Syt6 Cas9-KO Strategy

Designer: JiaYu

Reviewer: Xiaojing Li

Design Date: 2020-3-3

Project Overview

Project Name	***Syt6***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Syt6* gene. The schematic diagram is as follows:

Technical routes

➢ The *Syt6* gene has 9 transcripts. According to the structure of *Syt6* gene, exon3 of *Syt6-201* (ENSMUST00000090697.10) transcript is recommended as the knockout region.The region contains 562bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Syt6* gene. The brief process is as follows: CRISPR/Cas9 system w

Notice

➢ The *Syt6* 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.

➢Some amino acids will remain at the N-terminus and some functions may be retained.

➢ 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）

集萃药康 GemPharmatech

Syt6 synaptotagmin VI [Mus musculus (house mouse)]

Gene ID: 54524, updated on 31-Jan-2019

Summary

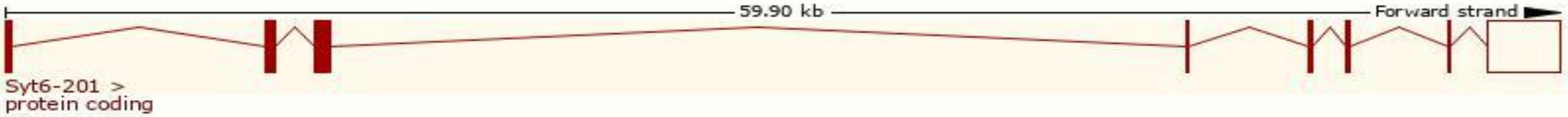
Official Symbol	Syt6 provided by MGI
Official Full Name	synaptotagmin VI provided by MGI
Primary source	MGI:MGI:1859544
See related	Ensembl:ENSMUSG00000027849
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	3110037A08Rik, AW048930, sytVI
Expression	Biased expression in frontal lobe adult (RPKM 13.3), CNS E18 (RPKM 5.5) and 6 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 9 transcripts,all transcripts are shown below:

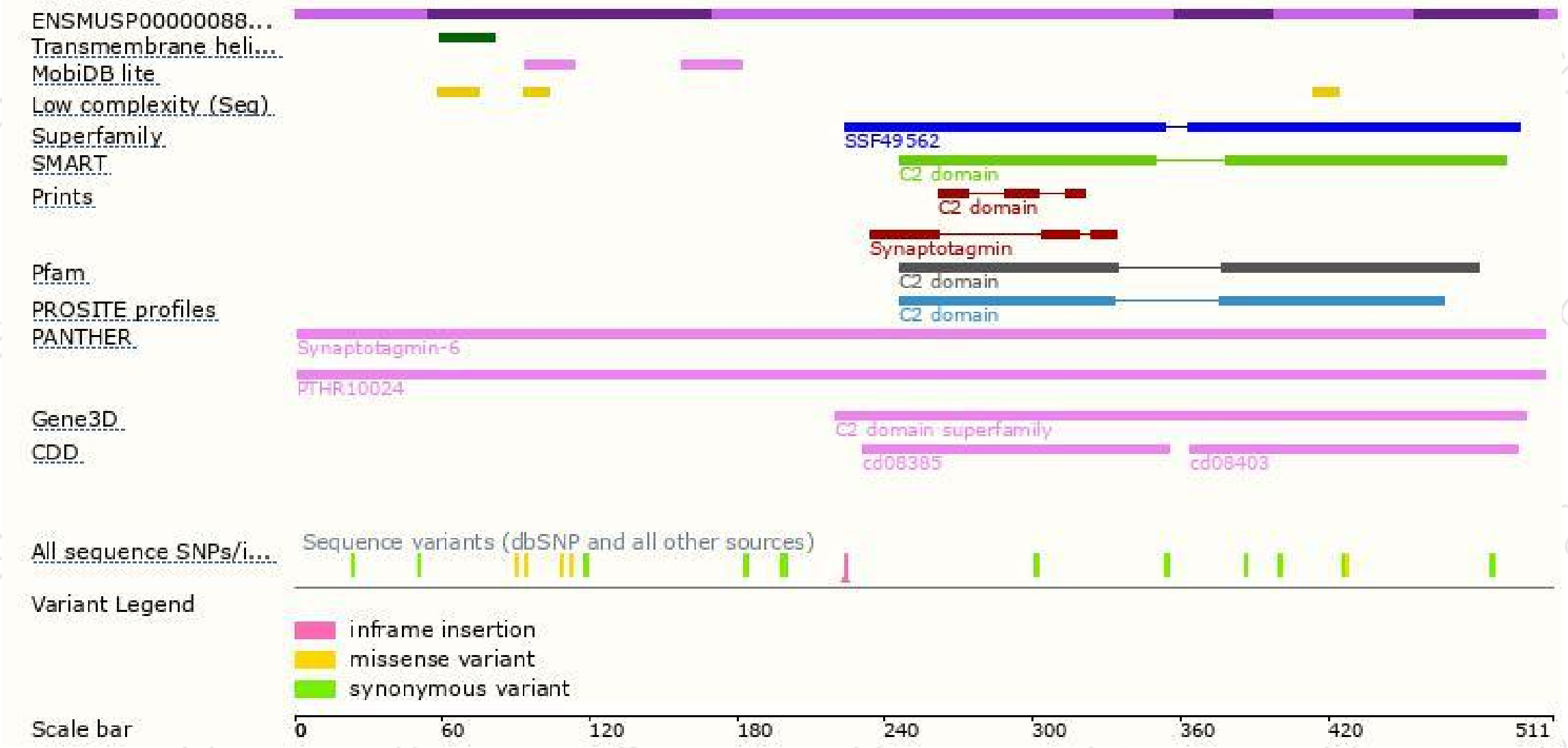
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Syt6-201	ENSMUST00000090697.10	4416	511aa	Protein coding	CCDS38575	Q9R0N8	TSL:5 GENCODE basic APPRIS P3
Syt6-202	ENSMUST00000117221.8	4394	426aa	Protein coding	CCDS71296	Q6P1H9 Q9R0N8	TSL:1 GENCODE basic APPRIS ALT2
Syt6-204	ENSMUST00000118563.2	1843	342aa	Protein coding	CCDS71297	Q3UY13	TSL:1 GENCODE basic
Syt6-205	ENSMUST00000121834.7	1710	511aa	Protein coding	CCDS38575	Q9R0N8	TSL:1 GENCODE basic APPRIS P3
Syt6-203	ENSMUST00000118117.7	1856	438aa	Protein coding	-	Q8C8S6	TSL:1 GENCODE basic APPRIS ALT2
Syt6-209	ENSMUST00000183637.7	578	88aa	Protein coding	-	V9GWX4	CDS 3' incomplete TSL:5
Syt6-206	ENSMUST00000132325.9	4264	71aa	Nonsense mediated decay	-	D6RHQ5	TSL:1
Syt6-207	ENSMUST00000136049.9	1903	71aa	Nonsense mediated decay	-	D6RHQ5	TSL:5
Syt6-208	ENSMUST00000151985.1	1527	93aa	Nonsense mediated decay	-	D6RIM4	TSL:1

The strategy is based on the design of *Syt6-201* transcript,The transcription is shown below



Genomic location distribution

Protein domain



集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd