

Cd300c Cas9-CKO Strategy

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Design Date: 2020-6-23

Project Overview

Project Name

Cd300c

Project type

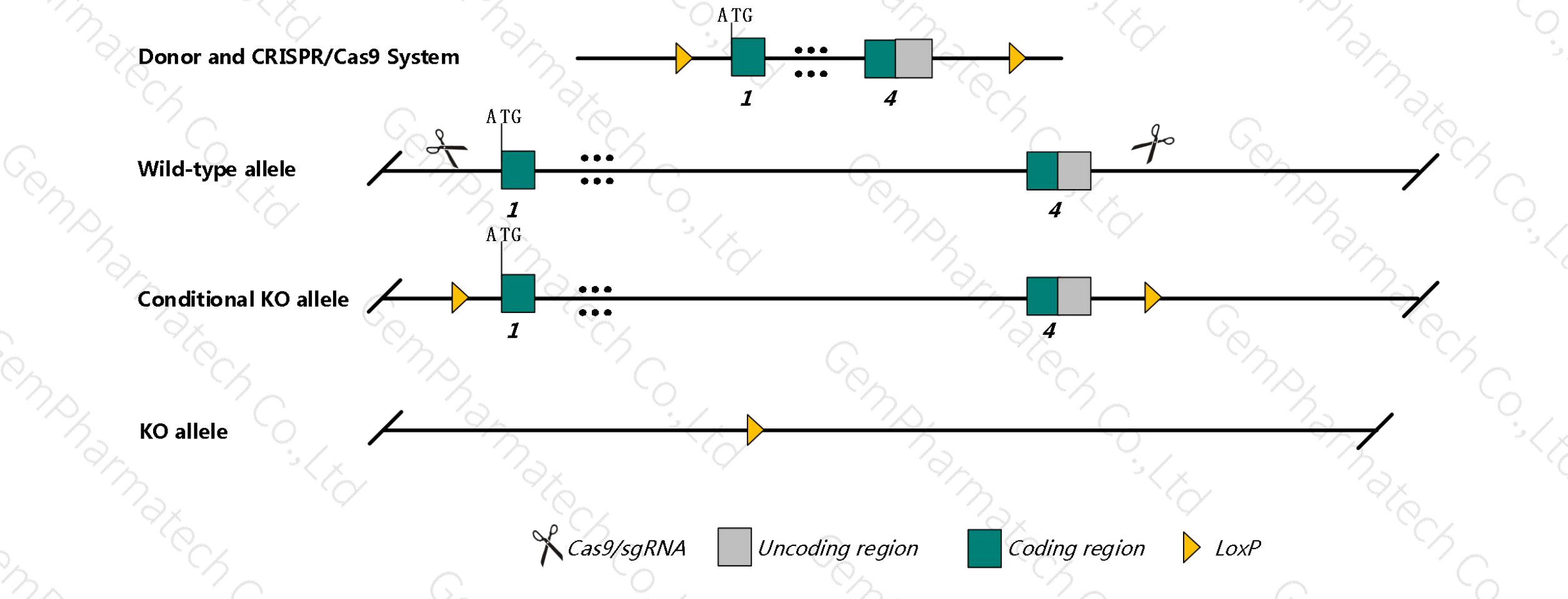
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cd300c* gene. The schematic diagram is as follows:



- The *Cd300c* gene has 3 transcripts. According to the structure of *Cd300c* gene, exon1-exon4 of *Cd300c*-202 (ENSMUST00000092466.12) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cd300c* 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 or cell types.

- The *Cd300c* gene is located on the Chr11. 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 the loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Cd300c CD300C molecule [*Mus musculus* (house mouse)]

Gene ID: 387565, updated on 13-Mar-2020

Summary

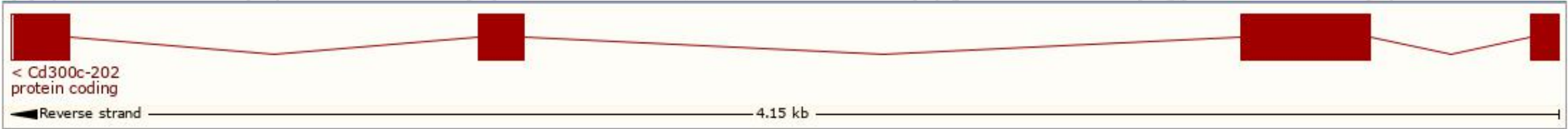
Official Symbol	Cd300c provided by MGI
Official Full Name	CD300C molecule provided by MGI
Primary source	MGI:MGI:3032626
See related	Ensembl:ENSMUSG00000058728
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CIm6
Expression	Biased expression in spleen adult (RPKM 2.6), mammary gland adult (RPKM 1.2) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

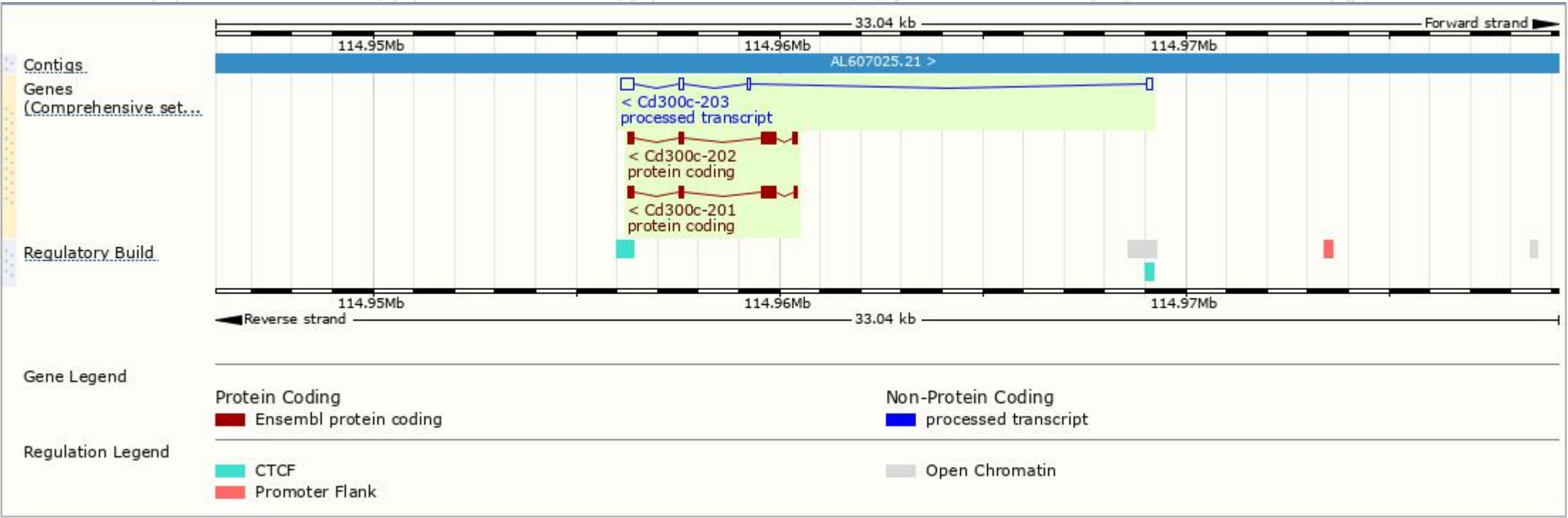
The gene has 3 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cd300c-202	ENSMUST00000092466.12	700	229aa	Protein coding	-	D3Z6G7	TSL:5 GENCODE basic APPRIS P5
Cd300c-201	ENSMUST00000061637.3	690	229aa	Protein coding	-	F7C5I0	TSL:5 GENCODE basic APPRIS ALT2
Cd300c-203	ENSMUST00000106580.2	638	No protein	Processed transcript	-	-	TSL:3

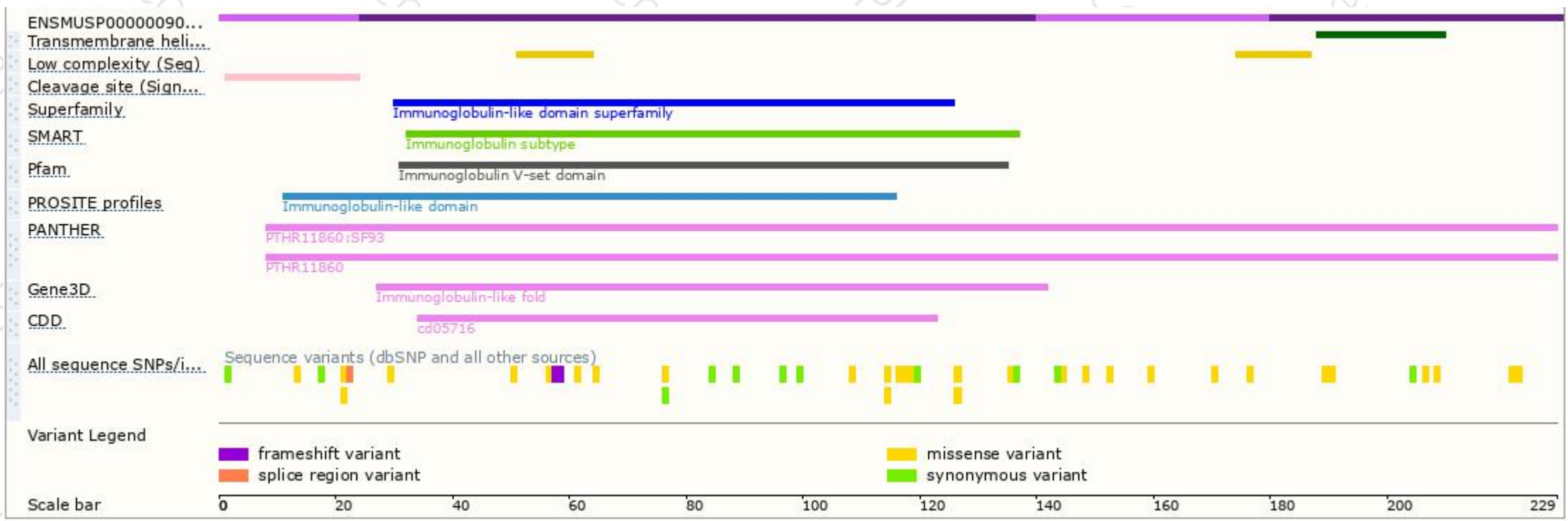
The strategy is based on the design of *Cd300c-202* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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