

Acss3 Cas9-KO Strategy

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Project Overview

Project Name

Acss3

Project type

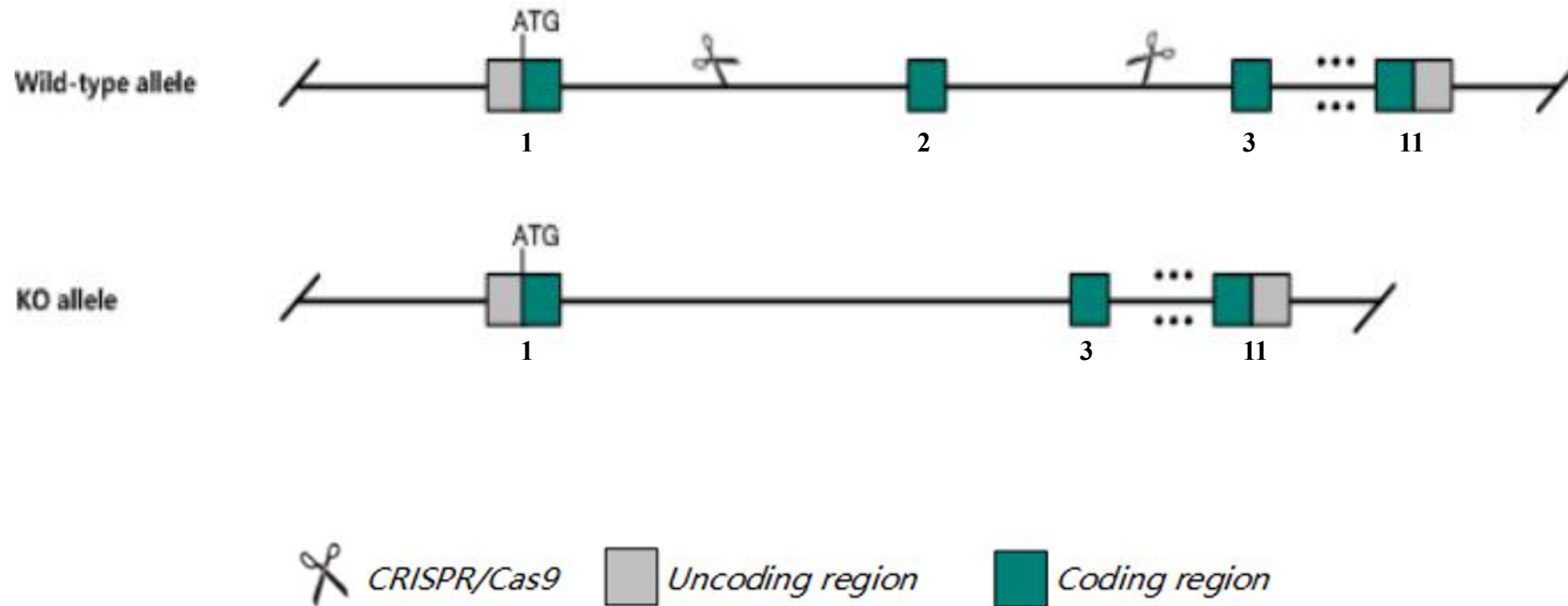
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Acss3* gene. The schematic diagram is as follows:



The *Acss3* gene has 3 transcripts. According to the structure of *Acss3* gene, exon2 of *Acss3*-201(ENSMUST00000044668.4) transcript is recommended as the knockout region. The region contains 145bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Acss3* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Acss3* gene is located on the Chr10. 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.

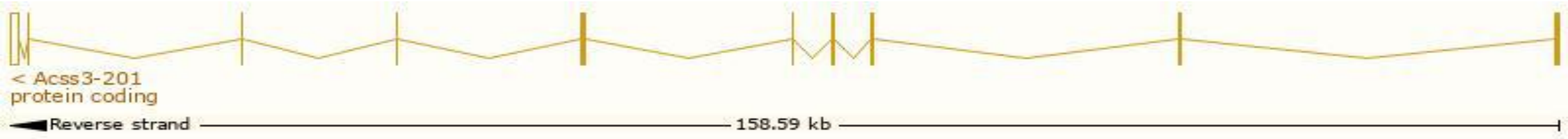
This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Transcript information Ensembl

The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Acss3-203	ENSMUST00000165067.8	4696	682aa	Protein coding	CCDS48688	Q14DH7	TSL:5 GENCODE basic APPRIS P1
Acss3-201	ENSMUST00000044668.4	2494	497aa	Protein coding	CCDS24159	Q14DH7	TSL:1 GENCODE basic
Acss3-202	ENSMUST00000065567.5	1803	No protein	Processed transcript	-	-	TSL:1

The strategy is based on the design of *Acss3-201* 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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