

Clic1 Cas9-KO Strategy

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Project Overview

Project Name

Clic1

Project type

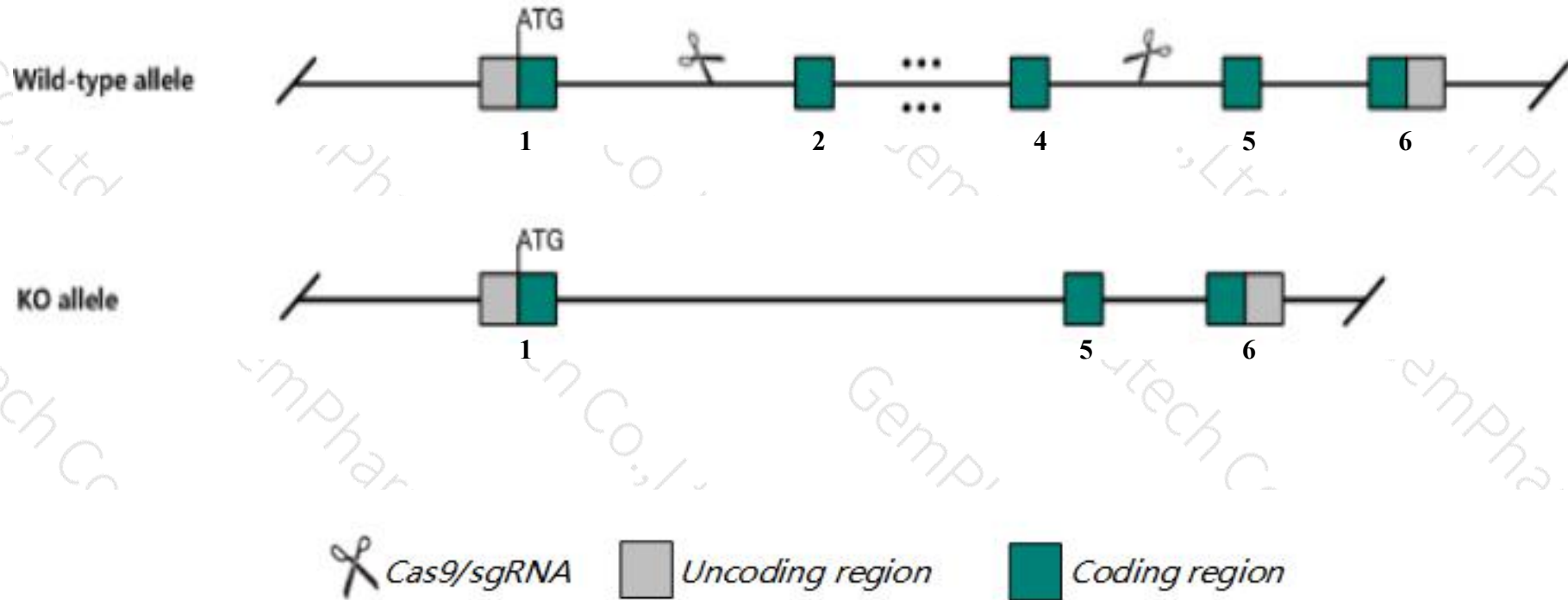
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Clic1* gene. The schematic diagram is as follows:



- The *Clic1* gene has 2 transcripts. According to the structure of *Clic1* gene, exon2-exon4 of *Clic1*-201(ENSMUST00000007257.9) transcript is recommended as the knockout region. The region contains 343bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Clic1* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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.

- According to the existing MGI data, mice Homozygous for disruptions in this gene display abnormal platelet number, activation and aggregation and prolonged bleeding time.
- Knockout the region may affect the 5 terminal regulation function of *Ddah2* and *Msh5* gene.
- The *Clic1* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Clic1 chloride intracellular channel 1 [Mus musculus (house mouse)]

Gene ID: 114584, updated on 13-Mar-2020

Summary



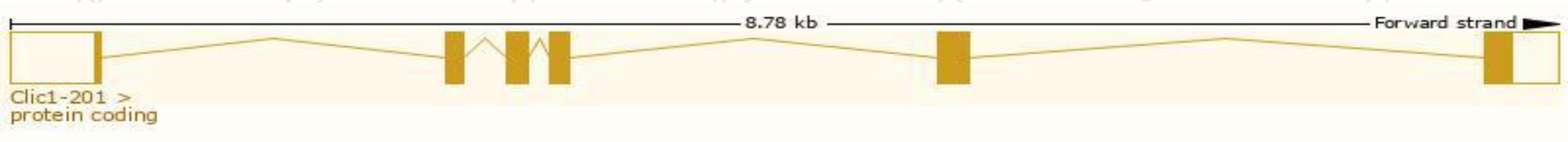
Official Symbol	Clic1 provided by MGI
Official Full Name	chloride intracellular channel 1 provided by MGI
Primary source	MGI:MGI:2148924
See related	Ensembl:ENSMUSG00000007041
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Clcp, G6
Expression	Ubiquitous expression in large intestine adult (RPKM 126.6), thymus adult (RPKM 119.9) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

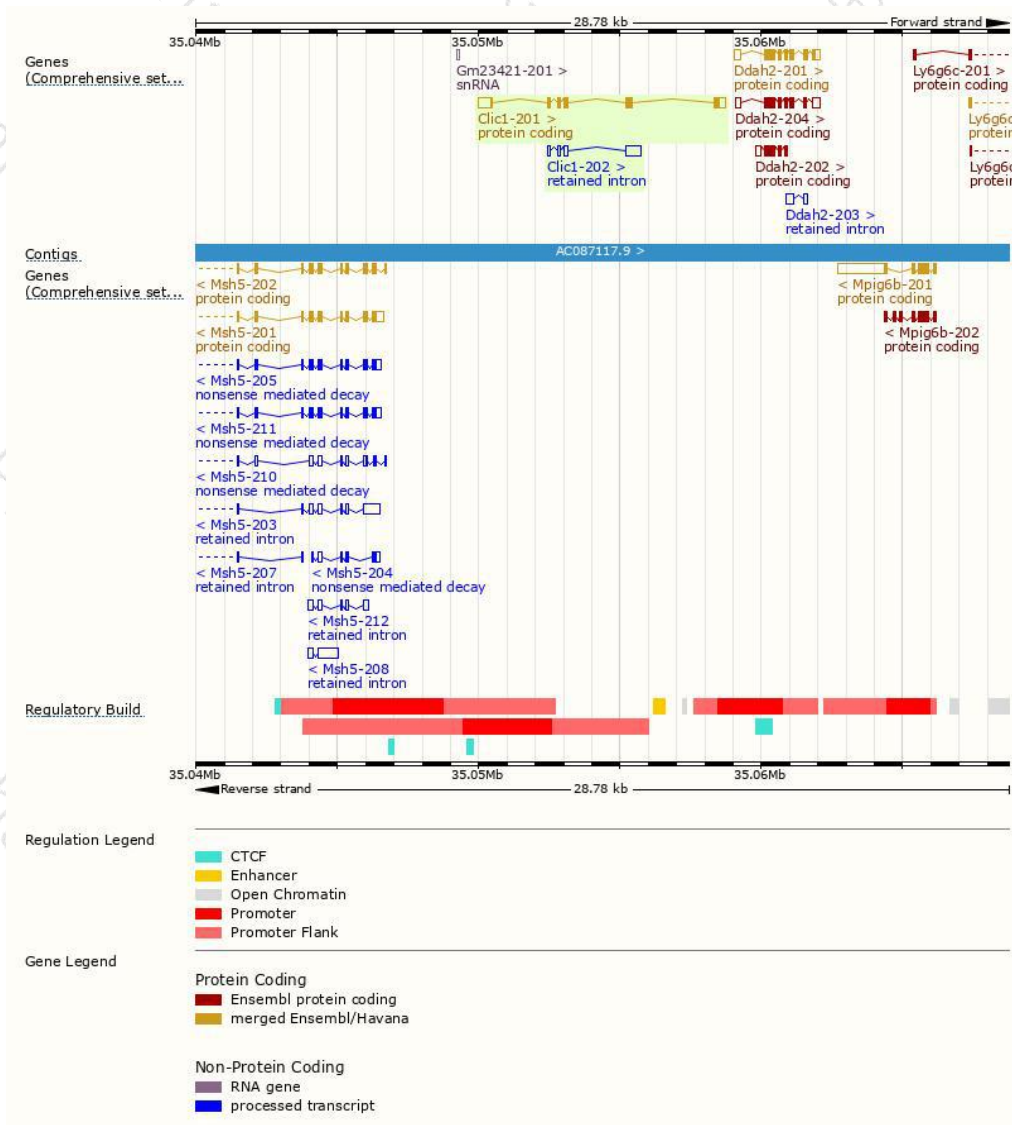
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Clic1-201	ENSMUST00000007257.9	1466	241aa	Protein coding	CCDS28675	Q542F1 Q9Z1Q5	TSL:1 GENCODE basic APPRIS P1
Clic1-202	ENSMUST00000172599.1	843	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Clic1-201* transcript,the transcription is shown below:



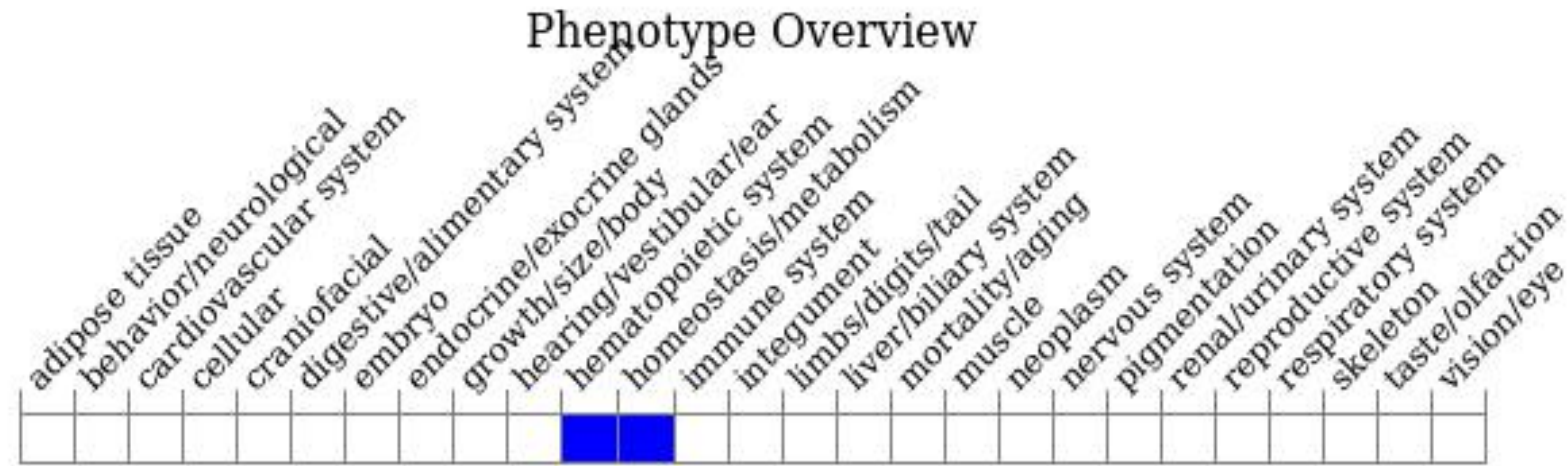
Genomic location distribution



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 disruptions in this gene display abnormal platelet number, activation and aggregation and prolonged bleeding time.

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

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