

Cd300ld Cas9-CKO Strategy

Designer:

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Date

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Project Overview

Project Name

Cd300ld

Project type

Cas9-CKO

Strain background

C57BL/6J

Conditional Knockout strategy

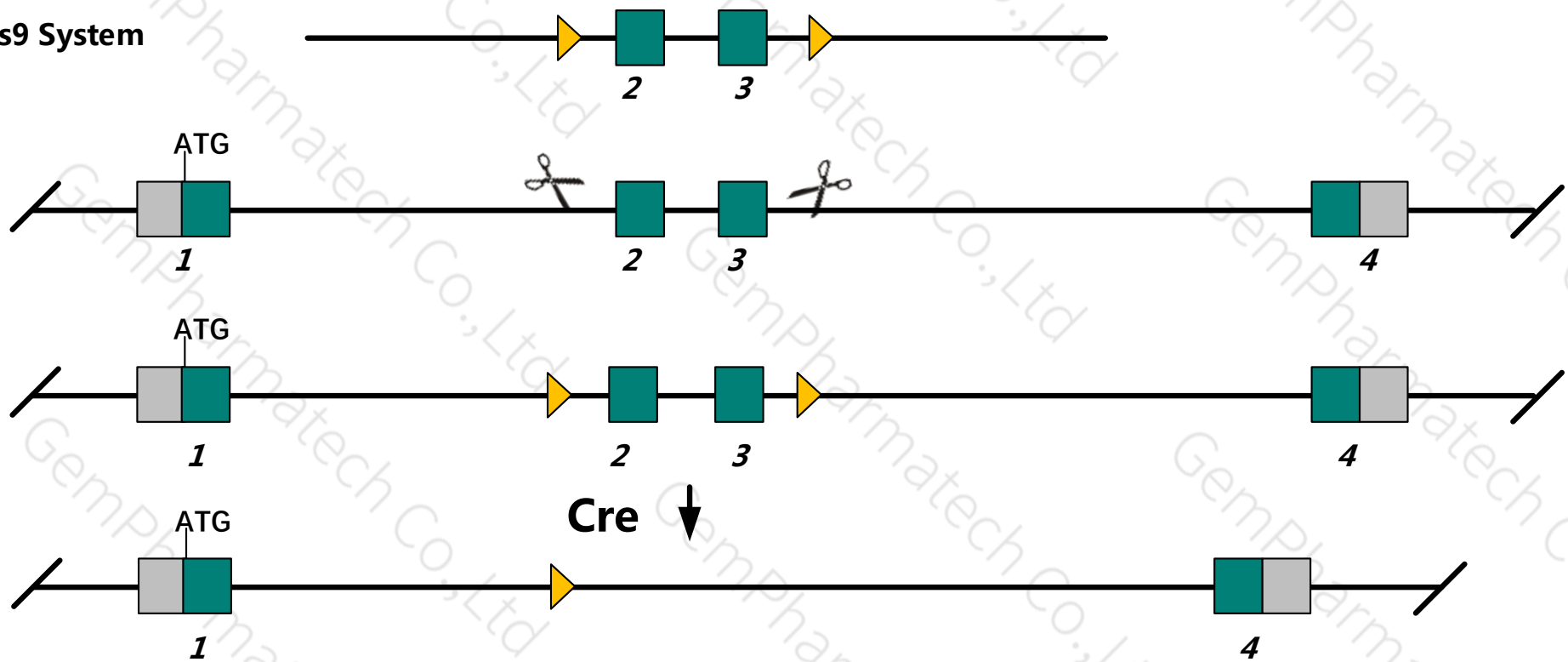
This model will use CRISPR/Cas9 technology to edit the *Cd300ld* gene. The schematic diagram is as follows:

Donor and CRISPR/Cas9 System

Wild-type allele

Conditional KO allele

KO allele



- The *Cd300ld* gene has 1 transcript. According to the structure of *Cd300ld* gene, exon2-3 of *Cd300ld-201* (ENSMUST00000045075.2) transcript is recommended as the knockout region. The region contains 469bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cd300ld* 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/6J 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/6J 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 *Cd300ld* gene is located on the Chr11. If the conditional 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 gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Cd300ld CD300 molecule like family member d [*Mus musculus* (house mouse)]

Gene ID: 217305, updated on 31-Jan-2019

Summary

| | |
|--------------------|---|
| Official Symbol | Cd300ld provided by MGI |
| Official Full Name | CD300 molecule like family member d provided by MGI |
| Primary source | MGI:MGI:2442358 |
| See related | Ensembl:ENSMUSG00000034641 |
| 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 | CLM5; LMIR4; clm-5; MAIR-IV; Cd300ld1; 4732429D16Rik |
| Expression | Broad expression in mammary gland adult (RPKM 2.7), spleen adult (RPKM 2.3) and 19 other tissues See more |

Transcript information (Ensembl)

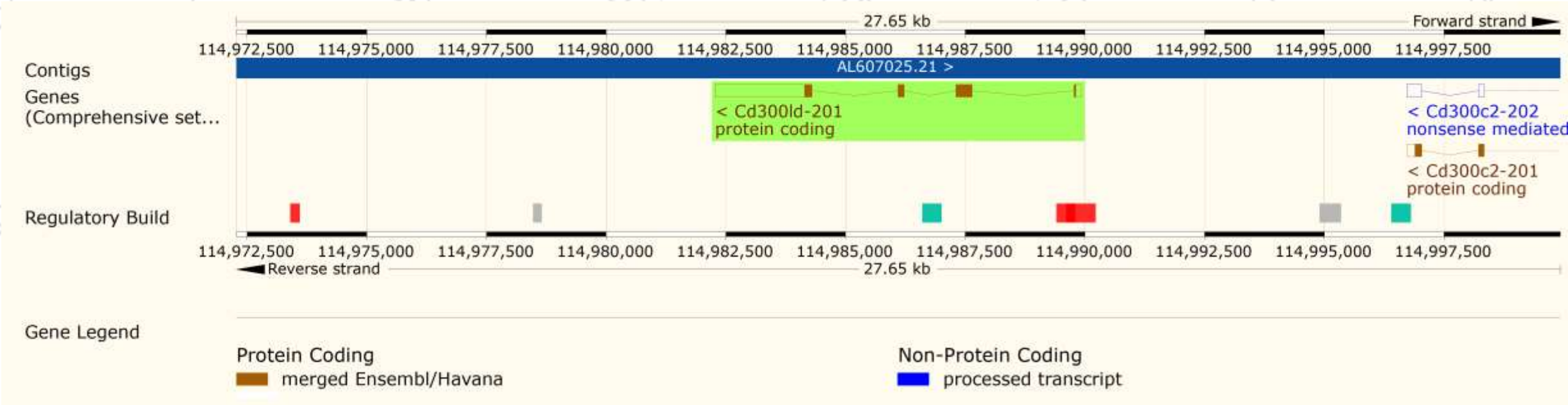
The gene has 1 transcript, and the transcript is shown below :

| Show/hide columns (1 hidden) | | | | | | | Filter | |
|------------------------------|--------------------------------------|------|-----------------------|----------------|---------------------------|------------------------|--------|-------------------------|
| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags | |
| Cd300ld-201 | ENSMUST00000045075.2 | 2645 | 221aa | Protein coding | CCDS25615 | Q8VCH2 | TSL:1 | GENCODE basic APPRIS P1 |

The strategy is based on the design of *Cd300ld-201* transcript,The transcription is shown below



Genomic location (Ensembl)



Protein domain (Ensembl)



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

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