

C6 Cas9-KO Strategy

Designer:

Huimin Su

Reviewer:

Ruirui Zhang

Design Date:

2019/9/23

Project Overview

Project Name

C6

Project type

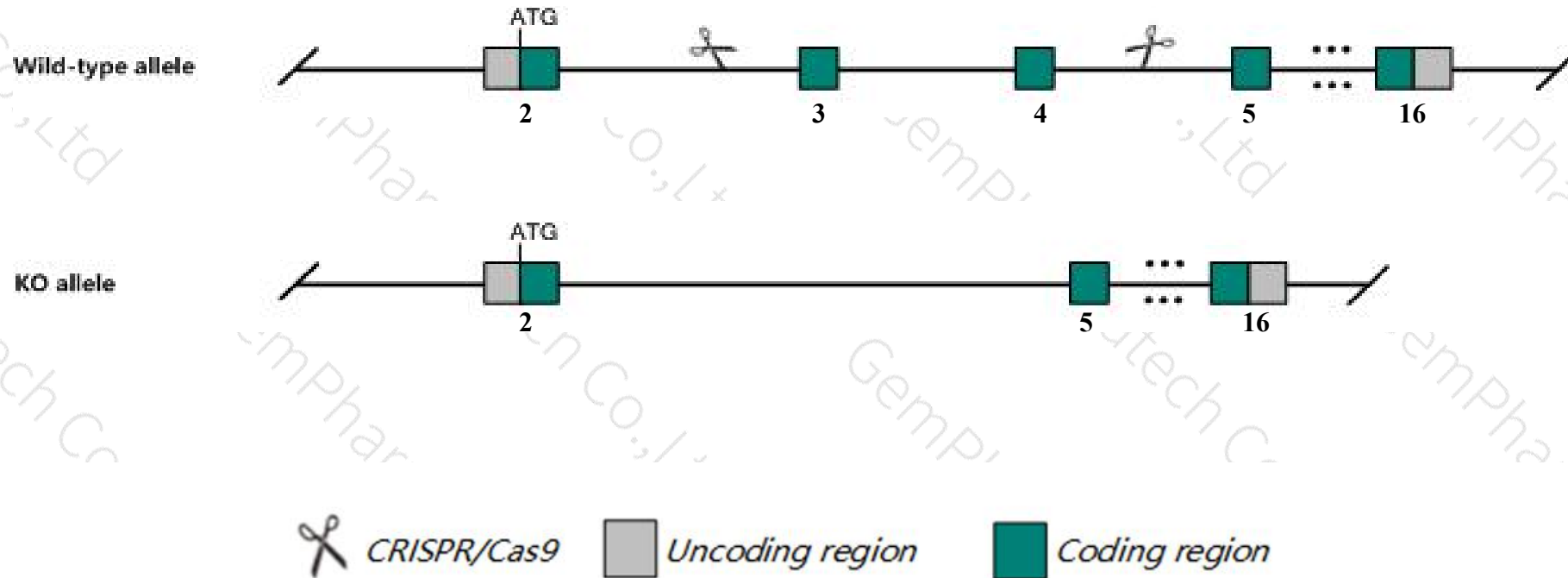
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *C6* gene. The schematic diagram is as follows:



- The *C6* gene has 5 transcripts. According to the structure of *C6* gene, exon3-exon4 of *C6-204* (ENSMUST00000162585.7) transcript is recommended as the knockout region. The region contains 302bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *C6* gene. The brief process is as follows: CRISPR/Cas9 system we

- According to the existing MGI data, Mice homozygous for a spontaneous mutation exhibit decreased susceptibility to ischemia reperfusion-induced renal injury.
- The *C6* gene is located on the Chr15. 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.

Gene information (NCBI)

C6 complement component 6 [*Mus musculus* (house mouse)]

Gene ID: 12274, updated on 12-Aug-2019

Summary

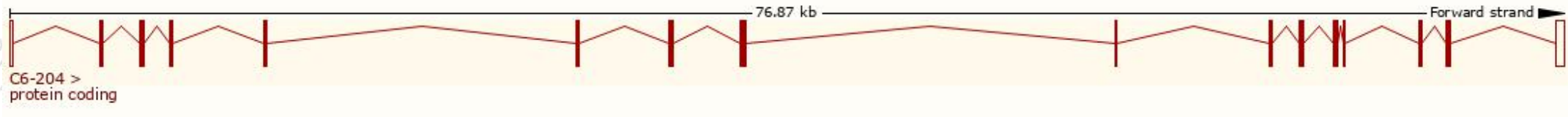
Official Symbol	C6 provided by MGI
Official Full Name	complement component 6 provided by MGI
Primary source	MGI:MGI:88233
See related	Ensembl:ENSMUSG00000022181
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW111623
Expression	Biased expression in lung adult (RPKM 5.0), subcutaneous fat pad adult (RPKM 4.2) and 11 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

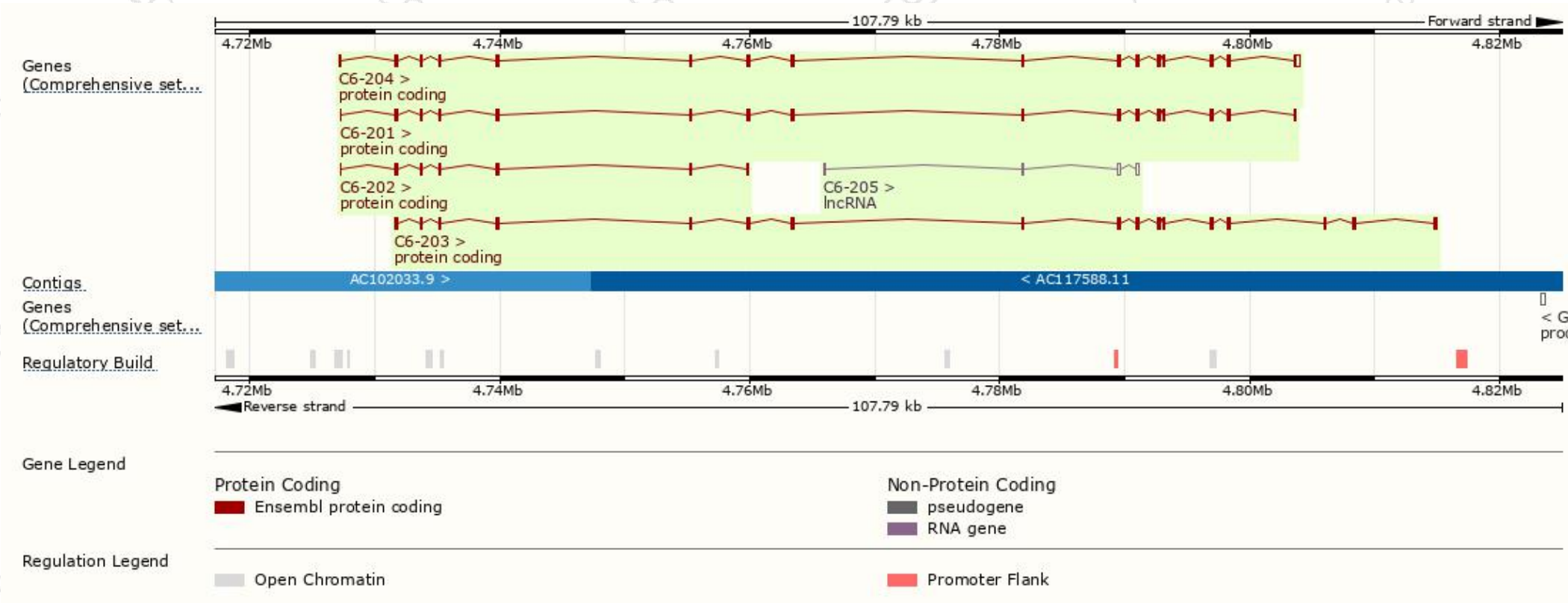
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
C6-204	ENSMUST00000162585.7	2876	769aa	Protein coding	CCDS37025	Q91X70	TSL:1 GENCODE basic APPRIS P2
C6-201	ENSMUST00000022788.14	2447	769aa	Protein coding	CCDS37025	Q91X70	TSL:5 GENCODE basic APPRIS P2
C6-203	ENSMUST00000162350.2	2874	934aa	Protein coding	-	E9Q6D8	TSL:5 GENCODE basic APPRIS ALT2
C6-202	ENSMUST00000161997.7	921	261aa	Protein coding	-	Q8BRY4	CDS 3' incomplete TSL:1
C6-205	ENSMUST00000162729.1	573	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of C6-204 transcript,The transcription is shown below



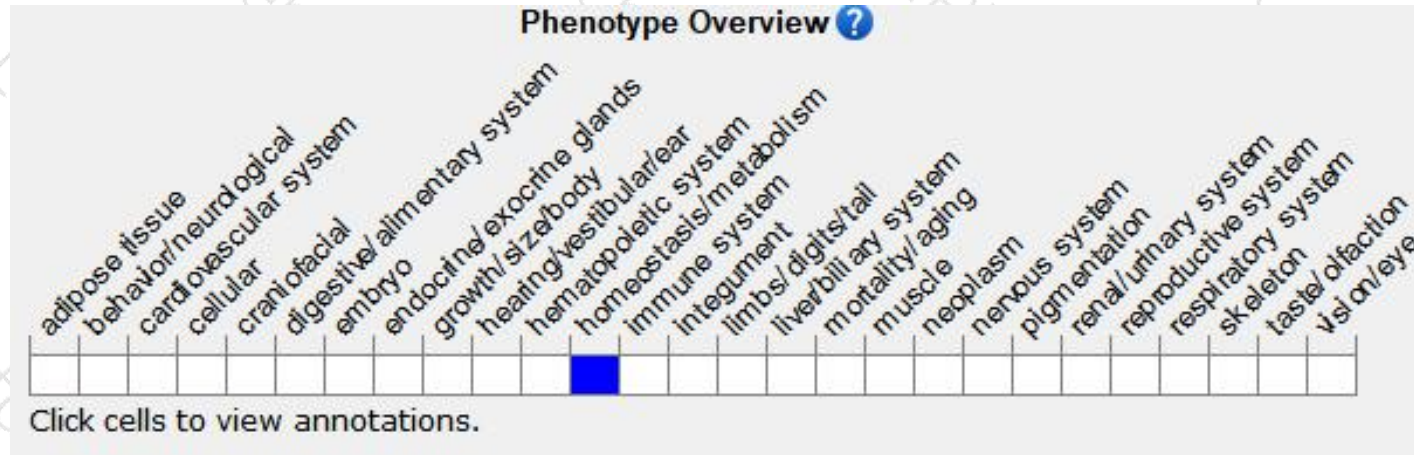
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Mice homozygous for a spontaneous mutation exhibit decreased susceptibility to ischemia reperfusion-induced renal injury.

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

Tel: 400-9660890

