

Acad11 Cas9-KO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Acad11

Project type

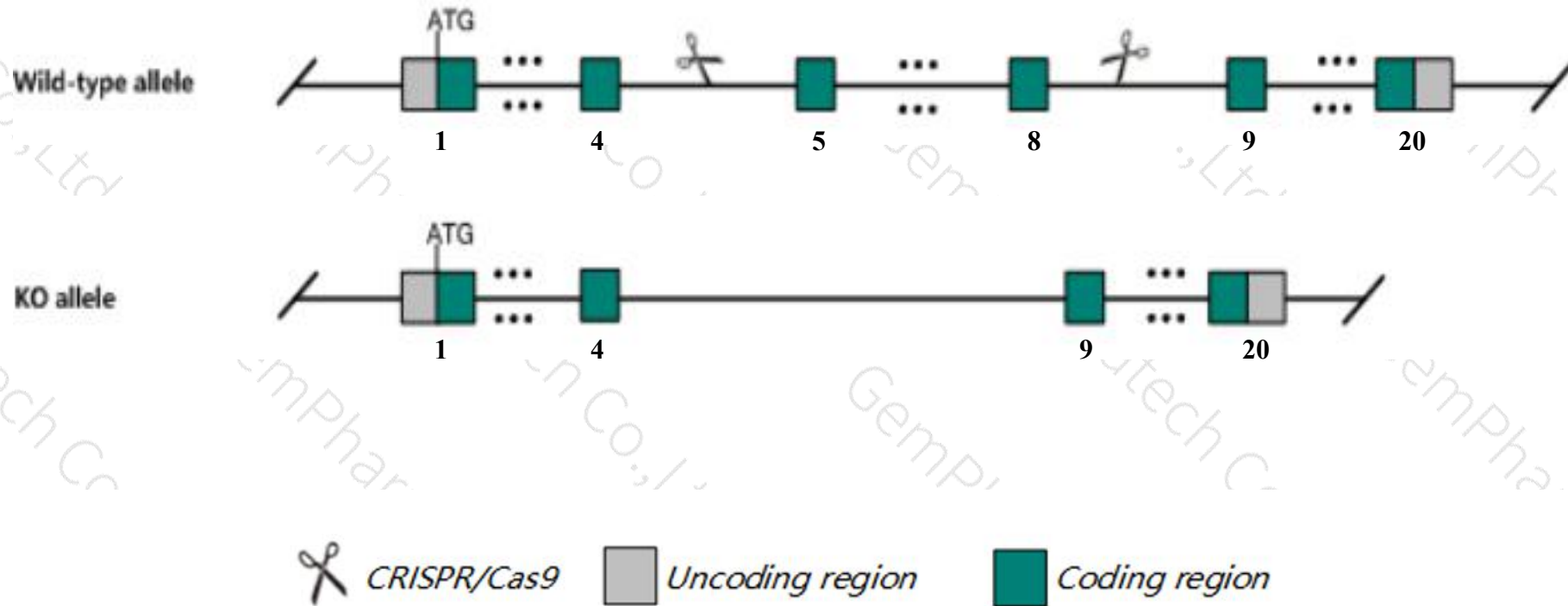
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Acad11* gene. The schematic diagram is as follows:



- The *Acad11* gene has 8 transcripts. According to the structure of *Acad11* gene, exon5-exon8 of *Acad11-201* (ENSMUST00000047799.12) transcript is recommended as the knockout region. The region contains 536bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Acad11* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Acad11* gene is located on the Chr9. 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)

Acad11 acyl-Coenzyme A dehydrogenase family, member 11 [*Mus musculus* (house mouse)]

Gene ID: 102632, updated on 13-Mar-2020

Summary

- Official Symbol** Acad11 provided by MGI
- Official Full Name** acyl-Coenzyme A dehydrogenase family, member 11 provided by MGI
- Primary source** MGI:MGI:2143169
- See related** Ensembl:ENSMUSG00000090150
- 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** AI987948; 5730439E10Rik
- Expression** Broad expression in liver adult (RPKM 65.5), kidney adult (RPKM 50.8) and 23 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 9; 9 F1 [See Acad11 in Genome Data Viewer](#)

Exon count: 20

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	9	NC_000075.6 (104063724..104127656)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	9	NC_000075.5 (103966033..104029976)

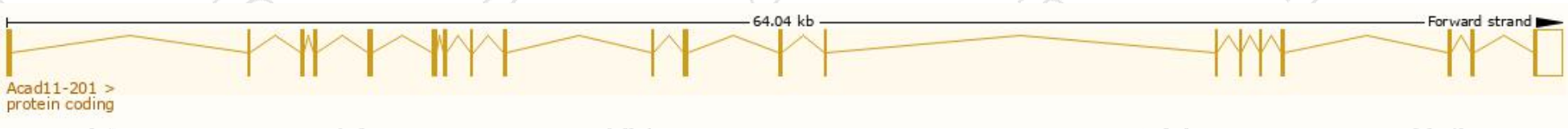


Transcript information (Ensembl)

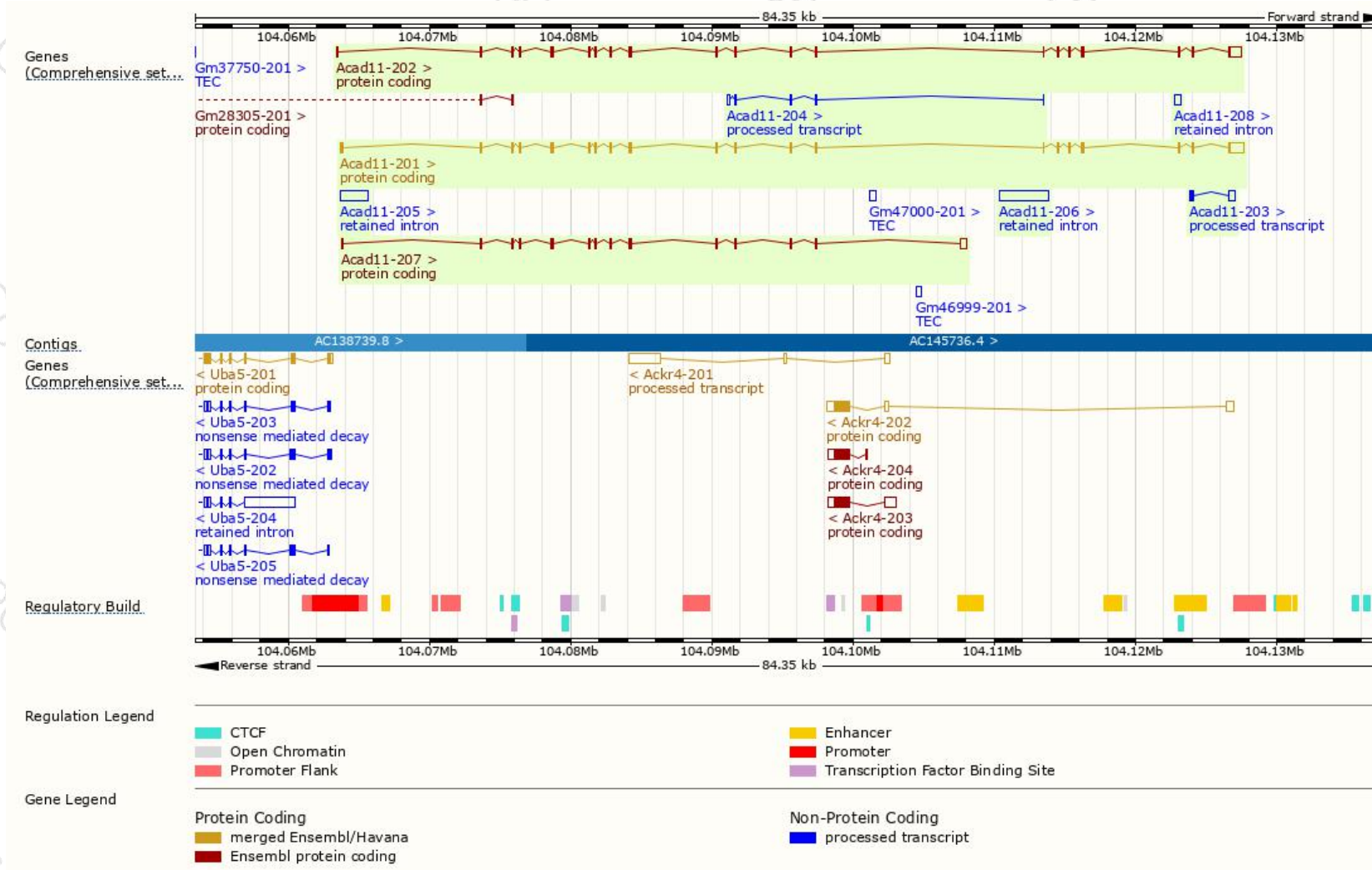
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Acad11-201	ENSMUST00000047799.12	3444	779aa	Protein coding	CCDS23458	A0A0R4J0I6	TSL:1 GENCODE basic APPRIS P1
Acad11-202	ENSMUST00000120854.7	3108	661aa	Protein coding	-	D3YTQ5	TSL:5 GENCODE basic
Acad11-207	ENSMUST00000189998.2	2030	541aa	Protein coding	-	A0A087WSI8	TSL:5 GENCODE basic
Acad11-203	ENSMUST00000128714.1	614	No protein	Processed transcript	-	-	TSL:3
Acad11-204	ENSMUST00000154431.1	598	No protein	Processed transcript	-	-	TSL:3
Acad11-206	ENSMUST00000189133.1	3463	No protein	Retained intron	-	-	TSL:NA
Acad11-205	ENSMUST00000185819.1	1949	No protein	Retained intron	-	-	TSL:NA
Acad11-208	ENSMUST00000216220.1	495	No protein	Retained intron	-	-	TSL:NA

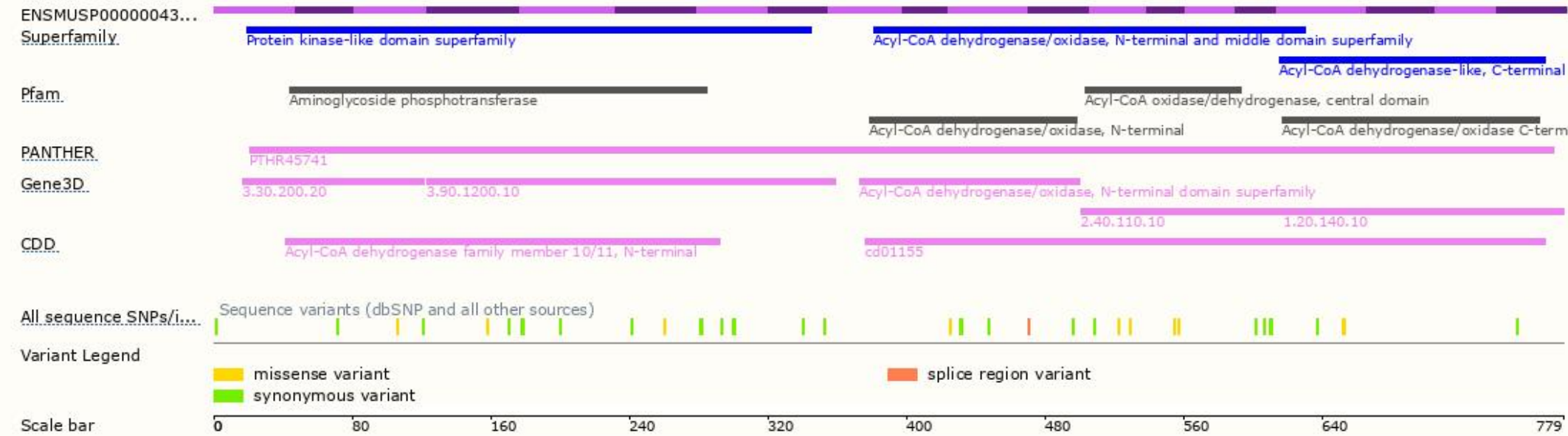
The strategy is based on the design of *Acad11-201* transcript,the transcription is shown below



Genomic location distribution



Protein domain



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

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