

Syt11 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Syt11

Project type

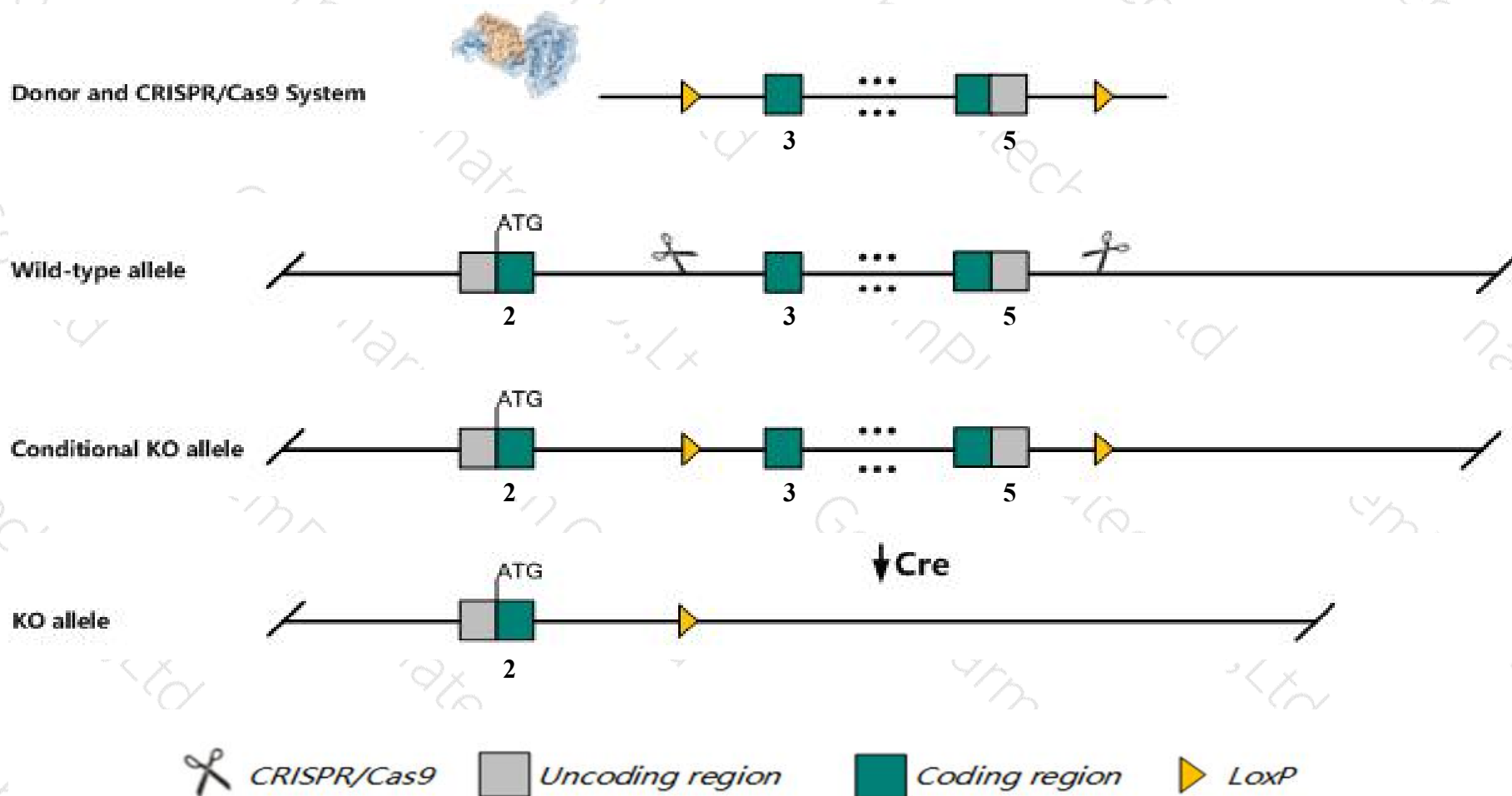
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Syt11* gene. The schematic diagram is as follows:



Technical routes

- The *Syt11* gene has 5 transcripts. According to the structure of *Syt11* gene, exon3-exon5 of *Syt11-203* (ENSMUST00000107505.7) transcript is recommended as the knockout region. The region contains 1259bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Syt11* 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.

- According to the existing MGI data, Homozygous mutation of this gene results in no obvious abnormal phenotype.
- The *Syt11* gene is located on the Chr3. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Syt11 synaptotagmin XI [Mus musculus (house mouse)]

Gene ID: 229521, updated on 2-Apr-2019

Summary



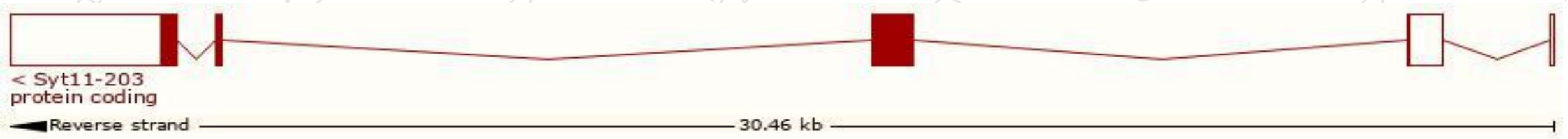
Official Symbol	Syt11 provided by MGI
Official Full Name	synaptotagmin XI provided by MGI
Primary source	MGI:MGI:1859547
See related	Ensembl:ENSMUSG00000068923
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1500004A13Rik, 3632445O20Rik, 5430404N14Rik, 6530420C11Rik, AI851970
Expression	Biased expression in cortex adult (RPKM 100.4), cerebellum adult (RPKM 98.9) and 6 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

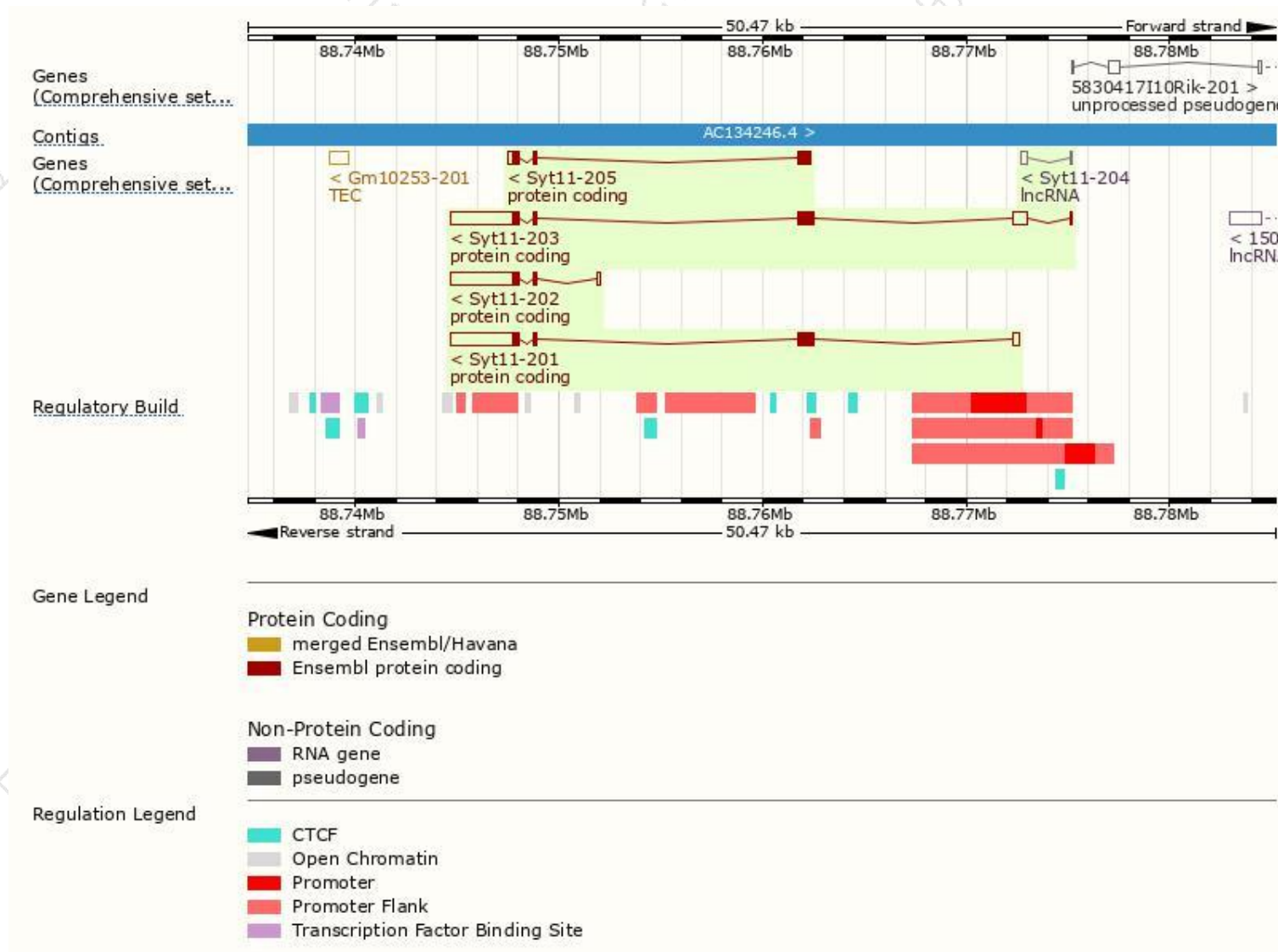
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Syt11-203	ENSMUST00000107505.7	5020	430aa	Protein coding	CCDS38484	Q9R0N3	TSL:1 GENCODE basic APPRIS P1
Syt11-201	ENSMUST00000090945.4	4567	430aa	Protein coding	CCDS38484	Q9R0N3	TSL:1 GENCODE basic APPRIS P1
Syt11-202	ENSMUST00000107503.7	3575	124aa	Protein coding	-	D3YWW9	TSL:2 GENCODE basic
Syt11-205	ENSMUST00000183267.1	1319	363aa	Protein coding	-	S4R1M8	CDS 5' incomplete TSL:2
Syt11-204	ENSMUST00000130869.1	371	No protein	lncRNA	-	-	TSL:3

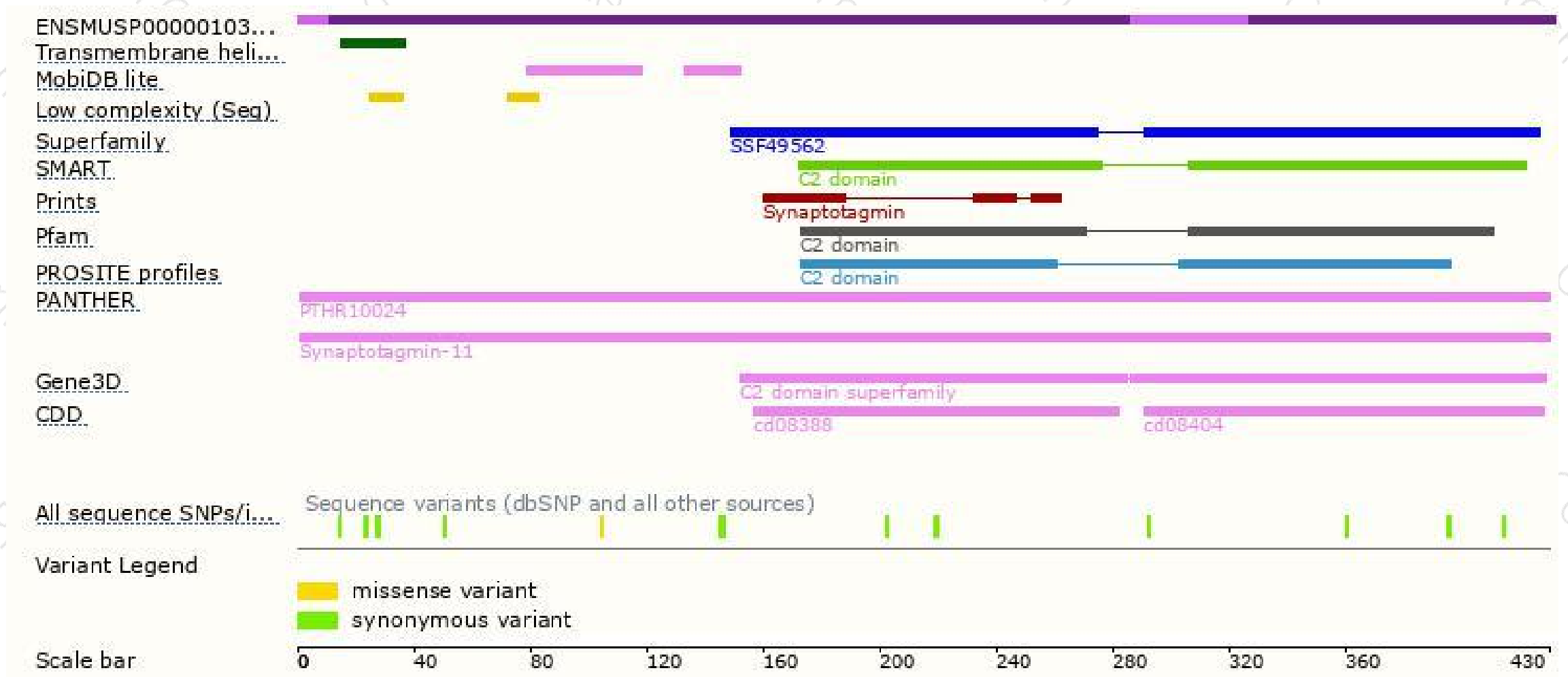
The strategy is based on the design of *Syt11-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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