

***Fstl5* Cas9-CKO Strategy**

Designer: Xiaojing Li

Reviewer: JiaYu

Design Date: 2020-8-24

Project Overview

Project Name

Fstl5

Project type

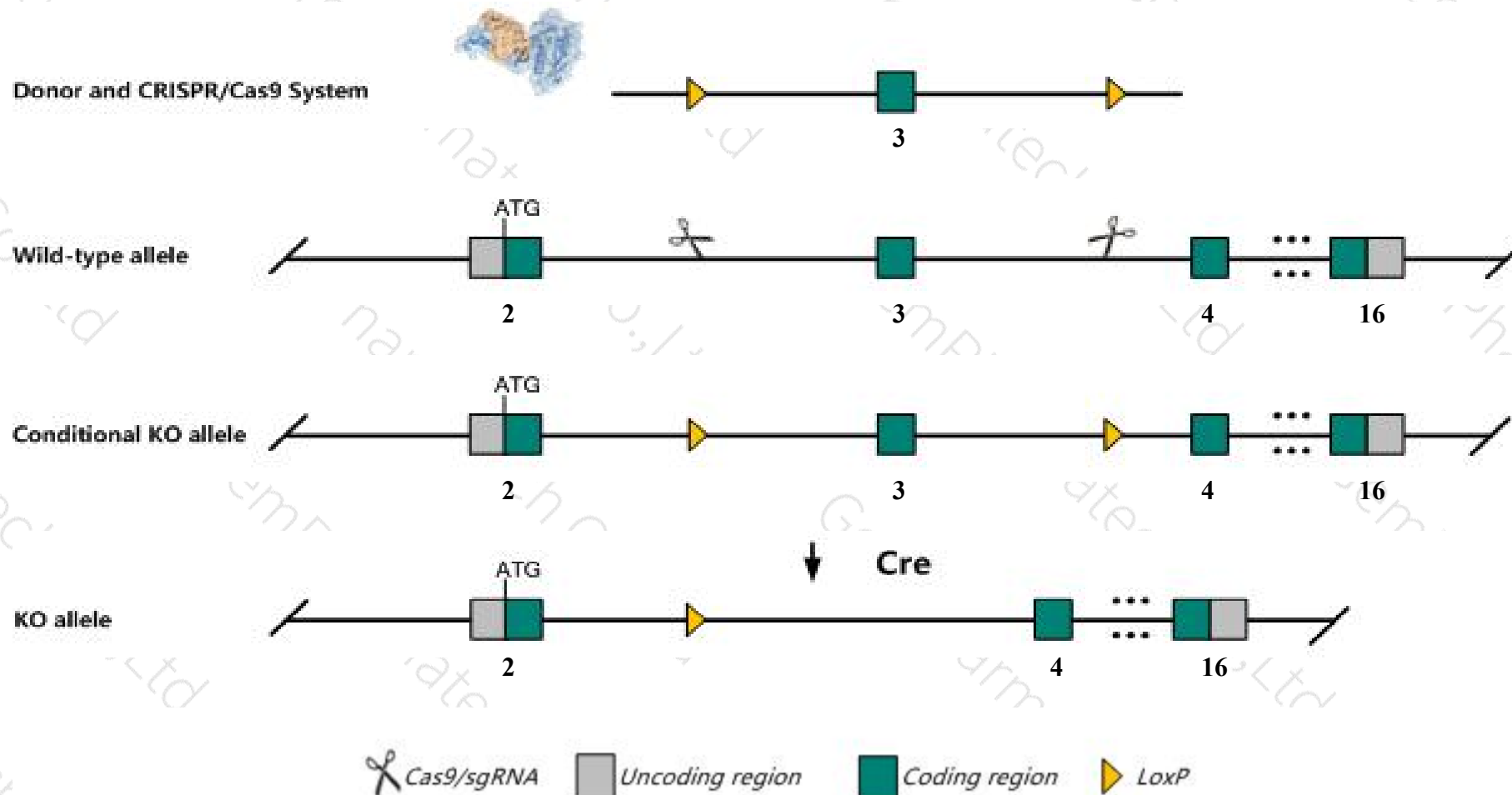
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fstl5* gene. The schematic diagram is as follows:



Technical routes

- The *Fstl5* gene has 5 transcripts. According to the structure of *Fstl5* gene, exon3 of *Fstl5-201*(ENSMUST00000038364.14) transcript is recommended as the knockout region. The region contains 34bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fstl5* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- The *Fstl5* 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)

Fstl5 follistatin-like 5 [Mus musculus (house mouse)]

Gene ID: 213262, updated on 13-Mar-2020

Summary



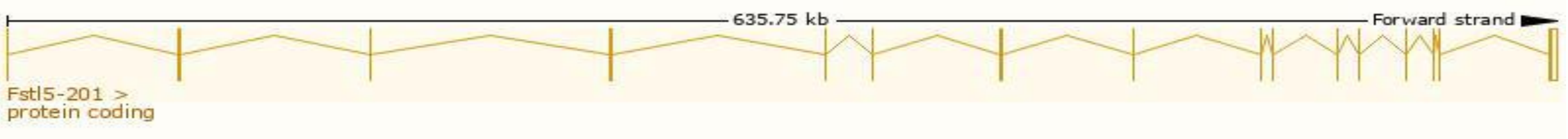
Official Symbol	Fstl5 provided by MGI
Official Full Name	follistatin-like 5 provided by MGI
Primary source	MGI:MGI:2442179
See related	Ensembl:ENSMUSG00000034098
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9130207J01Rik
Expression	Biased expression in CNS E18 (RPKM 5.6), whole brain E14.5 (RPKM 4.6) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

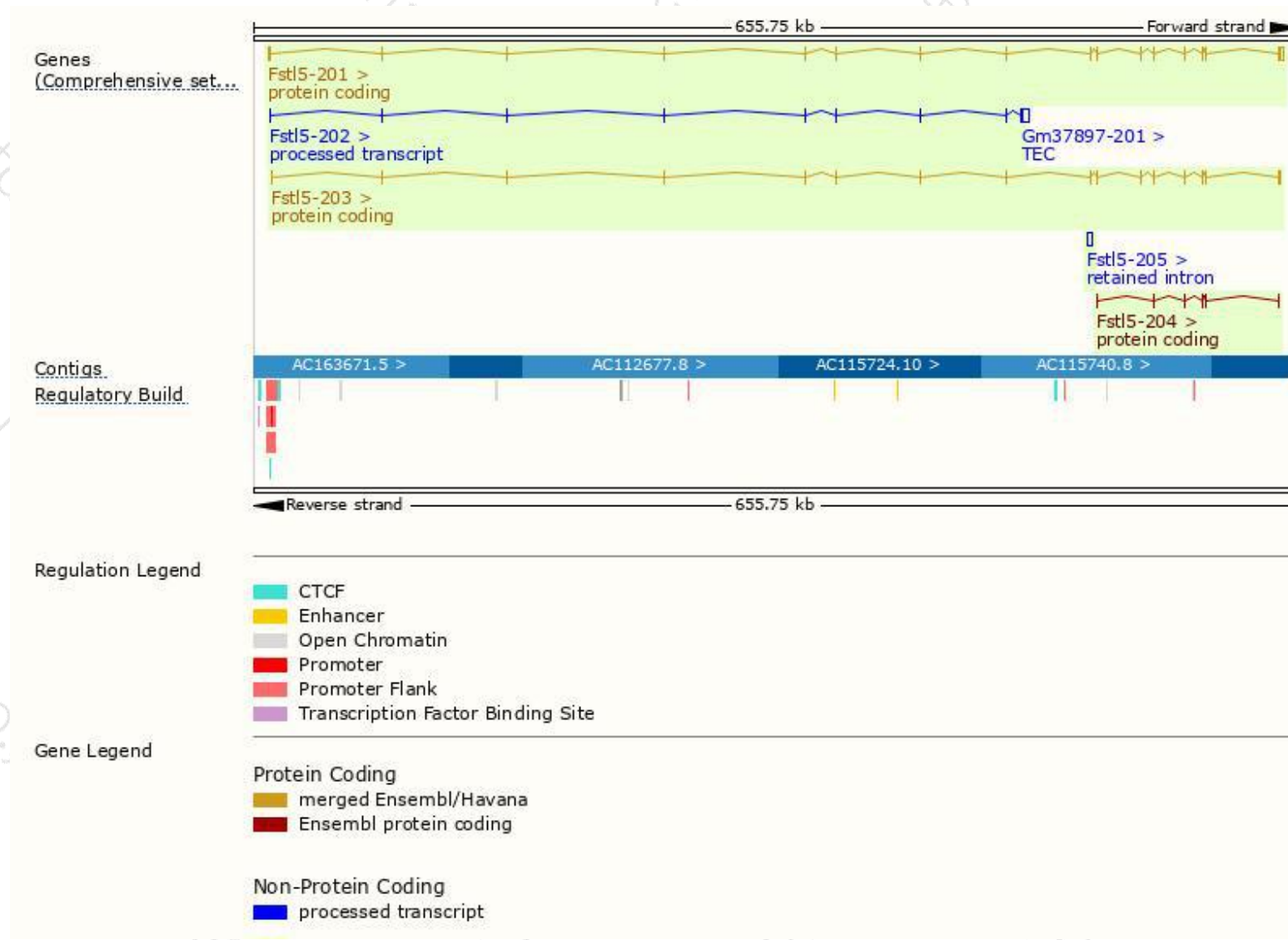
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fstl5-201	ENSMUST00000038364.14	5107	847aa	Protein coding	CCDS38455	Q8BFR2	TSL:1 GENCODE basic APPRIS P1
Fstl5-203	ENSMUST00000160261.7	3173	847aa	Protein coding	CCDS38455	Q8BFR2	TSL:1 GENCODE basic APPRIS P1
Fstl5-204	ENSMUST00000162471.1	605	201aa	Protein coding	-	F7B641	CDS 5' and 3' incomplete TSL:3
Fstl5-202	ENSMUST00000159686.1	2304	No protein	Processed transcript	-	-	TSL:1
Fstl5-205	ENSMUST00000191664.1	3308	No protein	Retained intron	-	-	TSL:NA

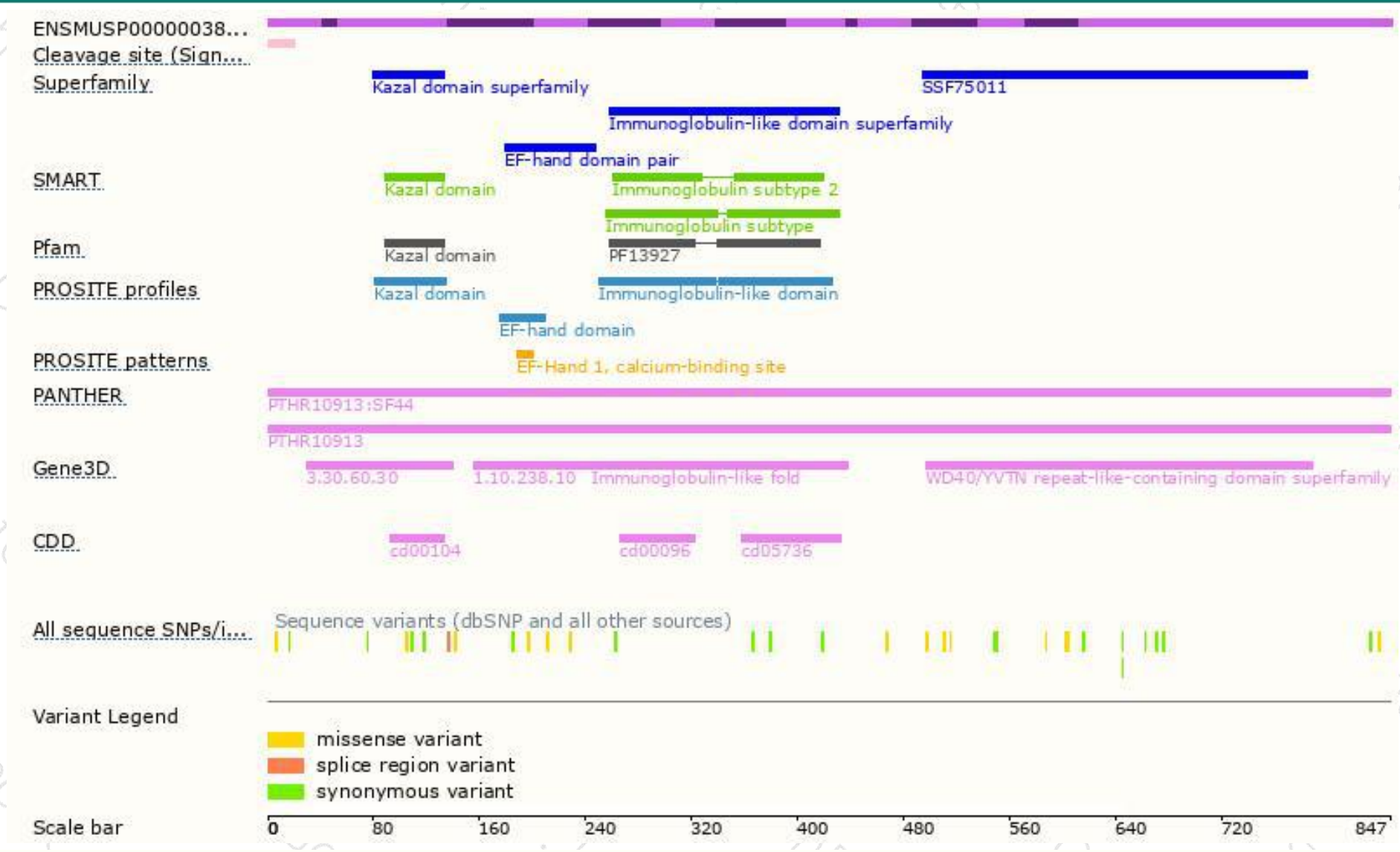
The strategy is based on the design of *Fstl5-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

