

C1s2 Cas9-CKO Strategy

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Project Overview

Project Name

C1s2

Project type

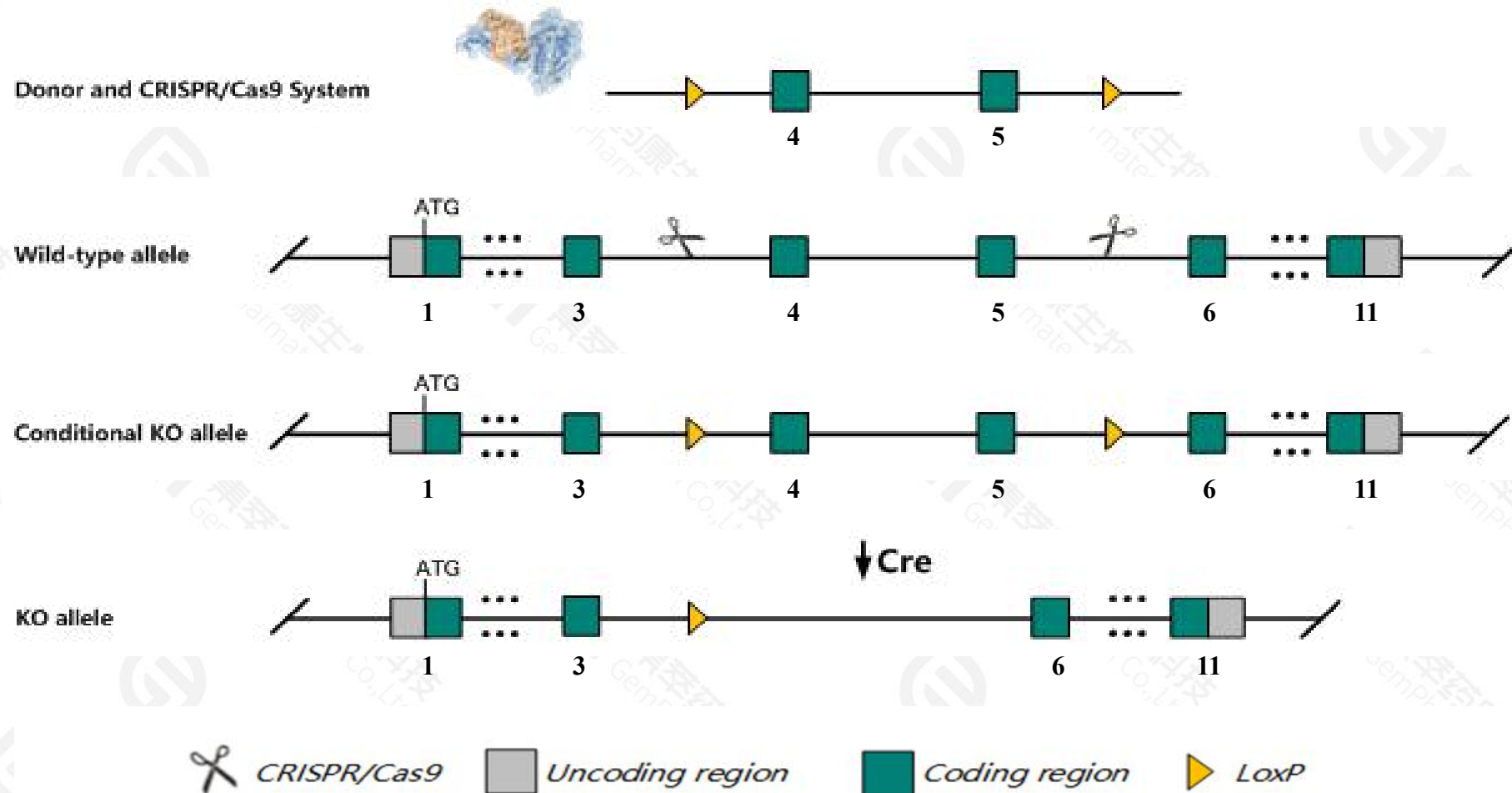
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cls2* gene. The schematic diagram is as follows:



- The *C1s2* gene has 2 transcripts. According to the structure of *C1s2* gene, exon4-exon5 of *C1s2*-202(ENSMUST00000218020.2) transcript is recommended as the knockout region. The region contains 326bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *C1s2* 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.

- The *C1s2* gene is located on the Chr6. 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)

C1s2 complement component 1, s subcomponent 2 [Mus musculus (house mouse)]

Gene ID: 317677, updated on 27-Sep-2020

Summary



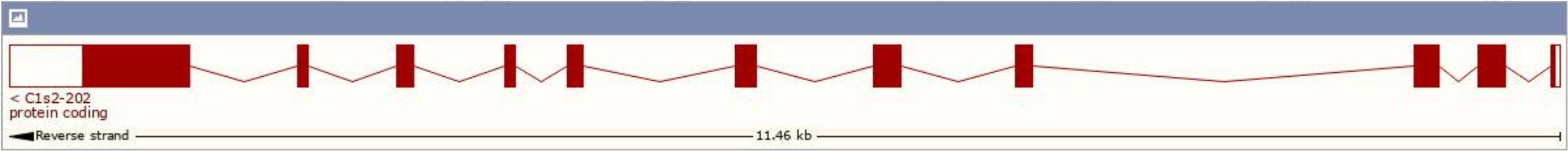
Official Symbol	C1s2 provided by MGI
Official Full Name	complement component 1, s subcomponent 2 provided by MGI
Primary source	MGI:MGI:3644269
See related	Ensembl:ENSMUSG00000079343
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C1sb, EG317677, Gm5077
Expression	Broad expression in subcutaneous fat pad adult (RPKM 8.1), bladder adult (RPKM 8.0) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

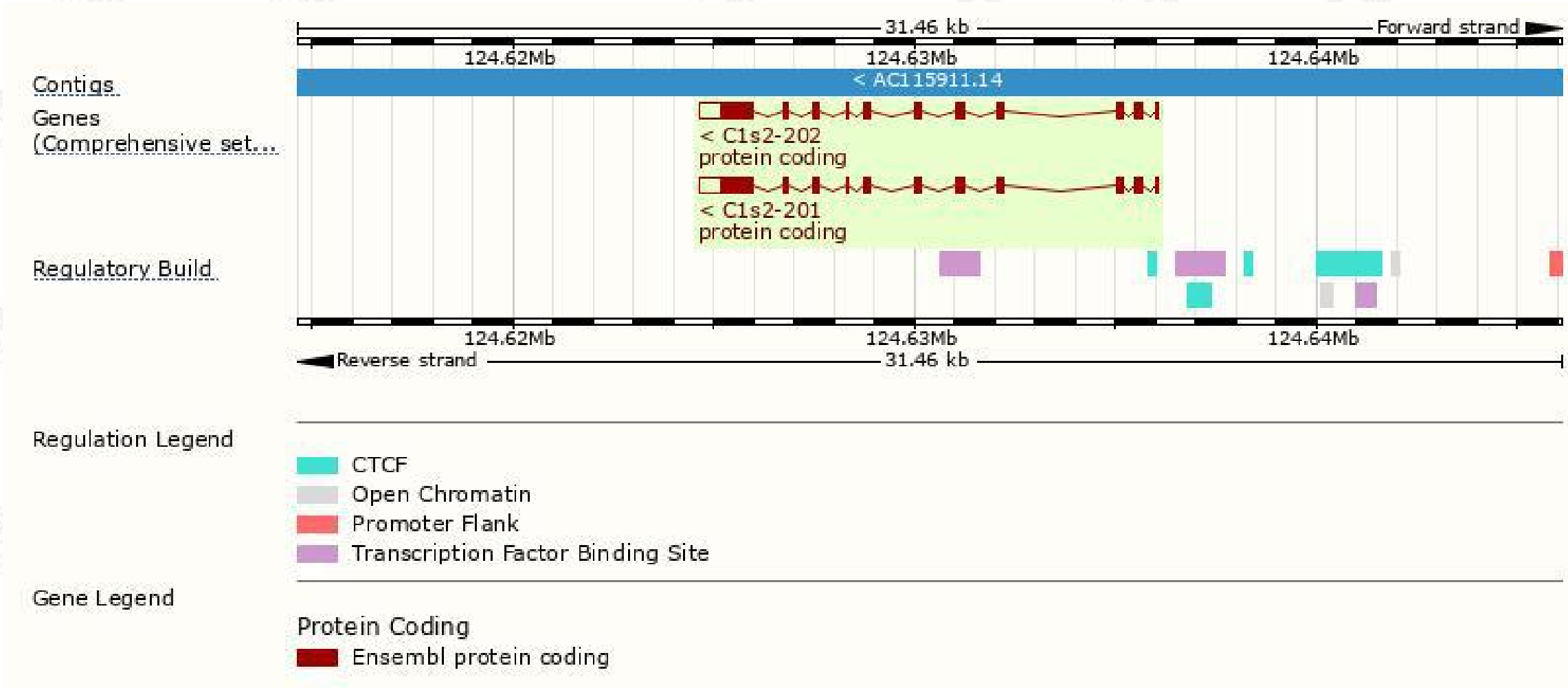
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
C1s2-202	ENSMUST00000218020.2	2662	694aa	Protein coding	CCDS20522		TSL:1 , GENCODE basic , APPRIS P2 ,
C1s2-201	ENSMUST00000068797.3	2662	688aa	Protein coding	-		TSL:1 , GENCODE basic , APPRIS ALT2 ,

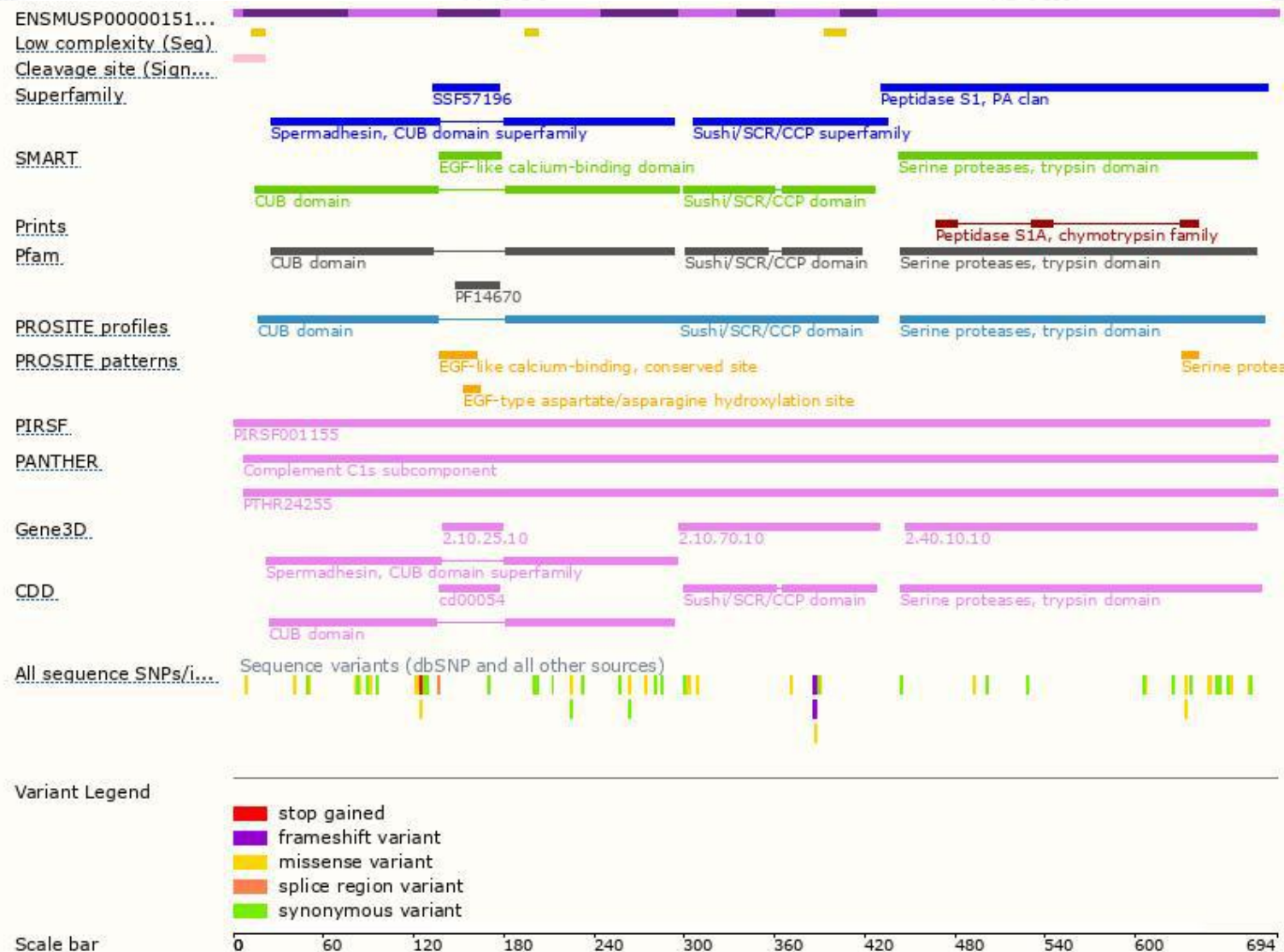
The strategy is based on the design of *C1s2-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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