

***Cab39* Cas9-KO Strategy**

Designer: Xueting Zhang

Reviewer: Yanhua Shen

Date: 2020-02-24

Project Overview

Project Name

Cab39

Project type

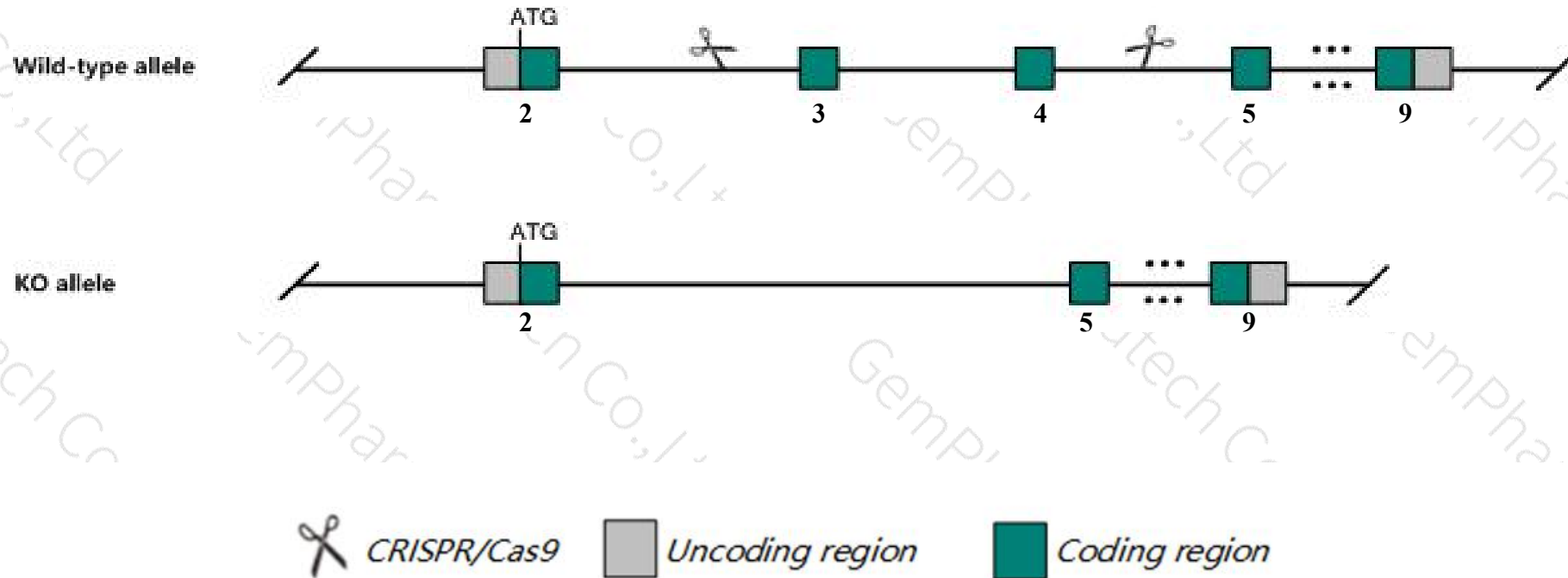
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cab39* gene. The schematic diagram is as follows:



- The *Cab39* gene has 5 transcripts. According to the structure of *Cab39* gene, exon3-exon4 of *Cab39-202* (ENSMUST00000113360.7) transcript is recommended as the knockout region. The region contains 284bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cab39* gene. The brief process is as follows: CRISPR/Cas9 system

- The effect on transcript *Cab39*-203&204 is unknown.
- Transcript *Cab39*-205 may not be affected.
- The *Cab39* gene is located on the Chr1. 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)

Cab39 calcium binding protein 39 [*Mus musculus* (house mouse)]

Gene ID: 12283, updated on 24-Oct-2019

Summary

- Official Symbol** Cab39 provided by [MGI](#)
- Official Full Name** calcium binding protein 39 provided by [MGI](#)
- Primary source** [MGI:MGI:107438](#)
- See related** [Ensembl:ENSMUSG00000036707](#)
- 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** MO25; C78372; AA408805; AA960512; MO25alpha
- Expression** Ubiquitous expression in bladder adult (RPKM 37.9), colon adult (RPKM 29.2) and 28 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 1; 1 C5 See Cab39 in [Genome Data Viewer](#)

Exon count: 11

| Annotation release | Status | Assembly | Chr | Location |
|---------------------|-------------------|--|-----|----------------------------------|
| 108 | current | GRCm38.p6 (GCF_000001635.26) | 1 | NC_000067.6 (85793441..85851577) |
| Build 37.2 | previous assembly | MGSCv37 (GCF_000001635.18) | 1 | NC_000067.5 (87690022..87748152) |

Transcript information (Ensembl)

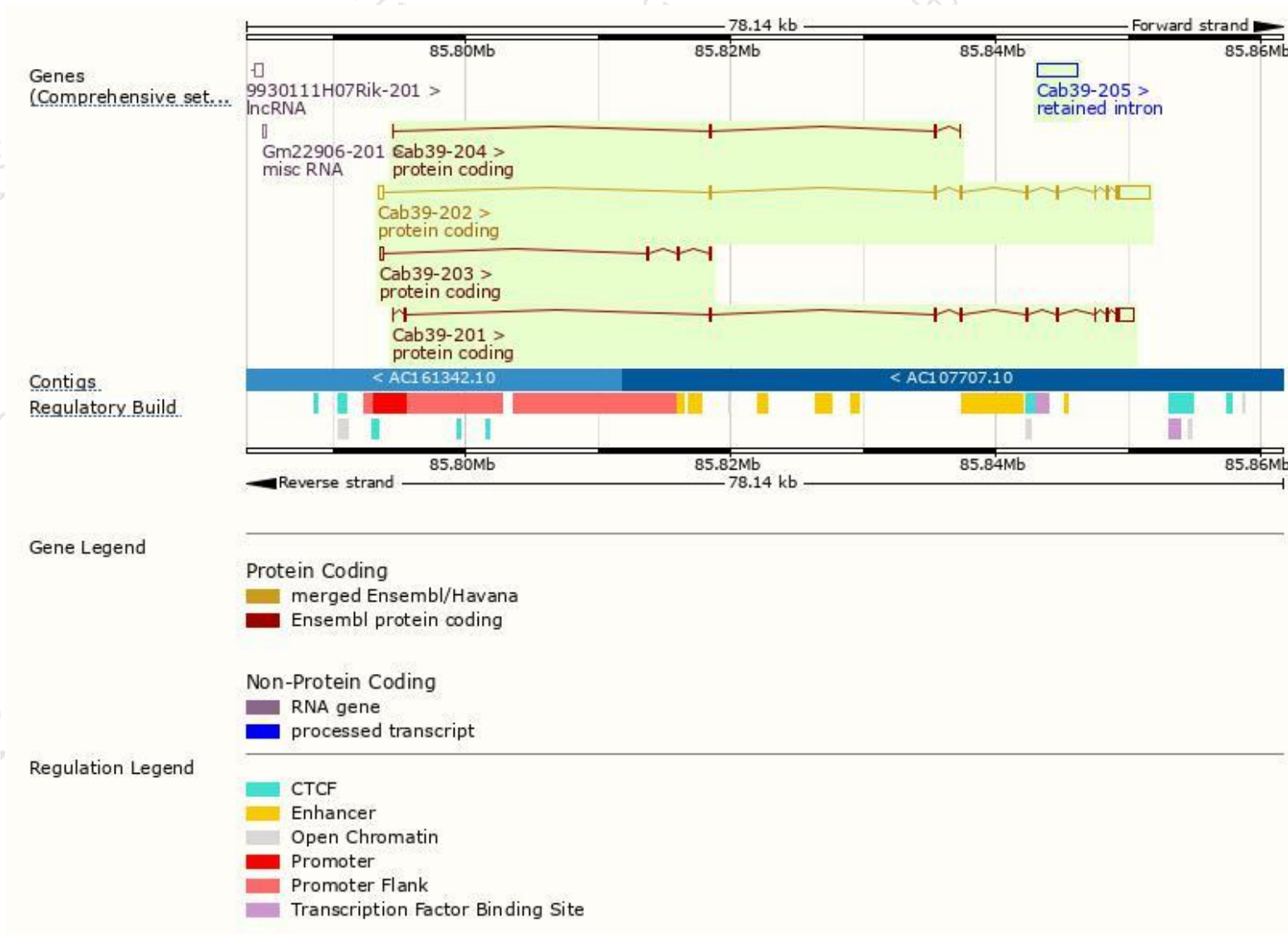
The gene has 5 transcripts,all transcripts are shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|-----------|--------------------------------------|------|-----------------------|-----------------|---------------------------|------------------------|-------------------------------|
| Cab39-202 | ENSMUST00000113360.7 | 3805 | 341aa | Protein coding | CCDS15112 | Q06138 | TSL:1 GENCODE basic APPRIS P1 |
| Cab39-201 | ENSMUST00000097666.3 | 2369 | 341aa | Protein coding | CCDS15112 | Q06138 | TSL:5 GENCODE basic APPRIS P1 |
| Cab39-203 | ENSMUST00000126962.2 | 580 | 38aa | Protein coding | - | D3Z704 | CDS 3' incomplete TSL:3 |
| Cab39-204 | ENSMUST00000130754.7 | 437 | 104aa | Protein coding | - | D3YV52 | CDS 3' incomplete TSL:3 |
| Cab39-205 | ENSMUST00000187623.1 | 2991 | No protein | Retained intron | - | - | TSL:NA |

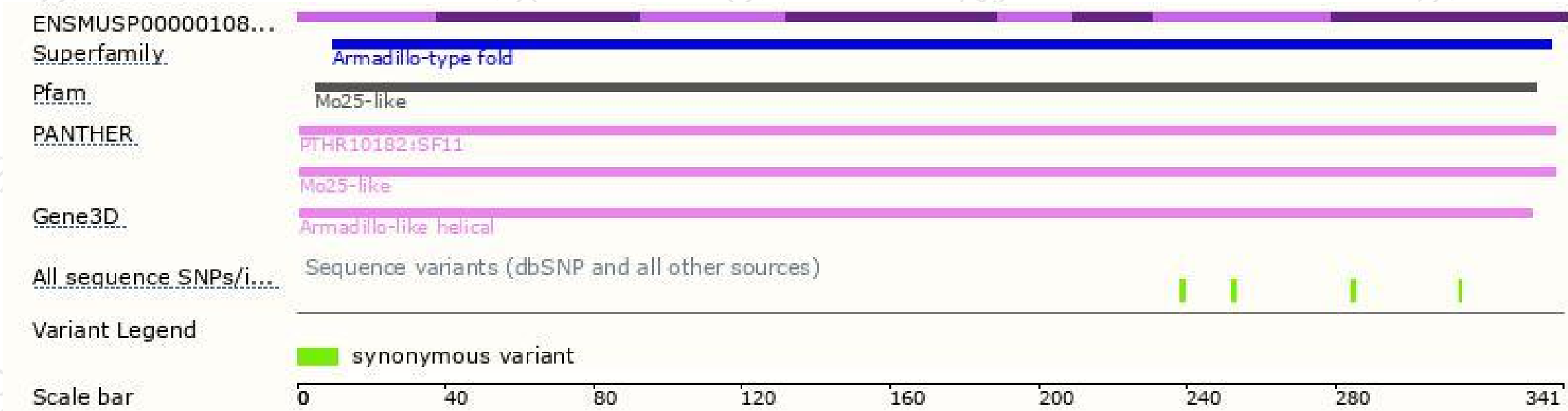
The strategy is based on the design of *Cab39-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

