

Adgrf4 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Adgrf4

Project type

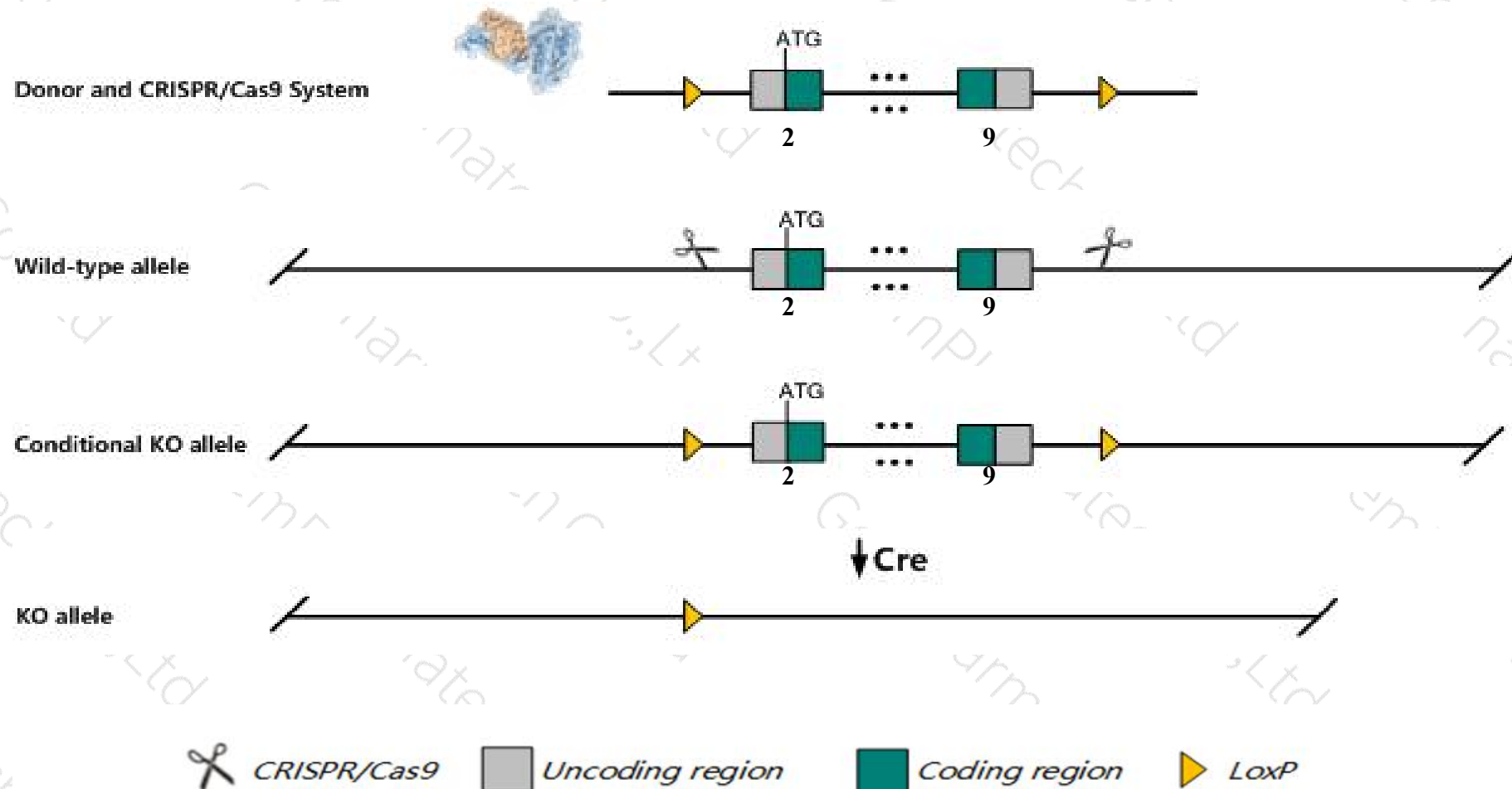
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adgrf4* gene. The schematic diagram is as follows:



Technical routes

- The *Adgrf4* gene has 4 transcripts. According to the structure of *Adgrf4* gene, exon2-exon9 of *Adgrf4-201* (ENSMUST00000024711.10) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Adgrf4* 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

- According to the existing MGI data, Mice homozygous for a reporter allele exhibit normal viability and fertility.
- The *Adgrf4* gene is located on the Chr17. 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)

Adgrf4 adhesion G protein-coupled receptor F4 [Mus musculus (house mouse)]

Gene ID: 78249, updated on 31-Jan-2019

Summary



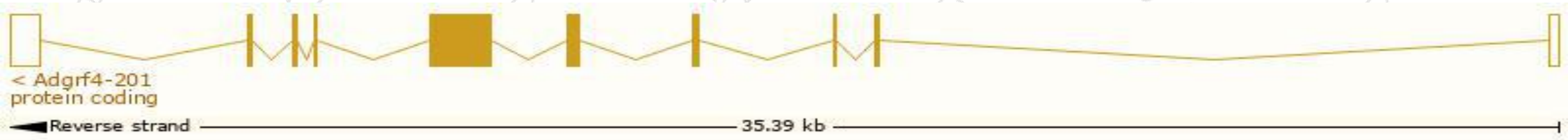
Official Symbol	Adgrf4 provided by MGI
Official Full Name	adhesion G protein-coupled receptor F4 provided by MGI
Primary source	MGI:MGI:1925499
See related	Ensembl:ENSMUSG00000023918
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4632435A09Rik, AV239010, Gpr115
Expression	Broad expression in frontal lobe adult (RPKM 1.5), stomach adult (RPKM 1.3) and 16 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

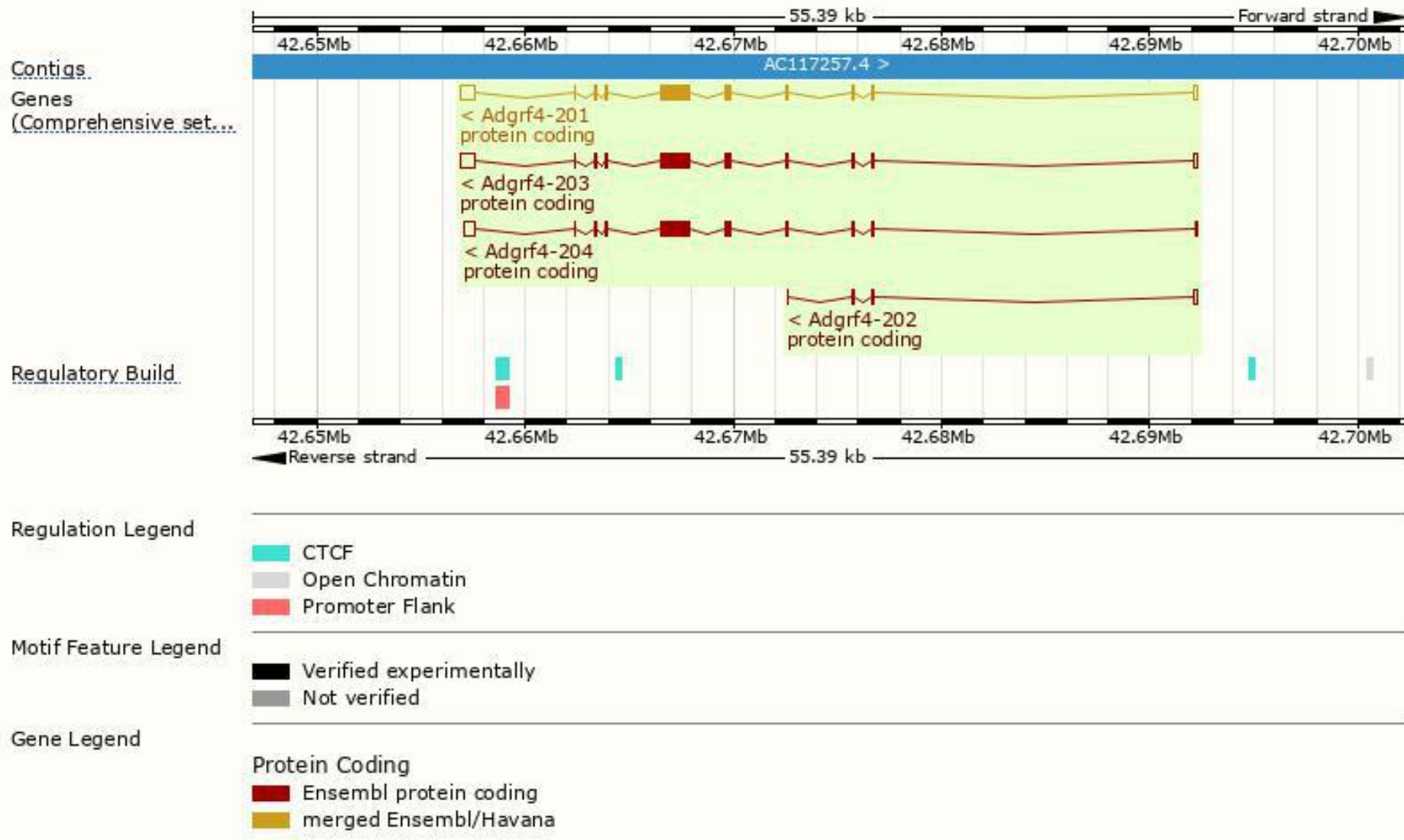
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgrf4-201	ENSMUST00000024711.10	3060	698aa	Protein coding	CCDS50113	A0A0D9SEG9	TSL:1 GENCODE basic APPRIS P1
Adgrf4-203	ENSMUST00000167993.7	2983	698aa	Protein coding	CCDS50113	A0A0D9SEG9	TSL:1 GENCODE basic APPRIS P1
Adgrf4-204	ENSMUST00000170723.7	2751	698aa	Protein coding	CCDS50113	A0A0D9SEG9	TSL:1 GENCODE basic APPRIS P1
Adgrf4-202	ENSMUST00000164524.1	390	67aa	Protein coding	-	E9PYI0	CDS 3' incomplete TSL:3

The strategy is based on the design of *Adgrf4-201* 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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