

***Samd12* Cas9-CKO Strategy**

Designer: Xiaojing Li
Design Date: 2019-9-16
Reviewer: Jia Yu

Project Overview

Project Name

Samd12

Project type

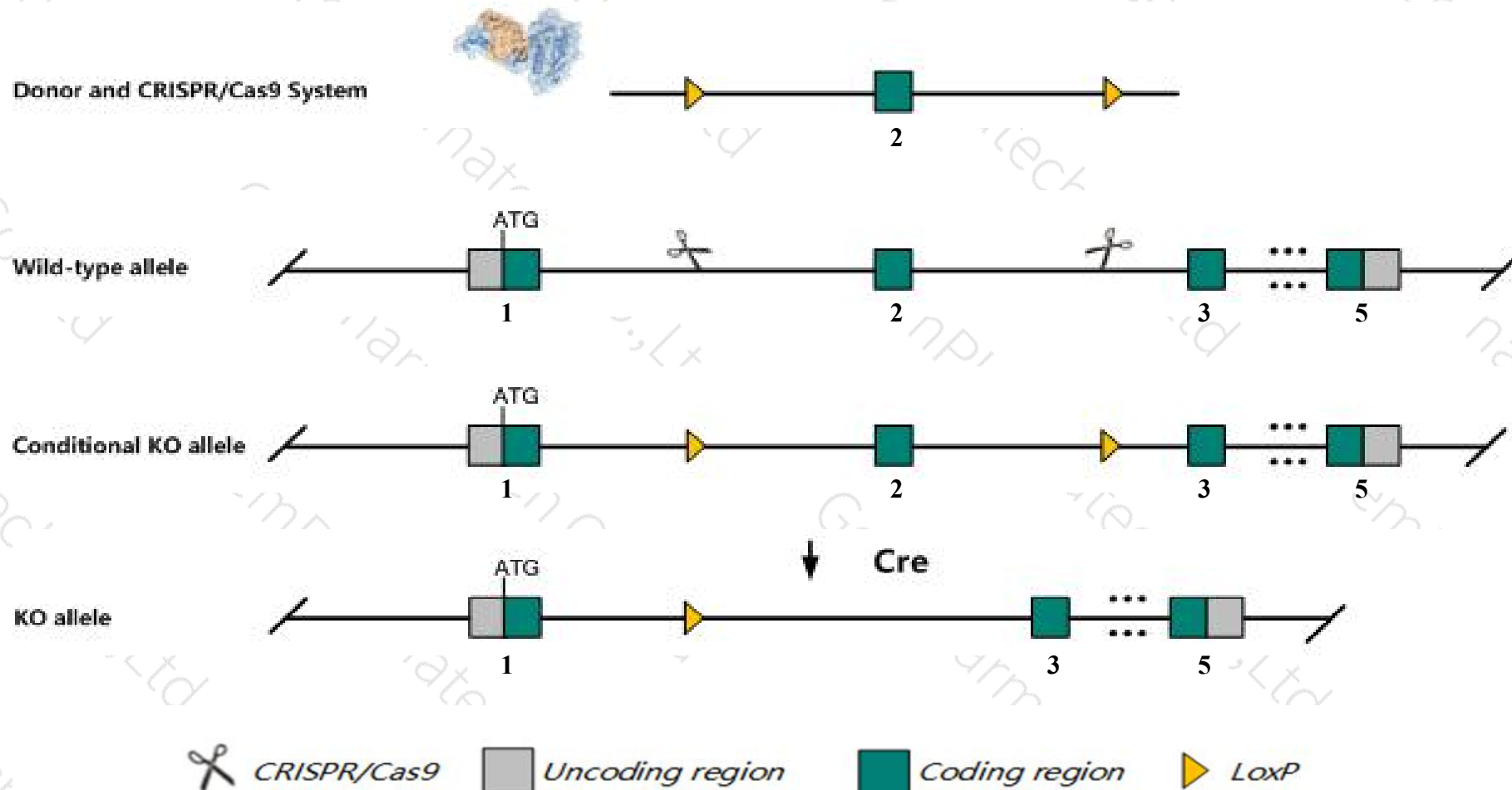
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Samd12* gene. The schematic diagram is as follows:



- The *Samd12* gene has 4 transcripts. According to the structure of *Samd12* gene, exon2 of *Samd12-201* (ENSMUST00000078673.13) transcript is recommended as the knockout region. The region contains 179bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Samd12* 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 *Samd12* gene is located on the Chr15. 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)

Samd12 sterile alpha motif domain containing 12 [Mus musculus (house mouse)]

Gene ID: 320679, updated on 31-Jan-2019

Summary



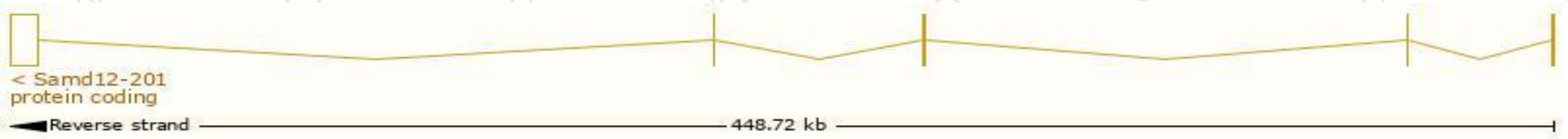
Official Symbol	Samd12 provided by MGI
Official Full Name	sterile alpha motif domain containing 12 provided by MGI
Primary source	MGI:MGI:2444518
See related	Ensembl:ENSMUSG00000058656
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A830094I09Rik
Expression	Biased expression in frontal lobe adult (RPKM 2.2), CNS E18 (RPKM 2.1) and 13 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

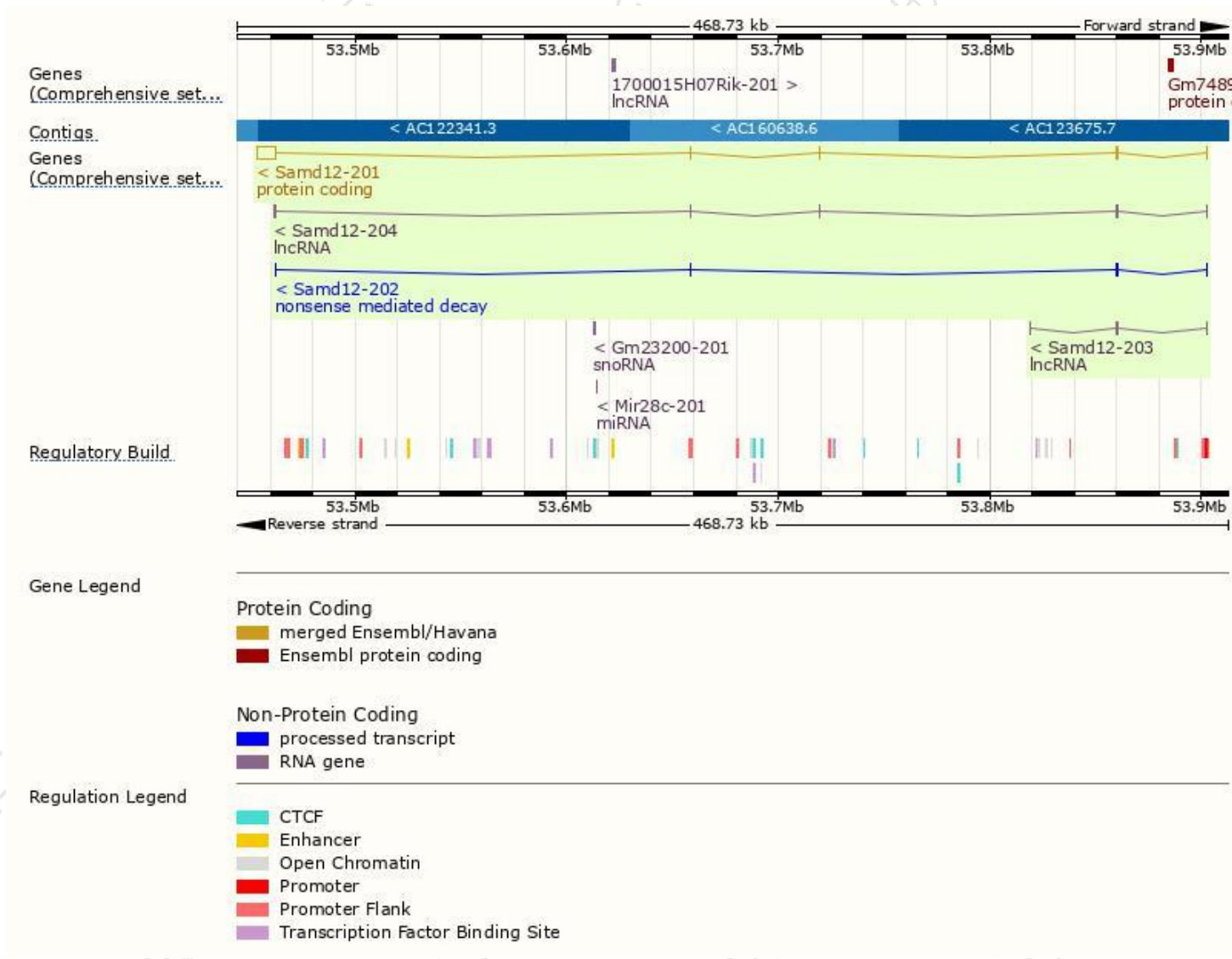
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Samd12-201	ENSMUST00000078673.13	9019	161aa	Protein coding	CCDS37072	Q0VE29	TSL:1 GENCODE basic APPRIS P1
Samd12-202	ENSMUST00000132059.1	356	68aa	Nonsense mediated decay	-	D6RCW1	TSL:5
Samd12-204	ENSMUST00000154119.7	1051	No protein	lncRNA	-	-	TSL:1
Samd12-203	ENSMUST00000132362.1	471	No protein	lncRNA	-	-	TSL:5

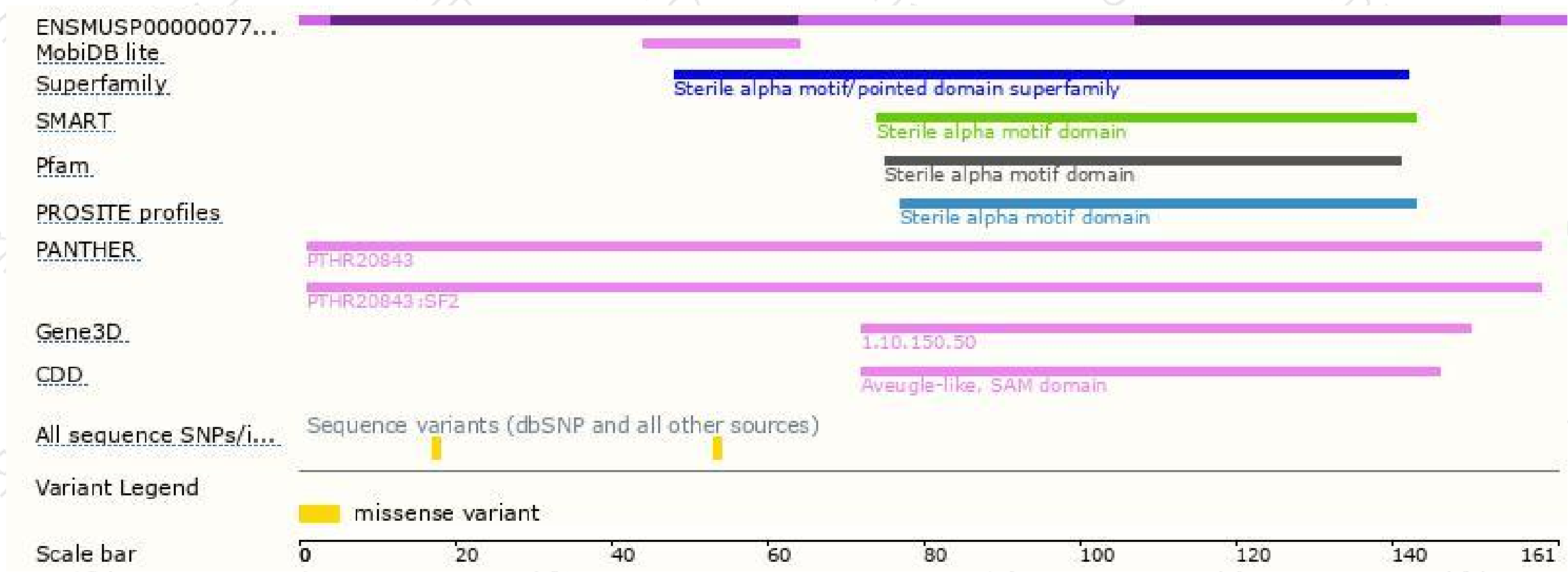
The strategy is based on the design of *Samd12-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

