

C2cd4d Cas9-KO Strategy

Designer: Daohua Xu

Reviewer: Xueting Zhang

Design Date: 2020-10-13

Project Overview

Project Name

C2cd4d

Project type

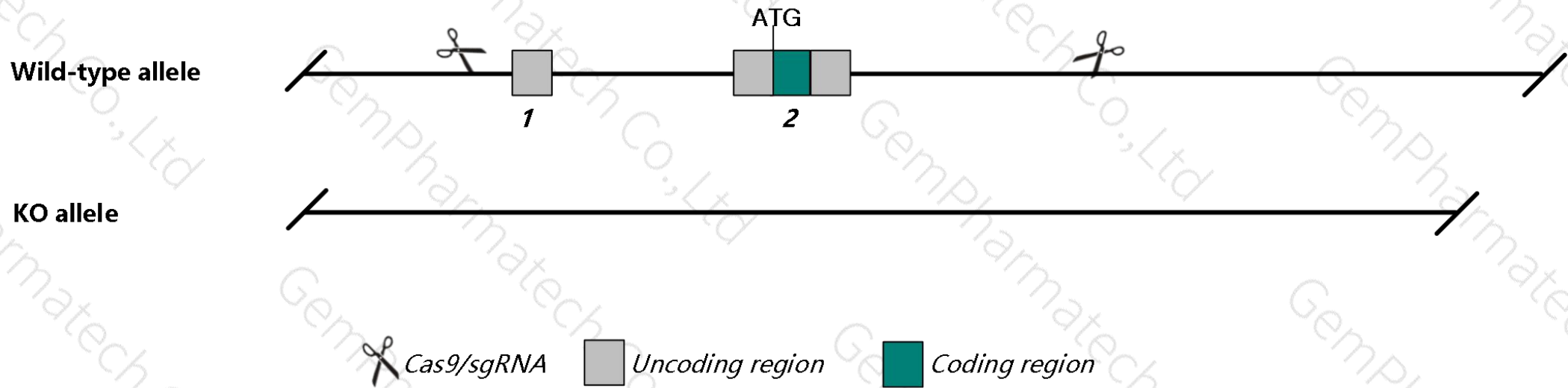
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *C2cd4d* gene. The schematic diagram is as follows:



- The *C2cd4d* gene has 2 transcripts. According to the structure of *C2cd4d* gene, exon1-exon2 of *C2cd4d-201*(ENSMUST00000169433.2) 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 *C2cd4d* gene. The brief process is as follows: CRISPR/Cas9 system 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 KO region contains functional region of the *Gm36070* gene. Knockout the region may affect the function of *Gm36070* gene.
- The *C2cd4d* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

C2cd4d C2 calcium-dependent domain containing 4D [Mus musculus (house mouse)]

Gene ID: 271944, updated on 13-Mar-2020

Summary



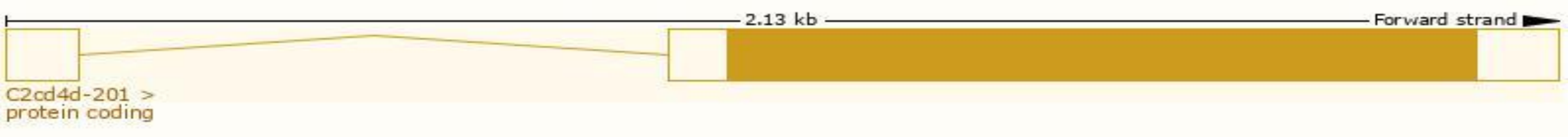
| | |
|---------------------------|---|
| Official Symbol | C2cd4d provided by MGI |
| Official Full Name | C2 calcium-dependent domain containing 4D provided by MGI |
| Primary source | MGI:MGI:2685505 |
| See related | Ensembl:ENSMUSG00000091648 |
| Gene type | protein coding |
| RefSeq status | PROVISIONAL |
| Organism | Mus musculus |
| Lineage | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus |
| Also known as | Gm659 |
| Expression | Biased expression in thymus adult (RPKM 10.2), ovary adult (RPKM 3.3) and 13 other tissues See more |
| Orthologs | human all |

Transcript information (Ensembl)

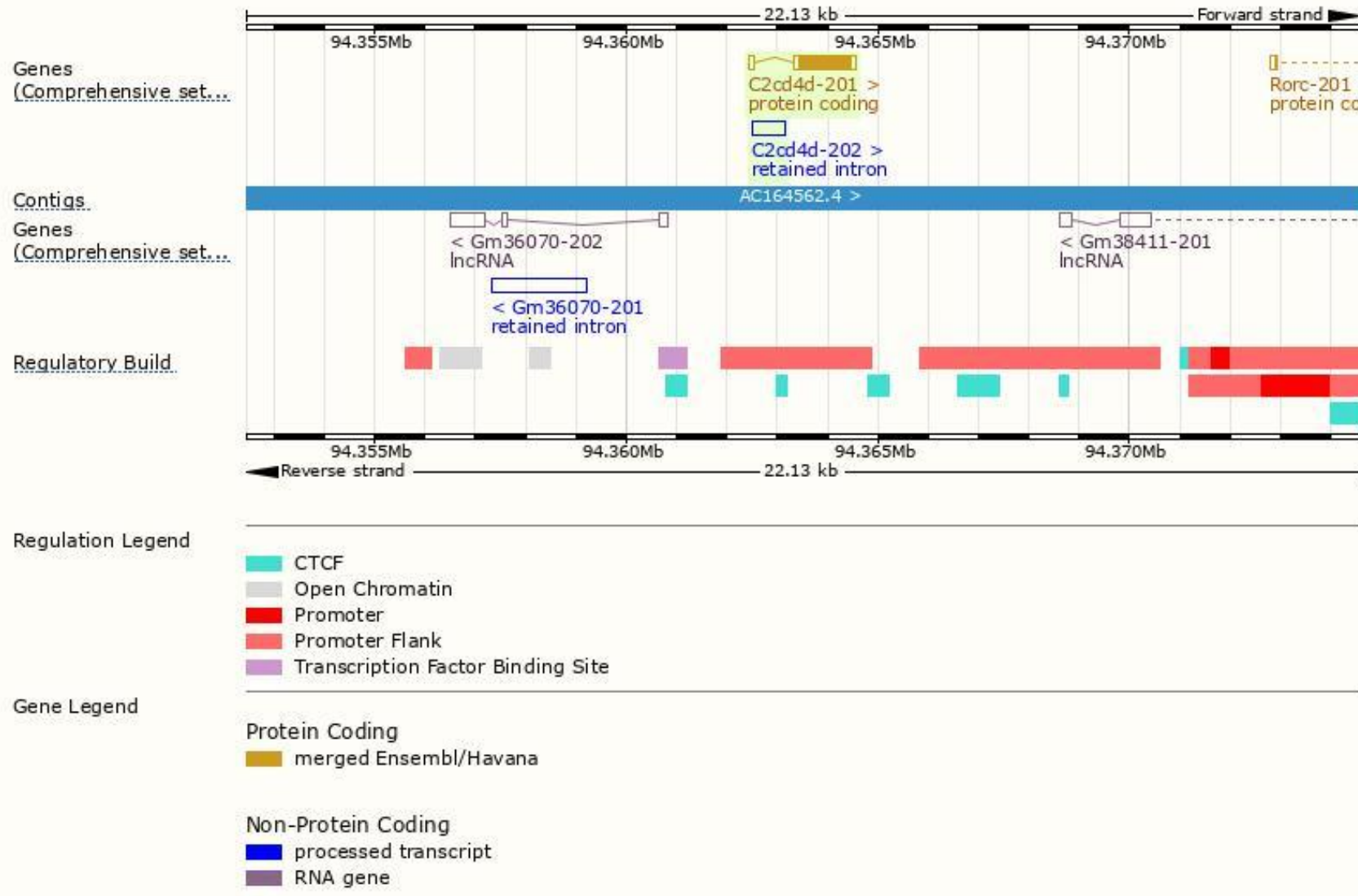
The gene has 2 transcripts,all transcripts are shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|------------|--------------------------------------|------|-----------------------|-----------------|---------------------------|------------------------|-------------------------------|
| C2cd4d-201 | ENSMUST00000169433.2 | 1321 | 341aa | Protein coding | CCDS50983 | P0CG09 | TSL:3 GENCODE basic APPRIS P1 |
| C2cd4d-202 | ENSMUST00000197526.1 | 662 | No protein | Retained intron | - | - | TSL:NA |

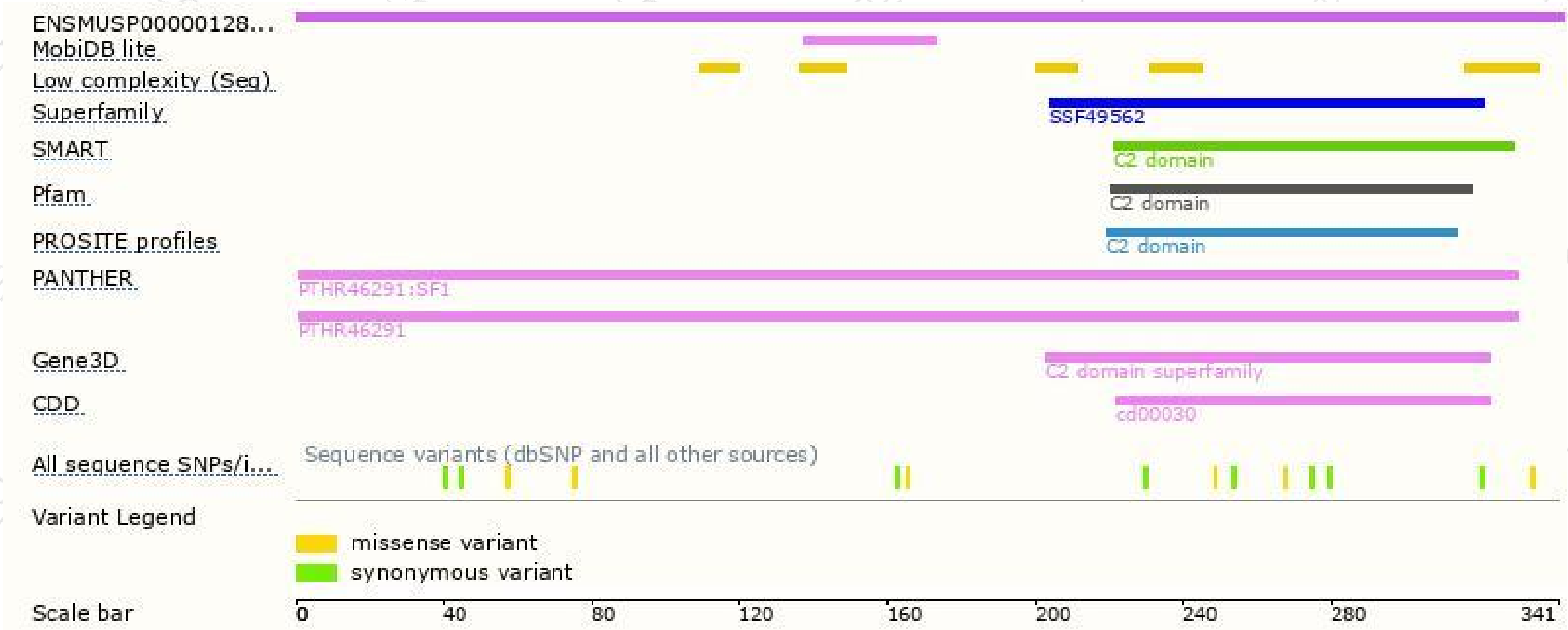
The strategy is based on the design of *C2cd4d-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

