# *Rragb* Cas9-KO Strategy

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# Project Overview

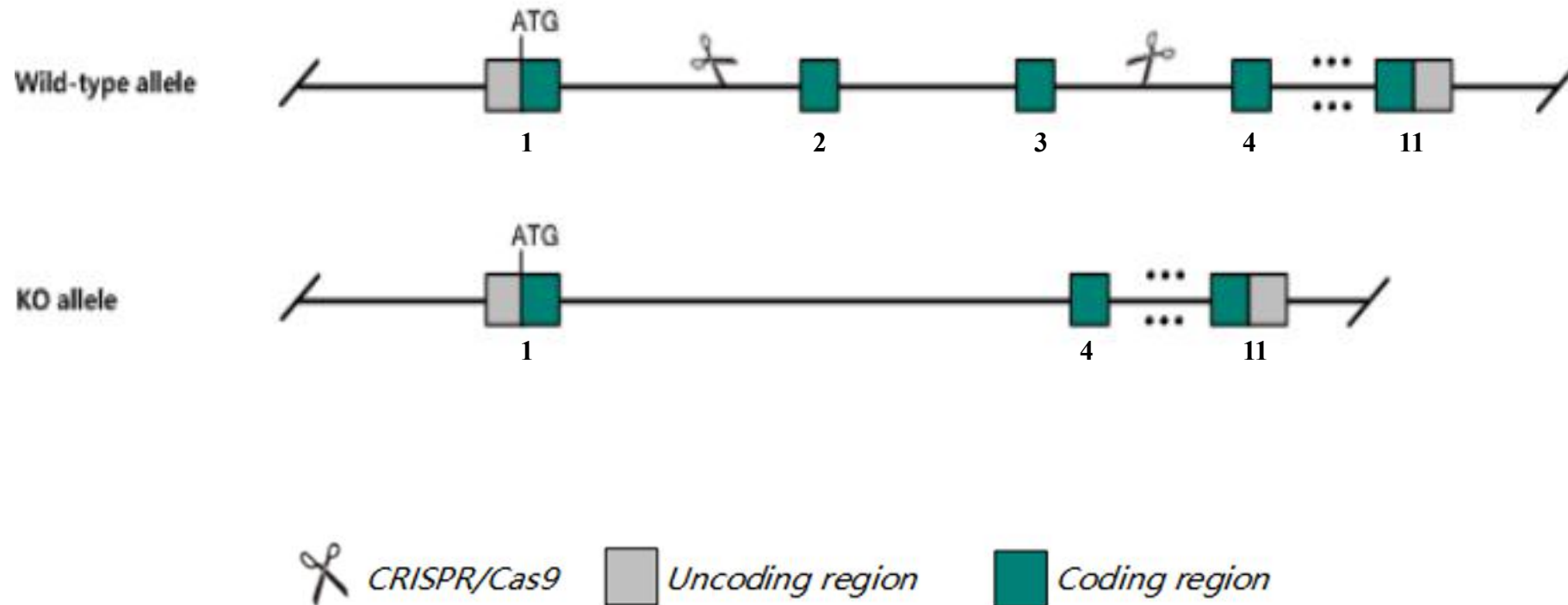| | |
|---|---|
| **Project Name** | *Rragb* |
| **Project type** | **Cas9-KO** |
| **Strain background** | **C57BL/6JGpt** |

# Knockout strategy

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

The *Rragb* gene has 2 transcripts. According to the structure of *Rragb* gene, exon2-exon3 of *Rragb-201* (ENSMUST00000039720.10) transcript is recommended as the knockout region.The region contains 134bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Rragb* gene. The brief process is as follows: CRISPR/Cas9 system

# Notice

According to the existing MGI data,Mice homozygous or hemizygous for a null allele are viable with no gross abnormalities.

The *Rragb* gene is located on the ChrX. 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

**Rragb   Ras-related GTP binding B [ *Mus musculus* (house mouse) ]**

Gene ID: 245670, updated on 27-Feb-2020

## Summary

| | |
|---|---|
| **Official Symbol** | Rragb provided by MGI |
| **Official Full Name** | Ras-related GTP binding B provided by MGI |
| **Primary source** | MGI:MGI:3038613 |
| **See related** | Ensembl:ENSMUSG00000041658 |
| **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 |
| **Expression** | Biased expression in CNS E18 (RPKM 18.2), cerebellum adult (RPKM 16.5) and 9 other tissues See more |
| **Orthologs** | human   all |

## Genomic context

**Location:**   X; X F3

See Rragb in Genome Data Viewer

**Exon count:**   13

# Transcript information　Ensembl

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

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|------|---------------|-----|---------|---------|------|---------|-------|
| Rragb-201 | ENSMUST00000039720.10 | 2258 | 374aa | Protein coding | CCDS30480 | Q6NTA4 | TSL:1 GENCODE basic APPRIS P1 |
| Rragb-202 | ENSMUST00000144175.2 | 847 | 116aa | Protein coding | - | G3UYP1 | CDS 3' incomplete TSL:5 |

The strategy is based on the design of *Rragb-201* transcript,The transcription is shown below
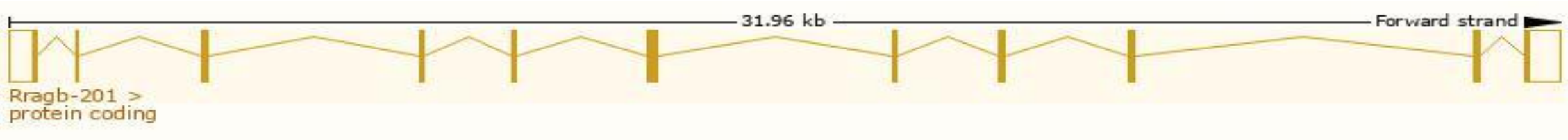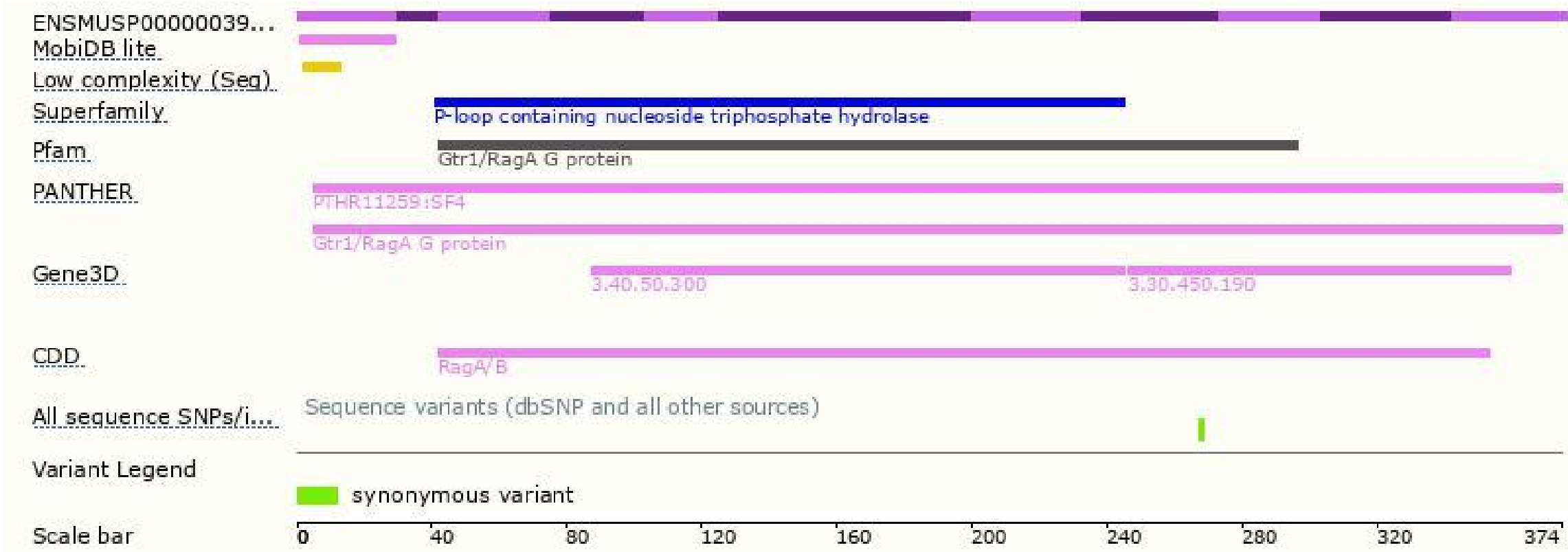
# Genomic location distribution
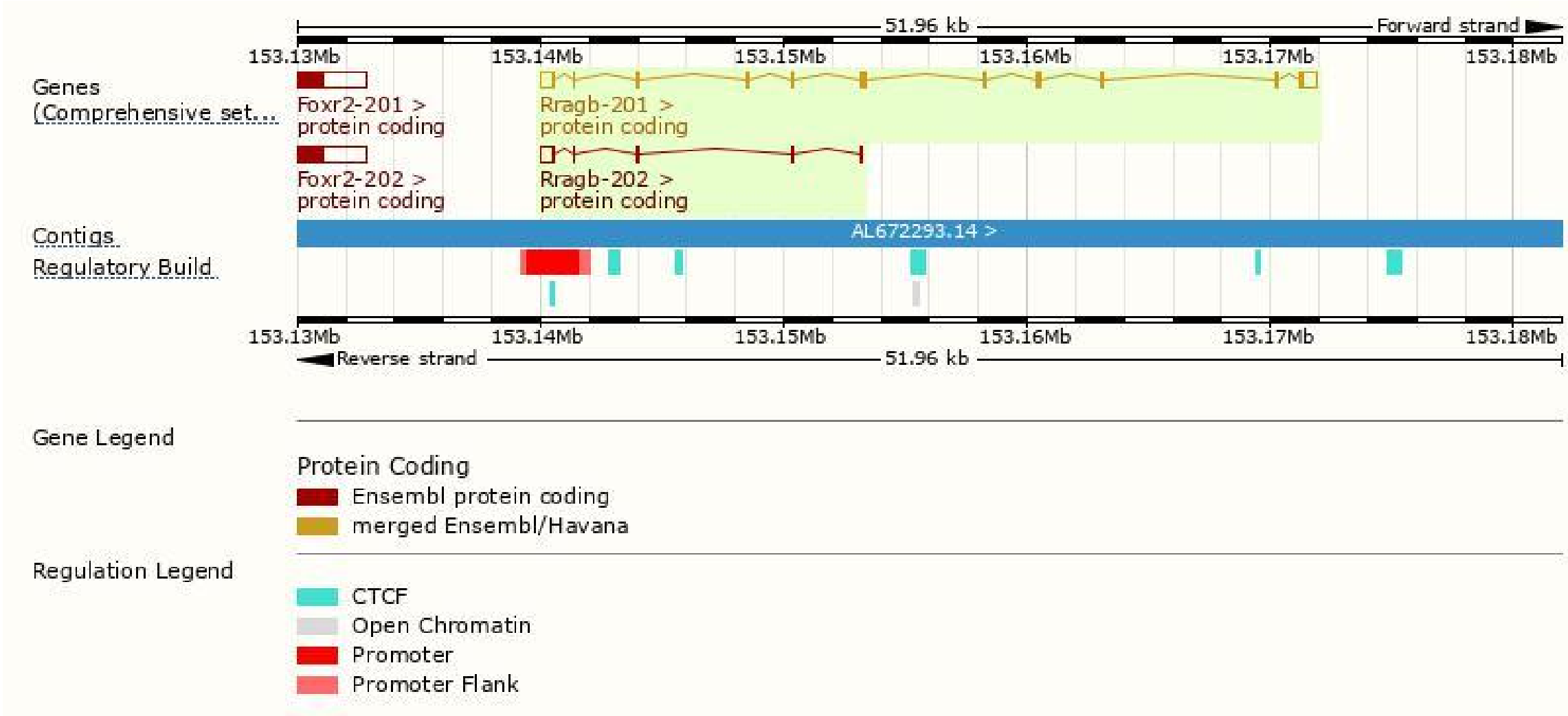
# Protein domain

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