

*Acs*m5 Cas9-CKO Strategy

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Project Overview

Project Name

Acsm5

Project type

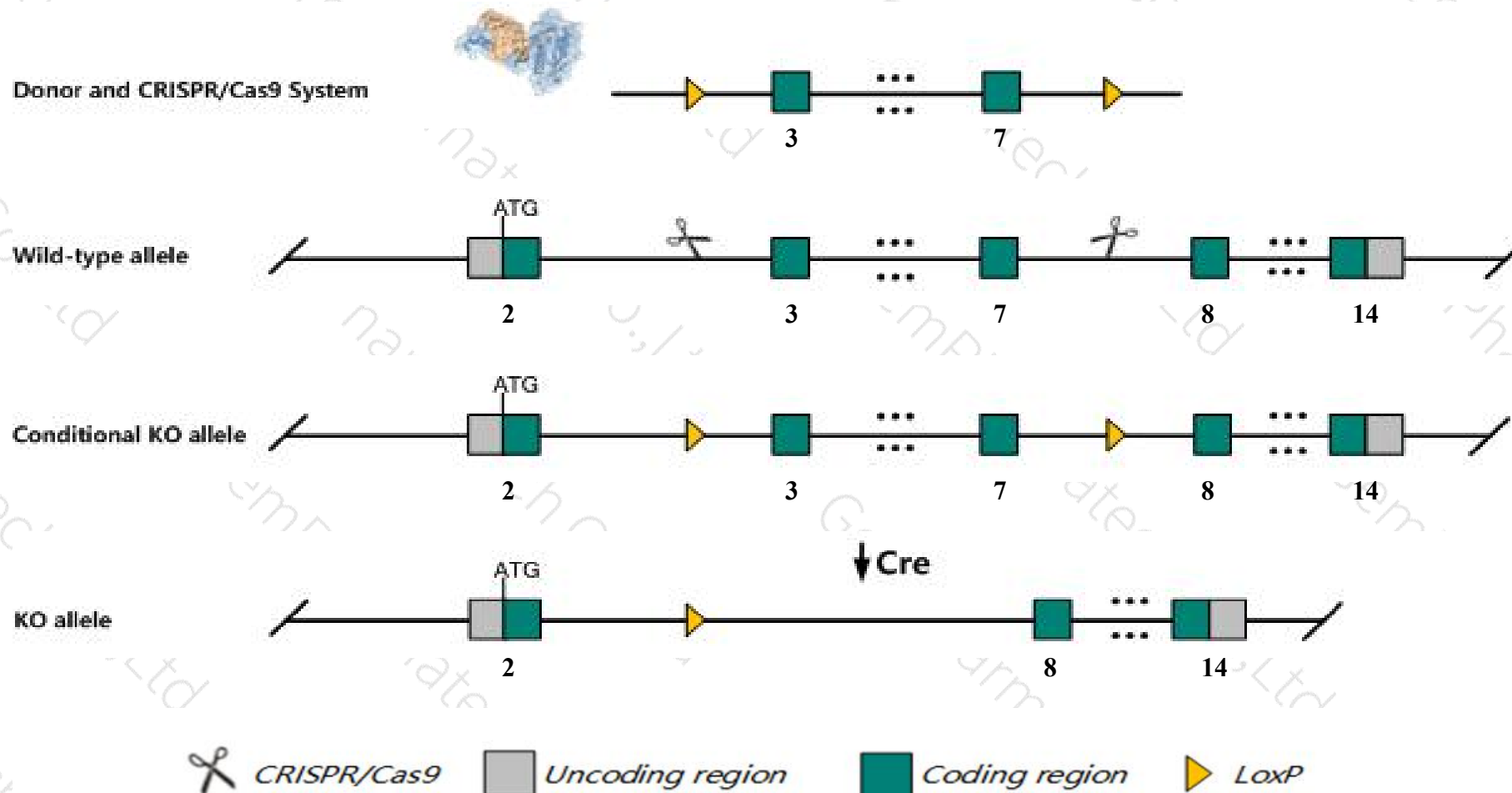
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Acsf5* gene. The schematic diagram is as follows:



- The *Acsn5* gene has 7 transcripts. According to the structure of *Acsn5* gene, exon3-exon7 of *Acsn5-201* (ENSMUST00000066465.2) transcript is recommended as the knockout region. The region contains 797bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Acsn5* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Acsn5* gene is located on the Chr7. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Acsn5 acyl-CoA synthetase medium-chain family member 5 [*Mus musculus* (house mouse)]

Gene ID: 272428, updated on 5-Apr-2020

Summary

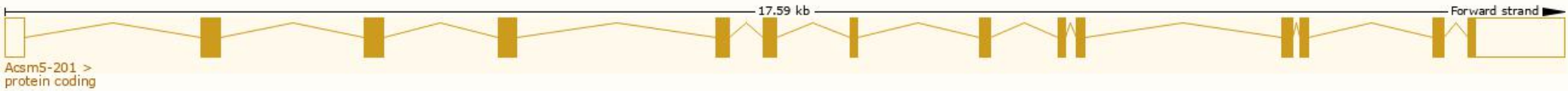
Official Symbol	Acsn5 provided by MGI
Official Full Name	acyl-CoA synthetase medium-chain family member 5 provided by MGI
Primary source	MGI:MGI:2444086
See related	Ensembl:ENSMUSG00000030972
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C730019D22; C730027J19Rik
Expression	Biased expression in liver adult (RPKM 23.3) and kidney adult (RPKM 20.2) See more
Orthologs	human all

Transcript information (Ensembl)

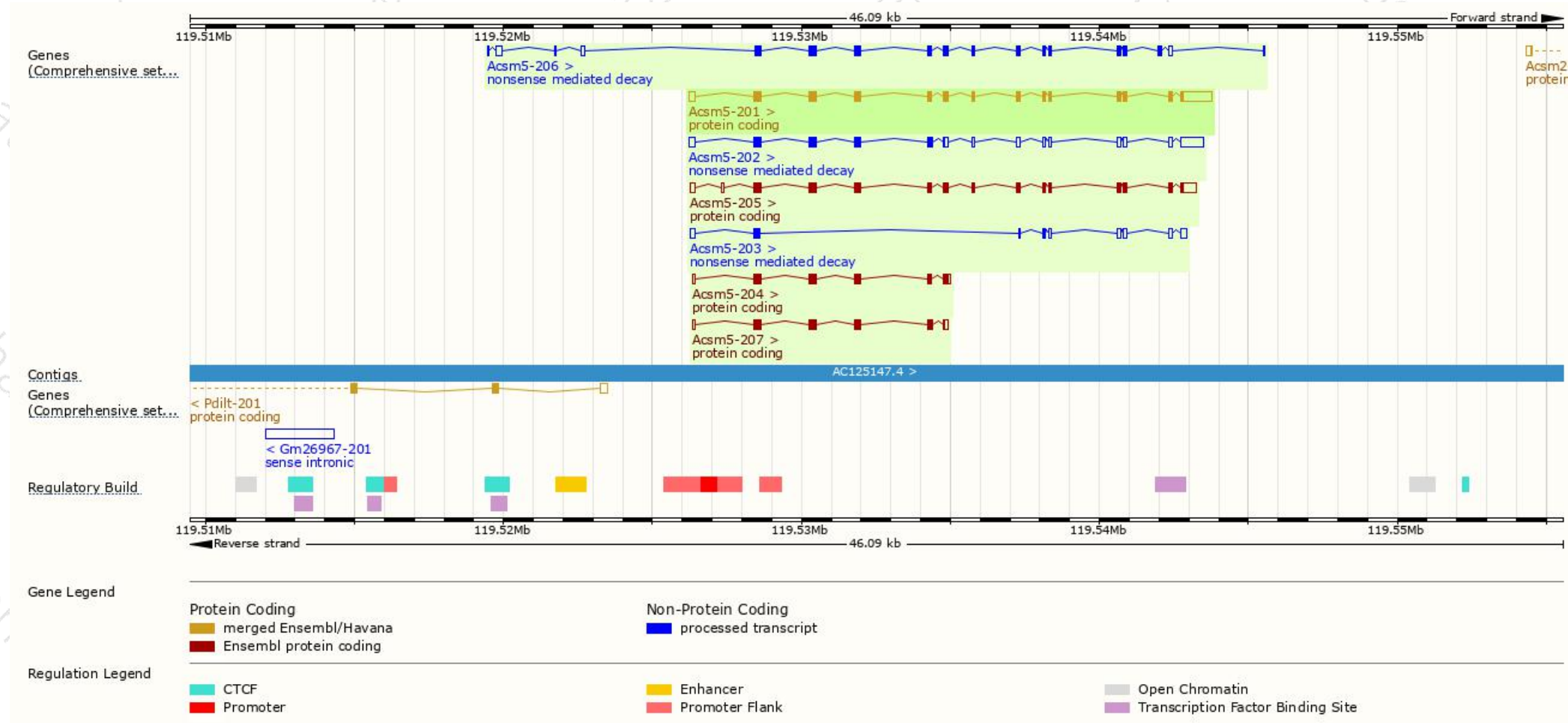
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Acs5-201	ENSMUST00000066465.2	2981	578aa	Protein coding	CCDS40106	Q8BGA8	TSL:1 GENCODE basic APPRIS P1
Acs5-205	ENSMUST00000207440.1	2494	578aa	Protein coding	CCDS40106	Q8BGA8	TSL:1 GENCODE basic APPRIS P1
Acs5-204	ENSMUST00000207387.1	1130	311aa	Protein coding	-	Q8BGA8	TSL:1 GENCODE basic
Acs5-207	ENSMUST00000207813.1	1084	273aa	Protein coding	-	Q6P8J0	TSL:1 GENCODE basic
Acs5-202	ENSMUST00000207307.1	2703	273aa	Nonsense mediated decay	-	Q6P8J0	TSL:1
Acs5-206	ENSMUST00000207796.1	2272	545aa	Nonsense mediated decay	-	A0A140LHR8	TSL:5
Acs5-203	ENSMUST00000207381.1	1130	92aa	Nonsense mediated decay	-	A0A140LI83	TSL:5

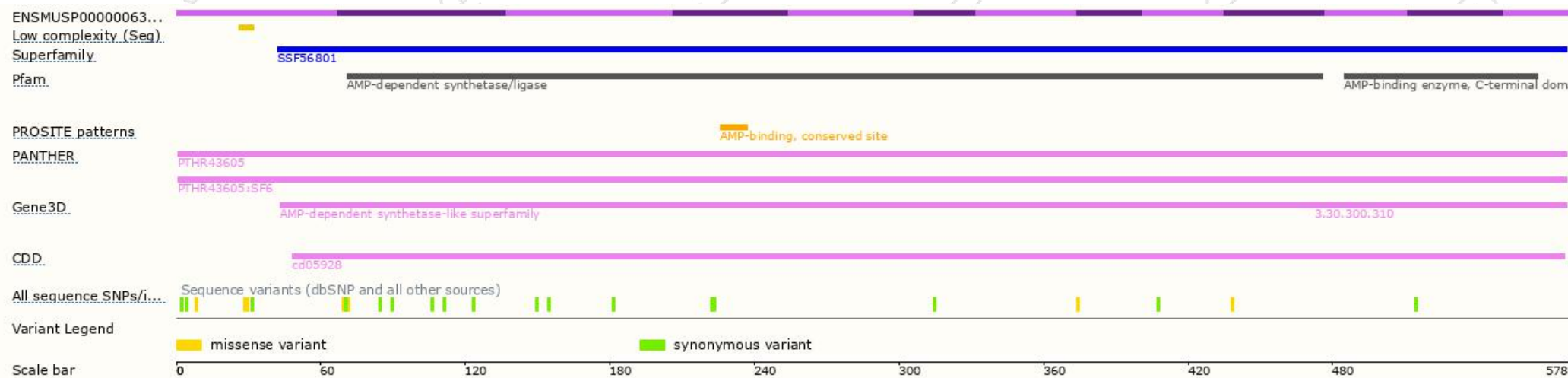
The strategy is based on the design of *Acs5-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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