

Adcy4 Cas9-KO Strategy

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Project Overview

Project Name

Adcy4

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adcy4* gene. The schematic diagram is as follows:



- The *Adcy4* gene has 6 transcripts. According to the structure of *Adcy4* gene, exon3-exon15 of *Adcy4-202* (ENSMUST00000170223.8) transcript is recommended as the knockout region. The region contains 1655bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Adcy4* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for disruptions of this gene display a normal phenotype.
- Transcript *Adcy4-205* may not be affected.
- The *Adcy4* gene is located on the Chr14. 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)

Adcy4 adenylate cyclase 4 [Mus musculus (house mouse)]

Gene ID: 104110, updated on 19-Mar-2019

Summary



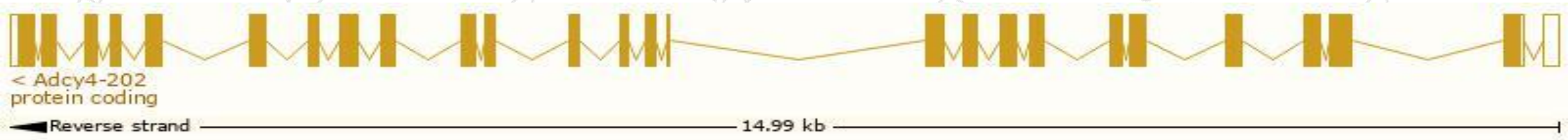
| | |
|---------------------------|---|
| Official Symbol | Adcy4 provided by MGI |
| Official Full Name | adenylate cyclase 4 provided by MGI |
| Primary source | MGI:MGI:99674 |
| See related | Ensembl:ENSMUSG00000022220 |
| Gene type | protein coding |
| RefSeq status | VALIDATED |
| Organism | Mus musculus |
| Lineage | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus |
| Also known as | mKIAA4004 |
| Expression | Biased expression in lung adult (RPKM 35.4), subcutaneous fat pad adult (RPKM 10.2) and 10 other tissues See more |
| Orthologs | human all |

Transcript information (Ensembl)

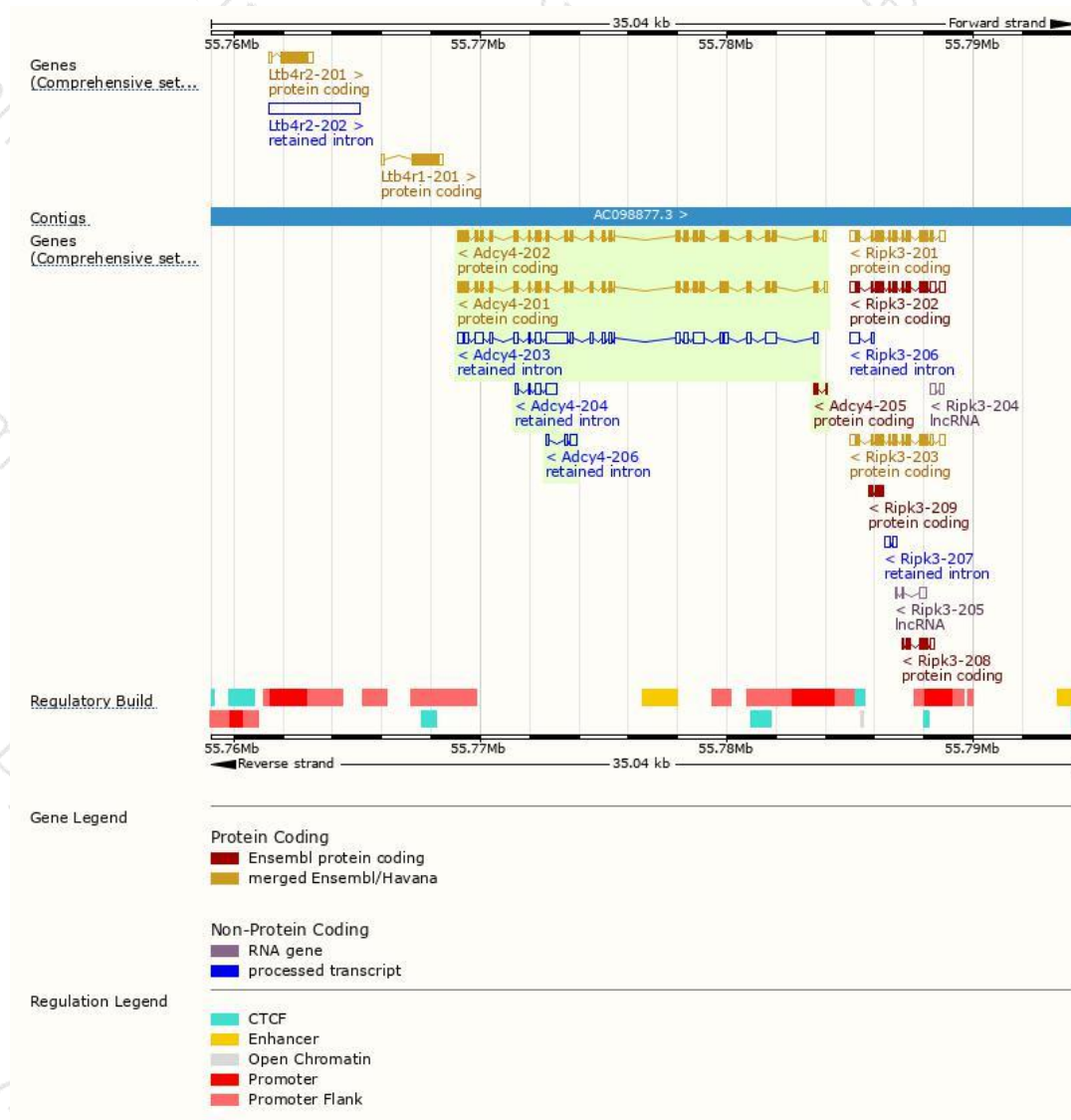
The gene has 6 transcripts,all transcripts are shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|-----------|--------------------------------------|------|------------------------|-----------------|---------------------------|----------------------------|-------------------------------|
| Adcy4-202 | ENSMUST00000170223.8 | 3501 | 1077aa | Protein coding | CCDS27130 | Q91WF3 | TSL:1 GENCODE basic APPRIS P1 |
| Adcy4-201 | ENSMUST00000002398.8 | 3444 | 1077aa | Protein coding | CCDS27130 | Q91WF3 | TSL:1 GENCODE basic APPRIS P1 |
| Adcy4-205 | ENSMUST00000227031.1 | 256 | 49aa | Protein coding | - | A0A2I3BPD6 | CDS 3' incomplete |
| Adcy4-203 | ENSMUST00000226361.1 | 4270 | No protein | Retained intron | - | - | |
| Adcy4-204 | ENSMUST00000226575.1 | 819 | No protein | Retained intron | - | - | |
| Adcy4-206 | ENSMUST00000228933.1 | 459 | No protein | Retained intron | - | - | |

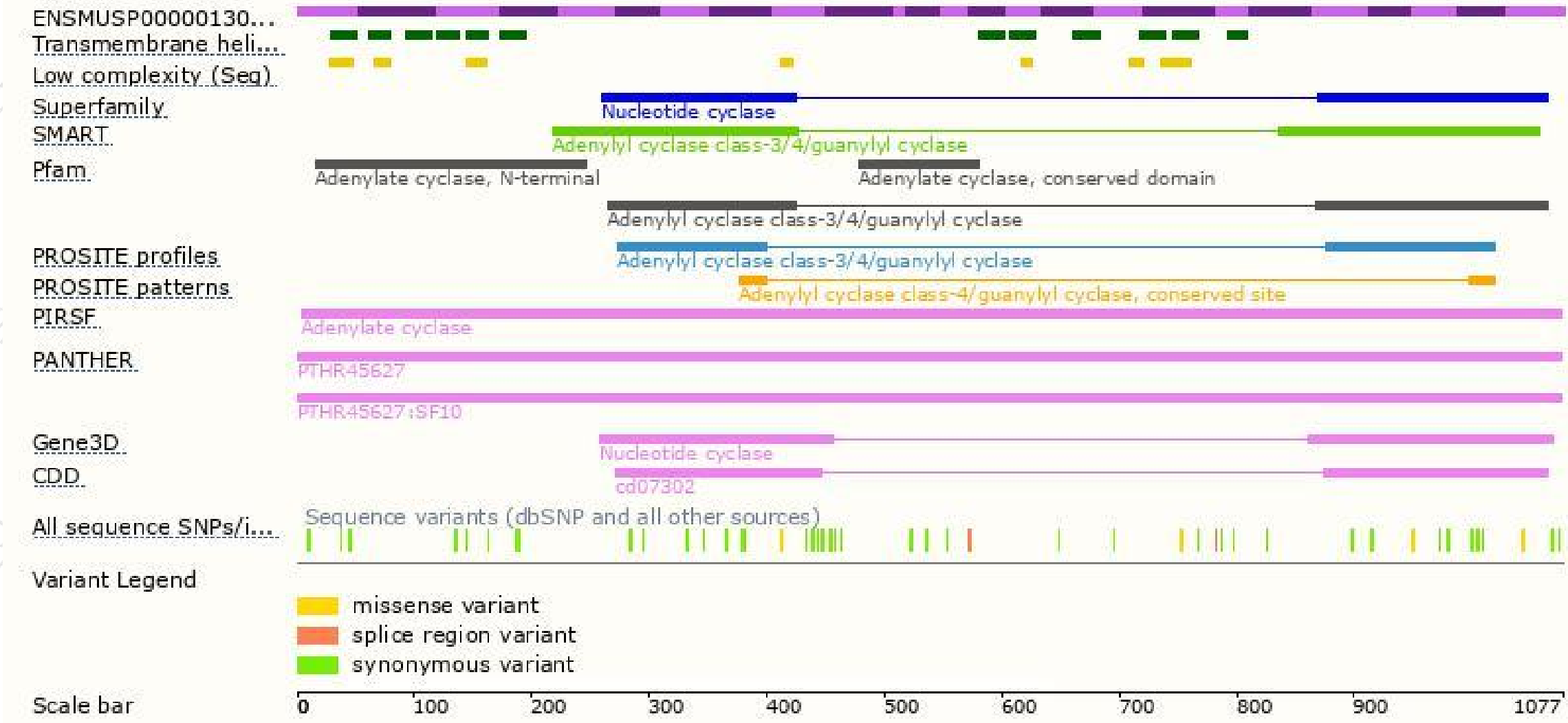
The strategy is based on the design of *Adcy4-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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