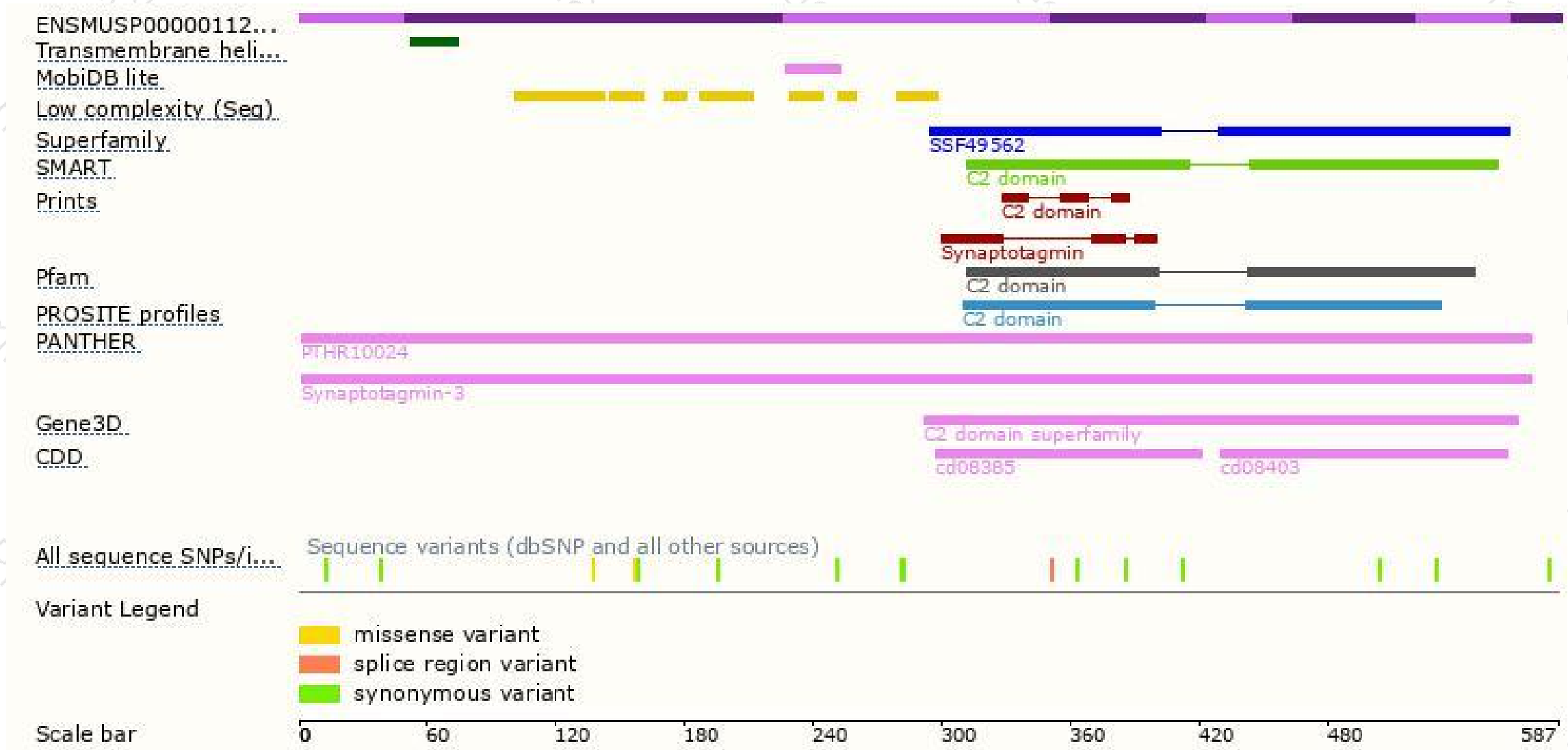


# Genomic location distribution





# Protein domain



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

Tel: 400-9660890

