

Adgrl4 Cas9-CKO Strategy

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Design Date: 2018-7-6

Project Overview

Project Name

Adgrl4

Project type

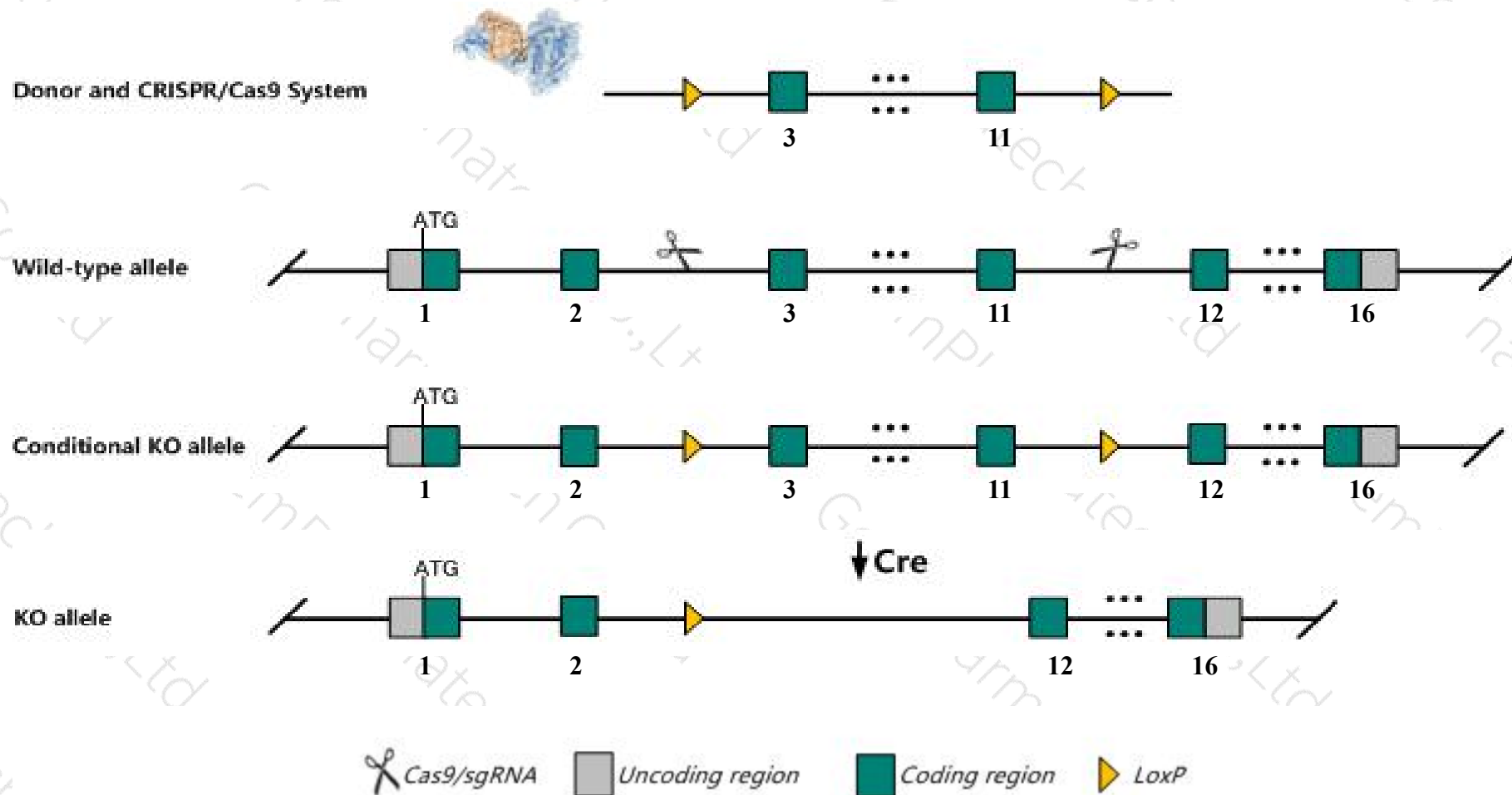
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adgrl4* gene. The schematic diagram is as follows:



- The *Adgrl4* gene has 6 transcripts. According to the structure of *Adgrl4* gene, exon3-exon11 of *Adgrl4-201* (ENSMUST00000046977.11) transcript is recommended as the knockout region. The region contains 1436bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Adgrl4* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- According to the existing MGI data, For a targeted mutation, no significant differences were detected between homozygous mice and controls in a high-throughput screen.
- The *Adgrl4* gene is located on the Chr3. 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)

Adgrl4 adhesion G protein-coupled receptor L4 [Mus musculus (house mouse)]

Gene ID: 170757, updated on 31-Jan-2019

Summary



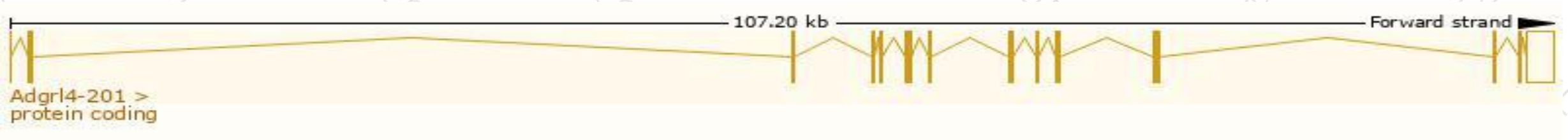
Official Symbol	Adgrl4 provided by MGI
Official Full Name	adhesion G protein-coupled receptor L4 provided by MGI
Primary source	MGI:MGI:2655562
See related	Ensembl:ENSMUSG00000039167
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110033N21Rik, ETL1, Eltd1, Eti
Expression	Broad expression in lung adult (RPKM 19.1), subcutaneous fat pad adult (RPKM 9.6) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

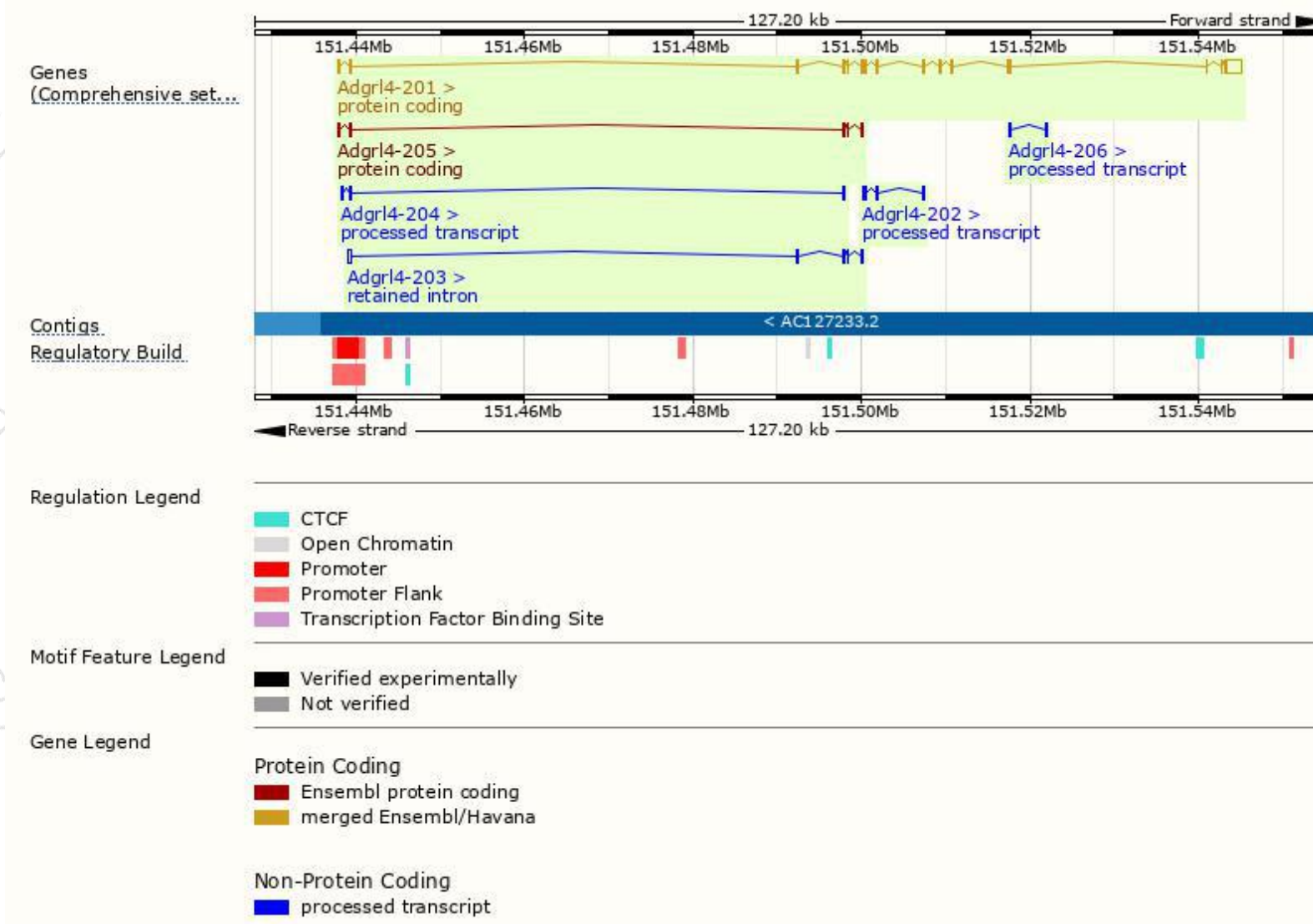
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgrl4-201	ENSMUST00000046977.11	4106	739aa	Protein coding	CCDS17910	Q923X1	TSL:1 GENCODE basic APPRIS P1
Adgrl4-205	ENSMUST00000196970.1	598	181aa	Protein coding	-	A0A0G2JGY1	CDS 3' incomplete TSL:3
Adgrl4-202	ENSMUST00000129283.1	625	No protein	Processed transcript	-	-	TSL:3
Adgrl4-206	ENSMUST00000198893.1	498	No protein	Processed transcript	-	-	TSL:3
Adgrl4-204	ENSMUST00000155652.1	345	No protein	Processed transcript	-	-	TSL:3
Adgrl4-203	ENSMUST00000141038.1	783	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Adgrl4-201* 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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