

Syt3 Cas9-CKO Strategy

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Design Date:

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Project Overview

Project Name

Syt3

Project type

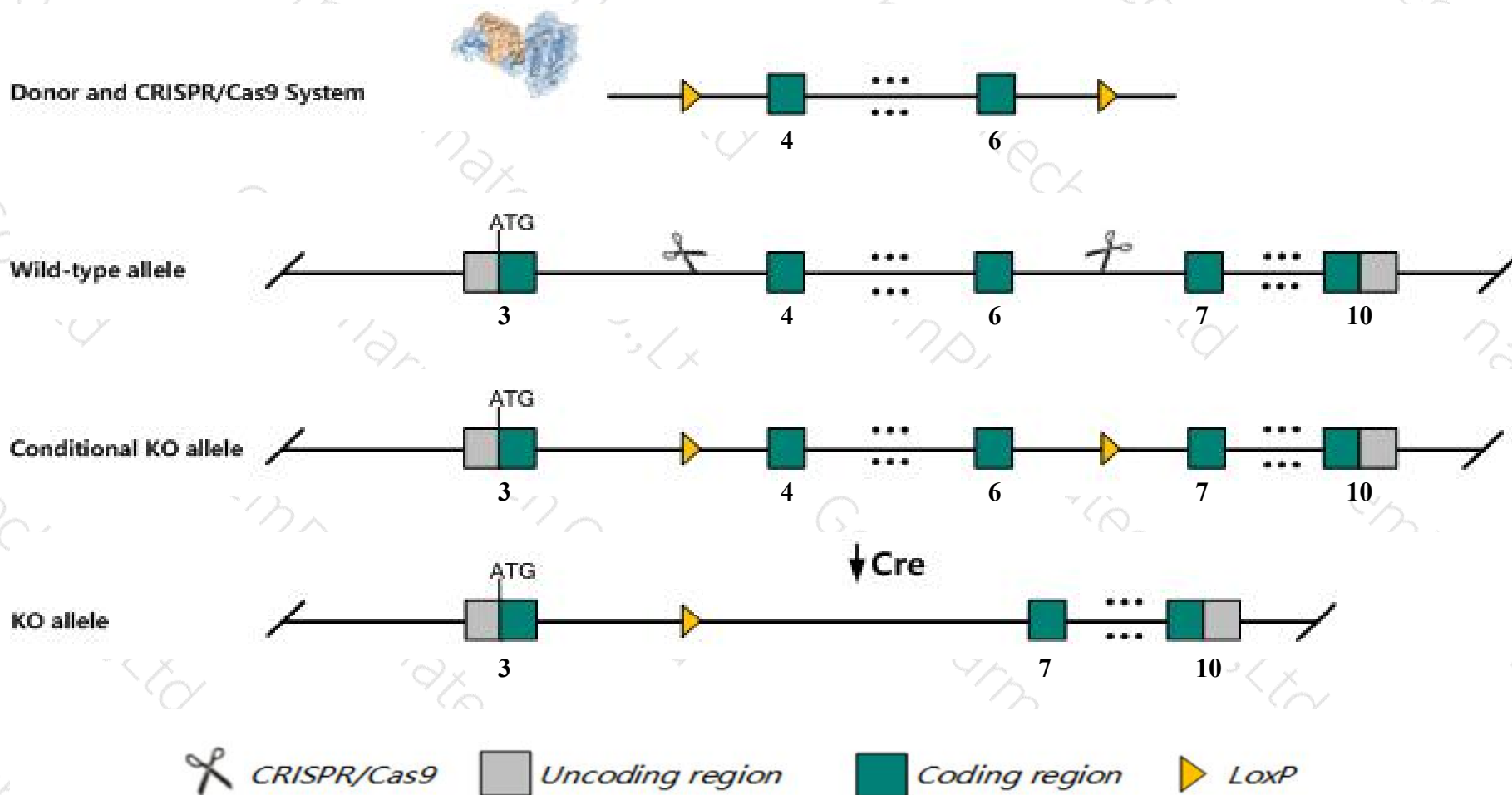
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional 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 and Donor 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.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Syt3 synaptotagmin III [Mus musculus (house mouse)]

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

Summary



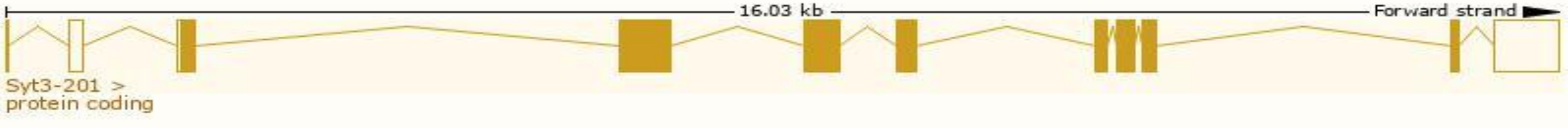
Official Symbol	Syt3 provided by MGI
Official Full Name	synaptotagmin III provided by MGI
Primary source	MGI:MGI:99665
See related	Ensembl:ENSMUSG00000030731
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI385753, sytIII
Expression	Biased expression in cerebellum adult (RPKM 17.0), cortex adult (RPKM 9.0) and 14 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

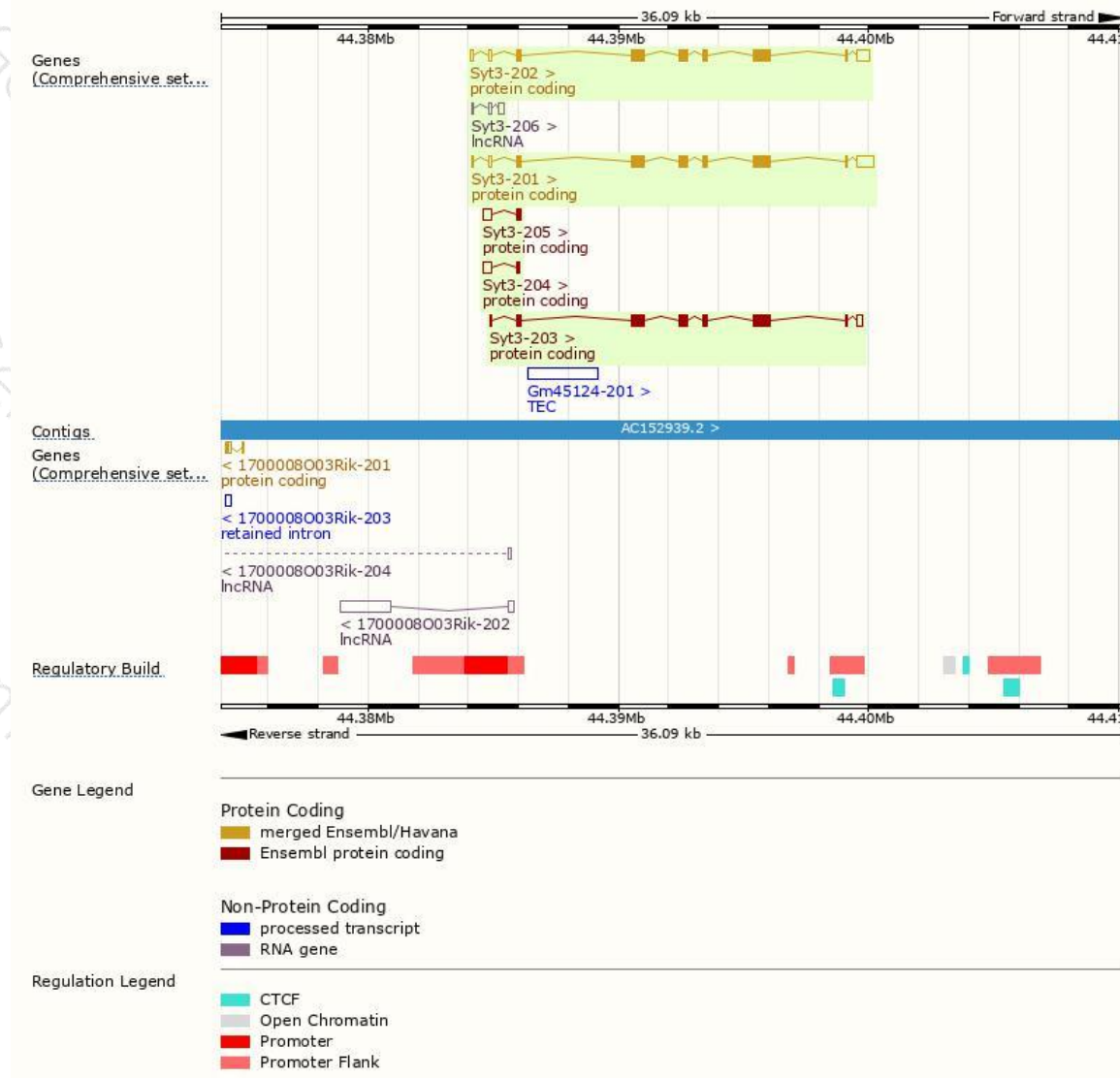
The gene has 6 transcripts,all transcripts are shown below:

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

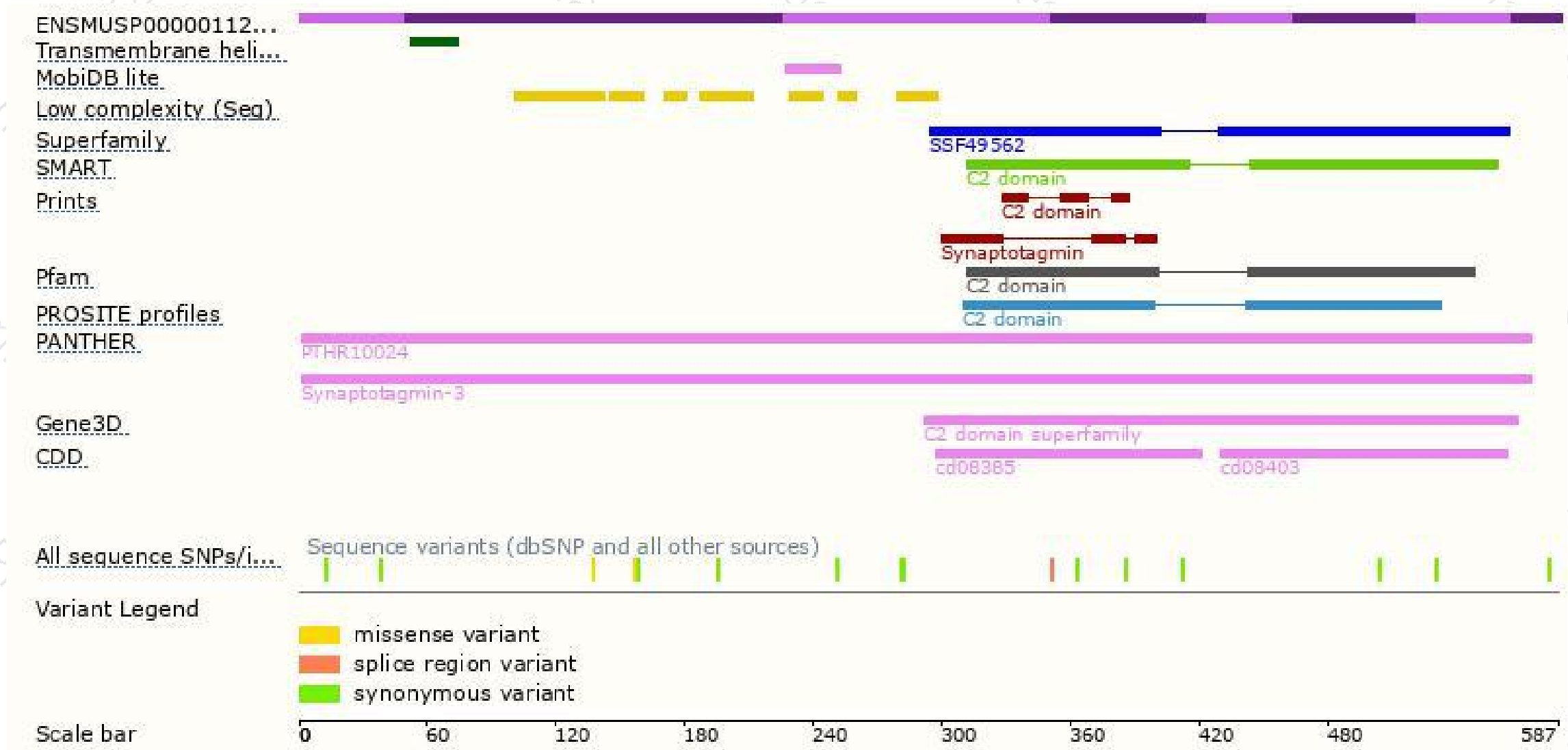
The strategy is based on the design of *Syt3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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