

Lgr6 Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Lgr6

Project type

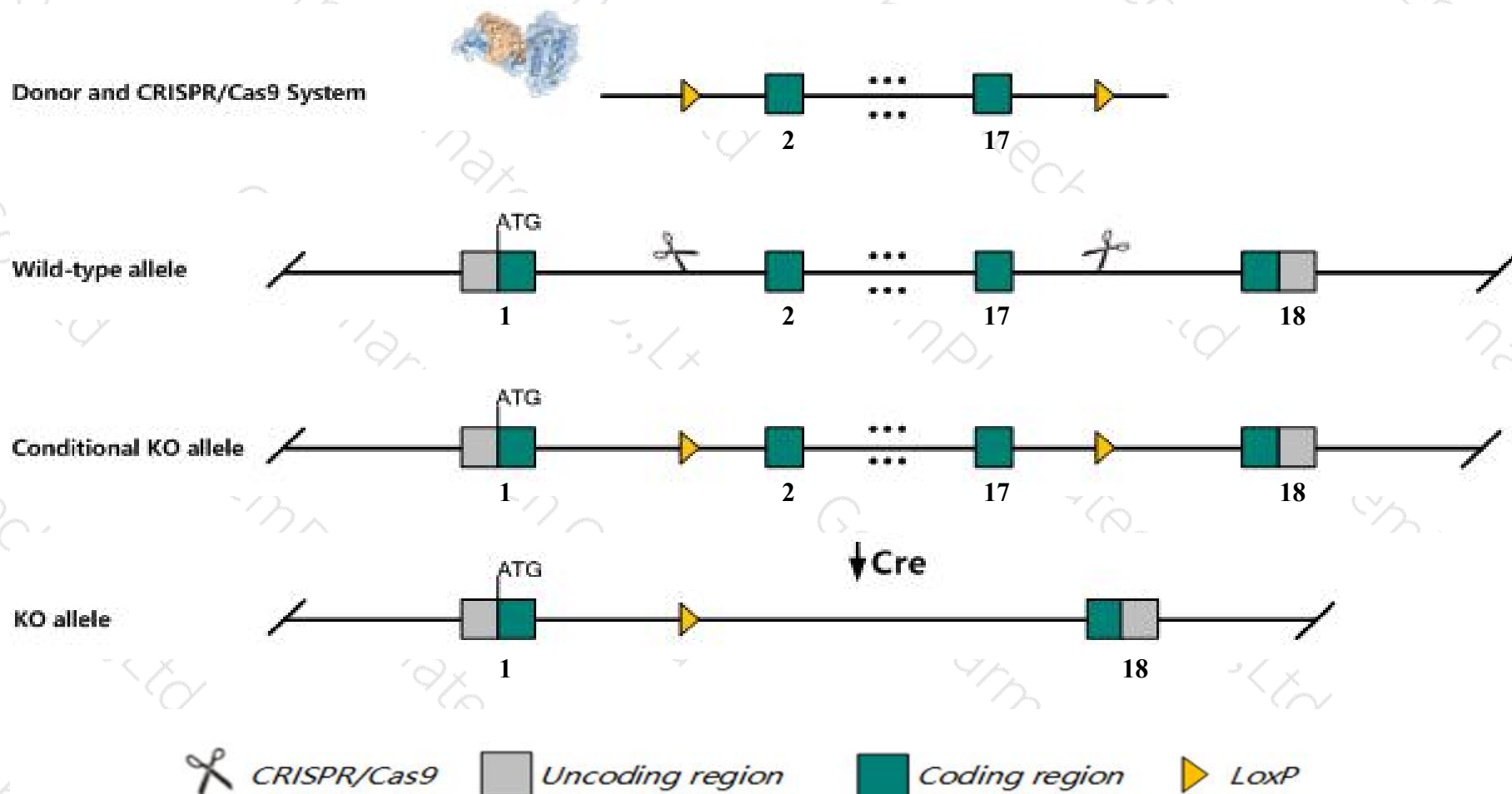
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lgr6* gene. The schematic diagram is as follows:



Technical routes

- The *Lgr6* gene has 3 transcripts. According to the structure of *Lgr6* gene, exon2-exon17 of *Lgr6-201* (ENSMUST00000044828.13) 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 *Lgr6* 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.

- According to the existing MGI data, Mice homozygous for a reporter/null allele are viable and fertile with no apparent abnormal phenotype. Similarly, mice homozygous for a knock-in allele are healthy and fertile.
- The *Lgr6* gene is located on the Chr1. 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)

Lgr6 leucine-rich repeat-containing G protein-coupled receptor 6 [Mus musculus (house mouse)]

Gene ID: 329252, updated on 5-Mar-2019

Summary



Official Symbol	Lgr6 provided by MGI
Official Full Name	leucine-rich repeat-containing G protein-coupled receptor 6 provided by MGI
Primary source	MGI:MGI:2441805
See related	Ensembl:ENSMUSG00000042793
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A530037C04Rik, D830026M09
Expression	Biased expression in ovary adult (RPKM 9.3), heart adult (RPKM 5.7) and 8 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

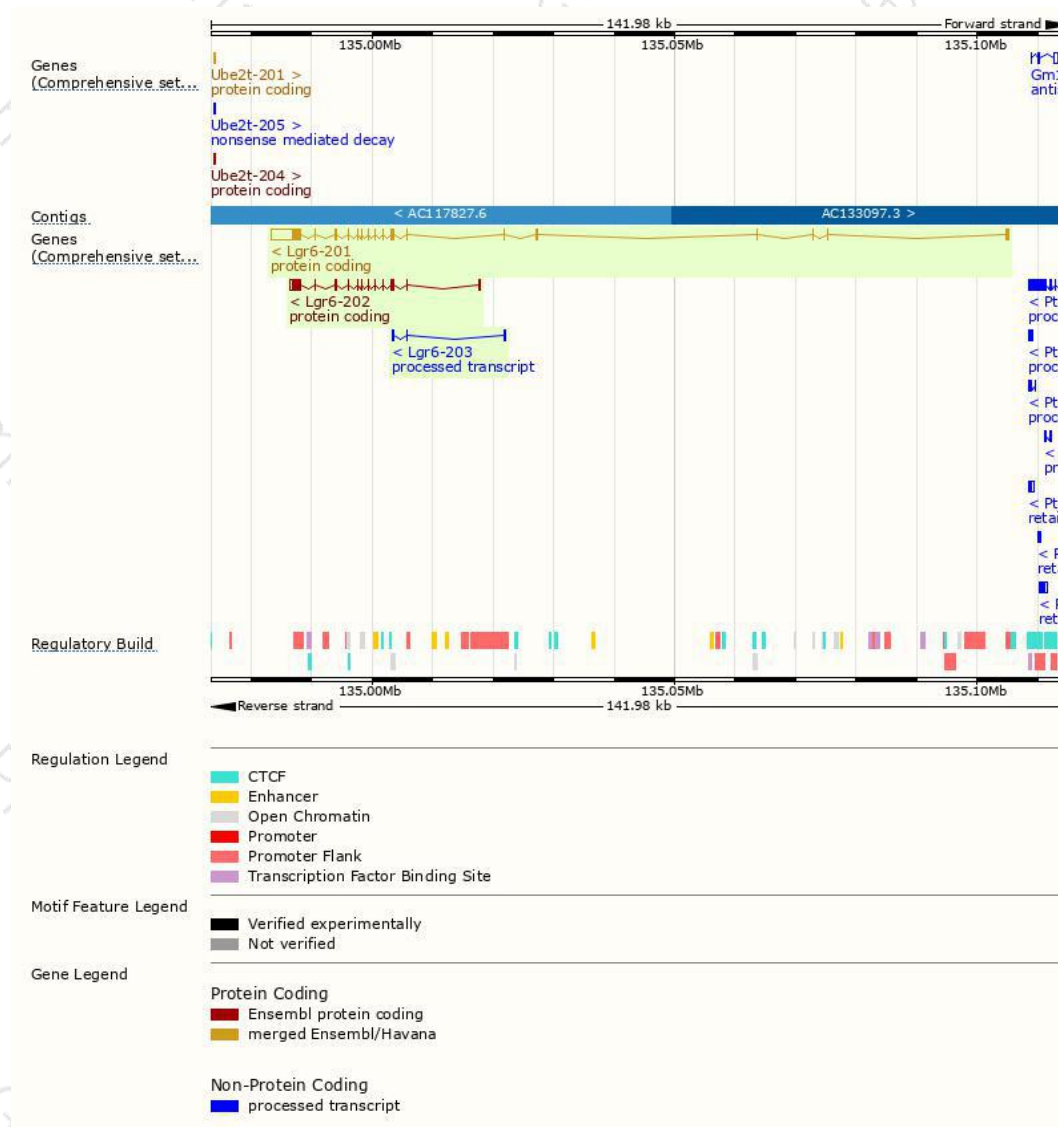
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lgr6-201	ENSMUST00000044828.13	6675	967aa	Protein coding	CCDS15314	Q3UVD5	TSL:1 GENCODE basic APPRIS P1
Lgr6-202	ENSMUST00000137968.7	2820	690aa	Protein coding	-	D3Z6S4	TSL:1 GENCODE basic
Lgr6-203	ENSMUST00000139369.1	360	No protein	Processed transcript	-	-	TSL:3

The strategy is based on the design of *Lgr6-201* 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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