# *Agr3* Cas9-KO Strategy

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# Project Overview

| | |
|---|---|
| **Project Name** | ***Agr3*** |
| **Project type** | **Cas9-KO** |
| **Strain background** | **C57BL/6JGpt** |

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Agr3* gene. The schematic diagram is as follows:

# Technical routes

➢ The *Agr3* gene has 2 transcripts. According to the structure of *Agr3* gene, exon3 of *Agr3-201* (ENSMUST00000042101.4) transcript is recommended as the knockout region.The region contains 64bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Agr3* gene. The brief process is as follows: CRISPR/Cas9 system v

# Notice

- The effect on transcript *Agr3*-202 is unknown.
- The *Agr3* gene is located on the Chr12. 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）

集萃药康 GemPharmatech

## Agr3 anterior gradient 3 [ *Mus musculus* (house mouse) ]

Gene ID: 403205, updated on 12-Aug-2019

### Summary

| | |
|---|---|
| **Official Symbol** | Agr3 provided by MGI |
| **Official Full Name** | anterior gradient 3 provided by MGI |
| **Primary source** | MGI:MGI:2685734 |
| **See related** | Ensembl:ENSMUSG00000036231 |
| **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** | Gm888; BCMP11; E030025L21Rik |
| **Expression** | Low expression observed in reference dataset See more |
| **Orthologs** | human all |

### Genomic context

**Location:** 12; 12 A3

See Agr3 in Genome Data Viewer

**Exon count:** 10

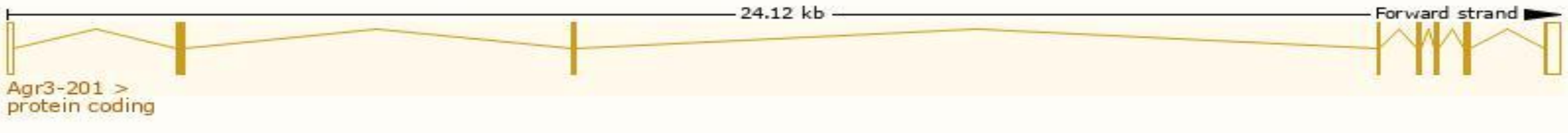
| Annotation release | Status | Assembly | Chr | Location |
|---|---|---|---|---|
| 108 | current | GRCm38.p6 (GCF_000001635.26) | 12 | NC_000078.6 (35925621..35949737) |
| Build 37.2 | previous assembly | MGSCv37 (GCF_000001635.18) | 12 | NC_000078.5 (36652208..36676317) |

# Transcript information（Ensembl）

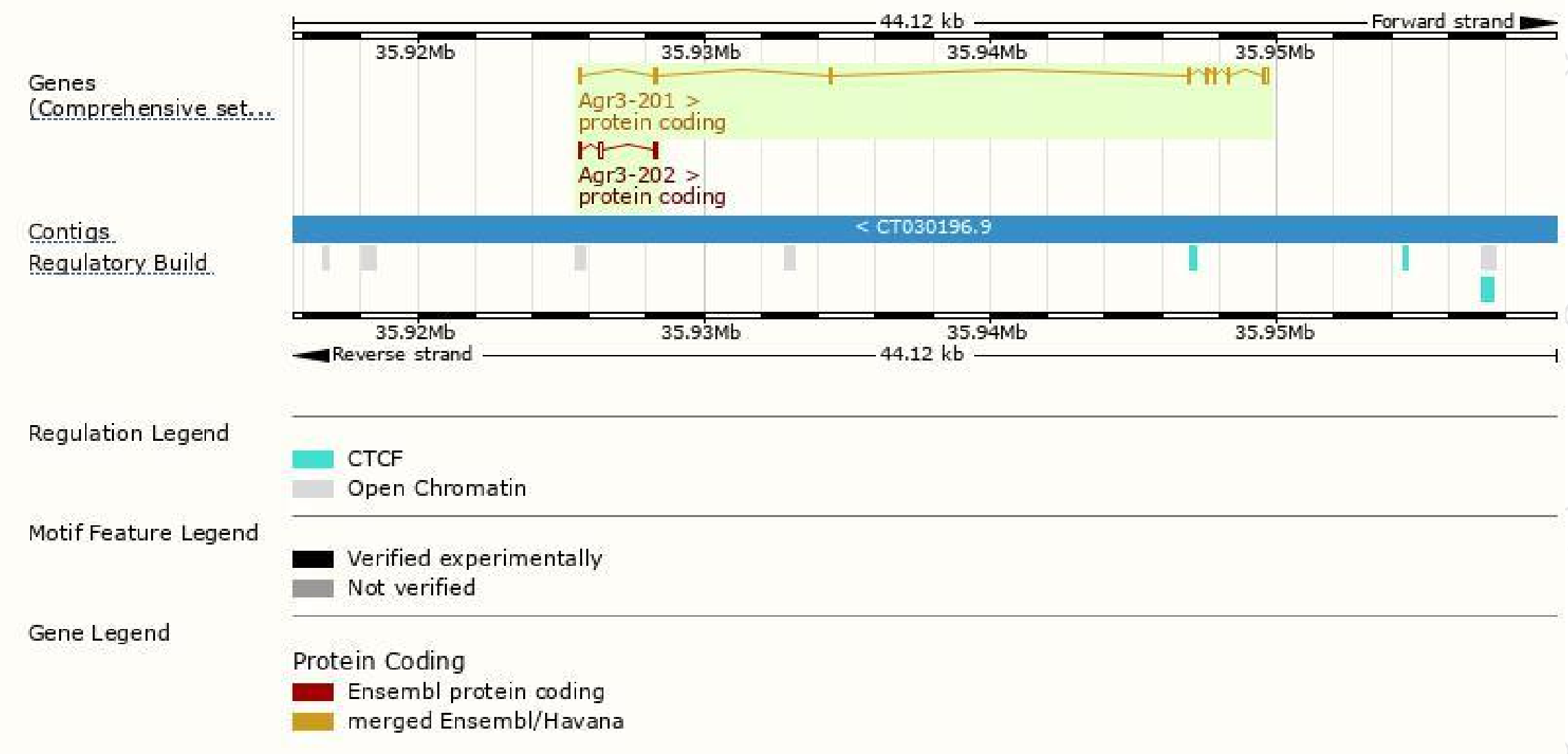
The gene has 2 transcripts,all transcripts are shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|---|---|---|---|---|---|---|---|
| Agr3-201 | ENSMUST00000042101.4 | 826 | 165aa | Protein coding | CCDS25880 | Q8R3W7 | TSL:1 GENCODE basic APPRIS P1 |
| Agr3-202 | ENSMUST00000154042.1 | 388 | 35aa | Protein coding | - | A7NSI2 | CDS 3' incomplete TSL:2 |

The strategy is based on the design of *Agr3-201* transcript,The transcription is shown below



# Genomic location distribution



# Protein domain

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

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